

# Driver Guide

## BZL MCV DD EV



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# Introduction

## **The safety of our colleagues, customers and other road users is our number one priority.**

In designing this vehicle, we have tried to remain true to those things that have served us well. Most things about this vehicle will therefore be familiar to you and will need little or no explanation to an experienced and professional driver.

This manual has been created to help explain the new features and important differences that you need to be aware of these new vehicles.

You **MUST** take the time to read and understand this guidance and in common with all vehicles, you must not drive this bus unless you are fully aware of how to do so safely.

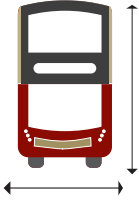
Please do not hesitate to ask any questions you may have about the safe operation of the bus by contacting your supervisor or control.

# What's new?



## Maximum capacity

64 (seated)	63 (seated)	62 (seated)
16 (standing)	15 (standing)	13 (standing)
0 wheelchair	1 wheelchair	2 wheelchairs



## Dimensions

length 10.9m (35'9") | width 2.55m (8'4")  
height 4.3m (14'1") | unladen Weight 13,680kgs



## Fully electric

Zero emission double deck bus  
Helps improve air quality



## Battery (SOC) - state of charge

The driver should contact control when the battery SOC is at 20% prior to the vehicle battery warning activating (an audible alarm will sound at 15%). This will allow the required response from Control.



## On-board bell alerts

There are a few differences in the sounds of the bells onboard this vehicle.



**Red bell push** - The upper and lower deck make different sounds when pressed to help drivers identify where the customer is seated.

**White bell push** - This bell is situated in the priority seating area and when pressed will highlight a 'bell symbol' in the drivers cab along with an audio announcement to let you know a passenger in the priority seating is alighting and may require additional assistance.



**Blue bell push** - This bell is situated in the wheelchair space and when pressed will highlight a 'wheelchair symbol' in the drivers cab along with an audio announcement to let you know that a passenger in the wheelchair space is alighting.

# Startup procedure

## 1. Master switch

Ensure cab main isolator switch (24v) is enabled.  
This can be found under the driver's seat (left side).



## 2. Power switch

Ensure cab main isolator switch (24v) is enabled.



## 3. Ignition switch

Turn ignition key to first position.



## 4. Warning systems

Wait for warning lights to turn off and for the Volvo logo to stop spinning. Listen for the fire suppression system “OK” message. If the warning shows “Low”, contact your supervisor.

## 5. Start the vehicle (Ready to Drive)

Turn ignition switch (key) fully to end and then release. The ignition switch will return to the previous position and the vehicle will be in Ready to Drive mode.

During the time you are waiting for the warning lights to turn off, the vehicle is conducting checks.

NOTE: If you turn the electric motor on too soon, it could lead to faults occurring.

Once the *Ready to Drive Symbol* appears, the vehicle is ready to select gear and drive as normal.

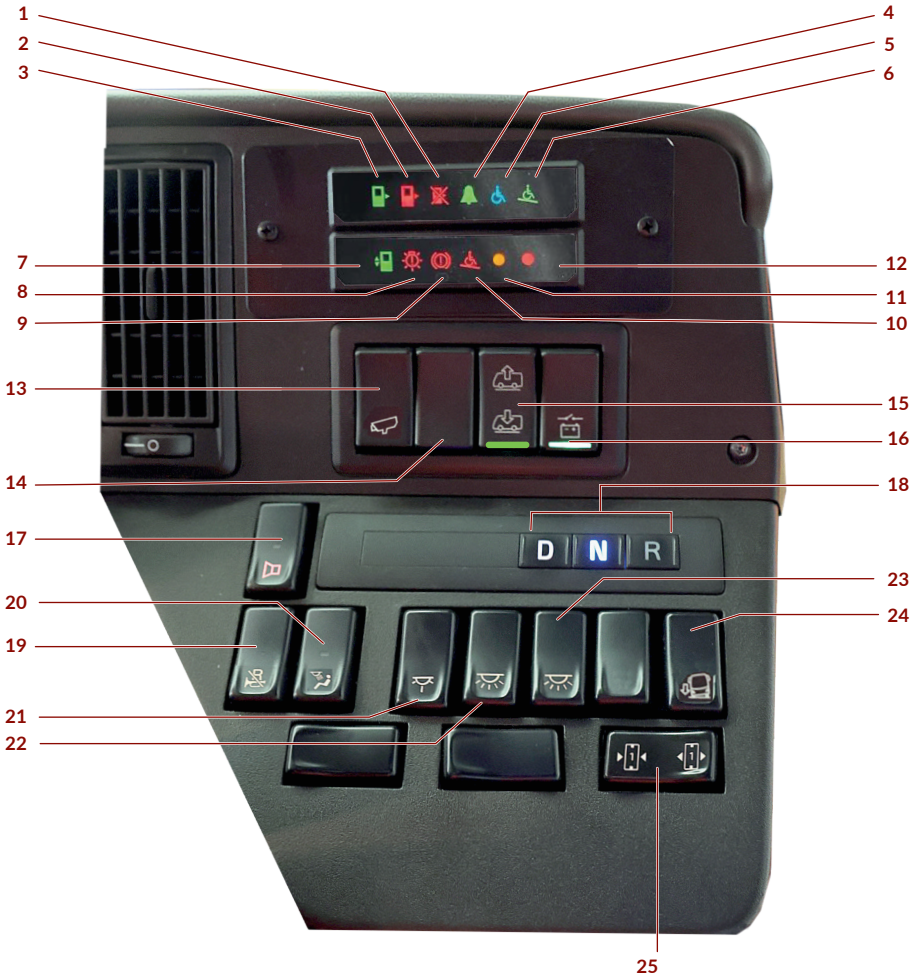


Ready to Drive  
Symbol

**Please note - The air compressor is electric and you will have no air supply if the traction voltage system is not on and the green bus icon (Ready to Drive) is not displayed.**

# Driver controls

## Dash Controls—right hand side



# Driver controls

## Driver's dash controls - right hand side

- 1 Any door open warning** Illuminates when any door is opened.
- 2 Emergency door open warning** Illuminates when offside emergency door is opened.
- 3 Doors low air pressure** Illuminates when air pressure is too low to operate the doors.
- 4 Bus stop request** Illuminates when stop request button is pressed. The light cancels once the entrance doors are opened.
- 5 Disabled request** Illuminates when requested in the wheelchair area.
- 6 Ramp unstowed** Illuminates if the ramp is in any position other than correctly stowed. The light will cancel once the ramp is finished with and correctly stowed.
- 7 Sensitive edge active** Shows the sensitive edge is working on entrance doors.
- 8 Exterior light fault**
- 9 Not used**
- 10 Ramp fault**
- 11 Not used**
- 12 Not used**
- 13 Flank switch** Press to change the view on the driver's monitor to the flank camera for manoeuvring.
- 14 Not used**
- 15 Suspension** Press up for full ferry lift, select centre position for normal ride height. Selecting the down position has no effect (full kneel is not fitted to this bus). Ensure that the switch is in the centre position when used in service.
- 16 Power switch** Turn on before operating the bus.
- 17 PA system**
- 18 Gear selection - D - Drive, N - Neutral, R - Reverse.** Push button selection. To select a gear, the handbrake and footbrake must be applied. When selecting D to R or R to D you must select N prior to selecting the Drive or Reverse gears.
- 19 Reversing horn cut off switch** Will silence the reversing horn for a single reversing manoeuvre (ie: at night). However, as soon as the bus is moved out of reverse gear, the mute function will deactivate. A warning will sound the next time reverse gear is selected.
- 20 Cab light switch** When in the on position, the cab lighting will be illuminated. When in the off position, the cab lighting, first saloon light and entrance light will illuminate when the entrance doors open and the sidelights are on.
- 21 Indirect light switch** Turns on / off green saloon lighting.
- 22 Nearside saloon light switch** Turns on / off near side direct white saloon lighting.
- 23 Offside saloon light switch** Turns on /off offside saloon direct white lighting.
- 24 Side kneel** Activates the side kneeling facility, only lowering the airbags on one side only. The bus will kneel only when the handbrake is applied. The kneeling function is available with the front entrance doors open.
- 25 Entrance door controls**

# Driver controls

## Dash controls display

The dash layout is largely familiar to other Volvo buses in our fleet. Please note that on the left gauge (1) there is a +/- to show when the battery is being drained (-) and when the battery is in a regenerative state (+).



- |                        |                         |                                |
|------------------------|-------------------------|--------------------------------|
| 1 Power Gauge          | 4 Parking Brake Applied | 7 Door/Ramp Halt Brake Warning |
| 2 Charge Level         | 5 Information Screen    | 8 Air Gauge                    |
| 3 Ready To Drive Light | 6 Speed                 |                                |

**If the battery state of charge shows 20% or under, you MUST contact Control.**

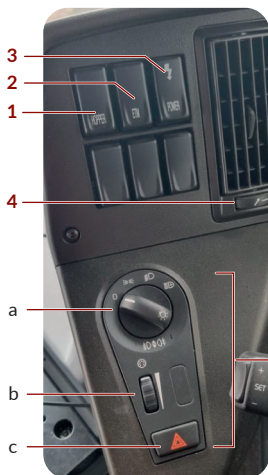
# Driver controls

## Side binnacle controls



- 1 **Handbrake** Handbrake is engaged in the on position and released when moved to the off position.
- 2 **Broms brake** The Broms Brake activates when the air pressure in the brake circuit is too low and you try to release the parking brake, for example if the bus has been parked for longer periods. To release the Broms brake:
  - a. Ensure the handbrake is applied.
  - b. Power up the vehicle.
  - c. Wait until sufficient brake pressure has built up (5.6 Bar) and the stop lamp in the instrument panel has gone out.
  - d. Push down on the Broms brake to deactivate and release the handbrake as normal to move the vehicle.
- 3 **Emergency cut off switch** Only to be used in an extreme emergency to shut all systems down. **Do not use as a method of recycling the bus if instructed to do so by Control.**
- 4 **Air release valve**
- 5 **Driver assault alarm** Strike with knee to activate, after 10 seconds, twist to deactivate.
- 6 **Lothian radio / comms switches**
- 7 **Emergency call switch to Control**

## Dash controls - left hand side



- 1 **Cash hopper switch**
- 2 **ETM switch**
- 3 **Power switch**
- 4 **Drivers heater vent**
- 5 **Lighting controls**
  - a. Side & headlight switch
  - b. Instrument lighting
  - c. Hazard lights

- 6 **Ignition switch** Located under the steering column.

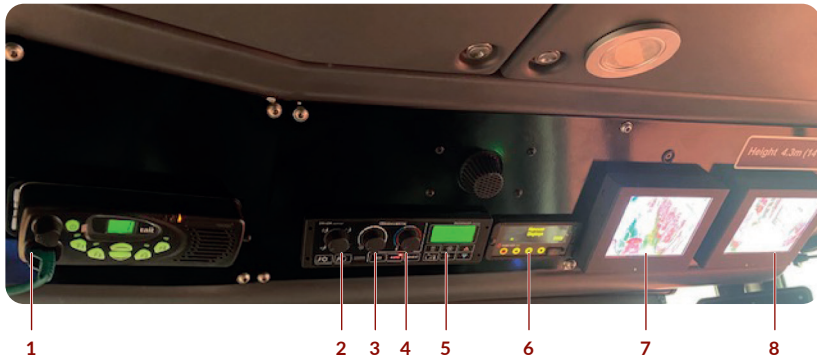


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# Driver controls

## Overhead control console

Located in the upper driver console, the heater controls are divided for passenger saloon and drivers cab area.



- 1 Driver radio unit
- 2 Airflow control
- 3 Airflow speed control
- 4 Airflow temperature control
- 5 Passenger saloon area
- 6 Destination control – Hanover screens used in all other buses in the fleet.
- 7 Internal and flank CCTV
- 8 Internal CCTV monitor

# Instruments and controls

## Dashboard information



Main beam activated



Battery charging fault



Fault in ABS system



Rear fog light activated



Window/mirror heater activated



ESP (Electronic Stability Program) enabled



Stop message in the display



Differential lock is engaged



Fault in braking system



Warning message in the display



Bogie lifted



Air pressure for primary braking system is lower than 6 bar



Next stop



Door brake activated



Air pressure for secondary braking system is lower than 6 bar



Seat belt reminder



Kneeling activated (for easier access)



Limp home



Parking brake applied



Check the tachograph


















Electric driveline ready



If stop lamp illuminates, then the vehicle must be brought to a safe stop, handbrake applied and powered down. Please contact Control on the normal call button. If the stop lamp comes on and the vehicle is in Ready to Drive mode an acoustic alarm will also sound.

# Instruments and controls

## Driver information display





 Message active	 Hydraulic fluid for cooling fan, low level	 Gearbox, low oil pressure
 Fire alarm	 Anti-lock brake system (ABS) activated,	 Transmission fluid, low level
 Alarm clock activated	 Traction control system (TCS) temporarily deactivated	 Clutch, high temperature
 Door brake activated	 Accelerator pedal disconnected	 Brake system, failure
 Steering fluid, low level	 Gear selector, not in neutral,	 Brake linings, wear warning
 Steering servo, failure	 Gear selector, reverse gear selected	 Brakes, high temperature
 Steering servo bogie, low pressure	 Gearbox, low air pressure	 Brakes, no data from first brake circuit
 Brakes, no data from second brake circuit	 Compressor, failure	 Wet tank, low pressure
 Brakes, no data from third brake circuit	 Compressor/air drier, failure	 Electronic Stability Program (ESP) activated
 Brakes, no data from fourth brake circuit	 Kneeling	 ESP, failure
 Brakes, no data from F brake circuit	 Pinch guard active	 ESP, requires calibrating



Disconnected accelerator pedal: If the driver depresses the brake pedal (or applies the parking brake) and the accelerator pedal at the same time, the accelerator pedal will not function.

# Instruments and controls

## Driver information display (continued)

 Brakes, no data from R brake circuit	 Bus fully lowered	 Hill start aid activated
 Brakes, no data from parking brake	 Air suspension system, failure	 Door, open
 Brakes, no data from auxiliary brake	 Air suspension system, low pressure	 Door, failure
 Engine cover, open	<b>AC</b> Climate system activated	 Stop at next bus stop
 Luggage or wheel chair hatch, open	 Climate system, failure	 Emergency hammer removed
 Instrument, overheating	 Ice warning	 Boarding or alighting with pram
 One or more lights, failure	 Washer fluid, low level	 Ready to be charged
 Headlamp, failure	 Battery, low voltage	 Charging, failure
 Brake light, failure	 Battery, high voltage	 External air hose or charger connected
 Direction indicator, failure	 Battery, too high voltage	 Incorrect wheel alignment
 Coolant, high temperature	 Fire suppression system, low pressure	 Speeding beyond permitted limits set for bus
 Coolant, low level		

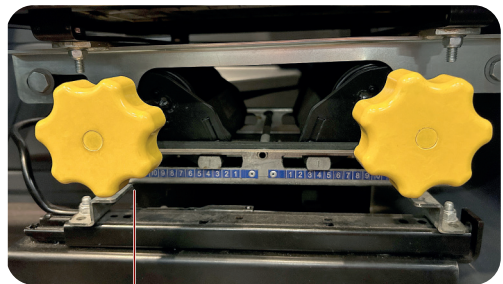
# Cab environment and driver's seat

The cab area has been ergonomically re-designed to be more spacious and driver focused with some additional features for your convenience and comfort.

## Your seat

A light breathable fixed fabric seat has been fitted to this bus – comfort and ease of use being the focus.

To adjust the seat – simply twist the yellow handles until you are in your chosen position.



### Know your numbers

Each level of height has a number for fast and easy adjustment when leaving the garage or changing over.

To adjust the back of the seat, again it's a simple knob to the right and left of the lower seat back. A manual runner is fitted for sliding forward and back easily.



**Health reminder** – An upright sitting position is proven to be better for your back and gives you improved all round vision.

# Camera mirrors/monitors

Camera technology has replaced the exterior mirrors. The benefits include improved vision at night and in wet conditions.



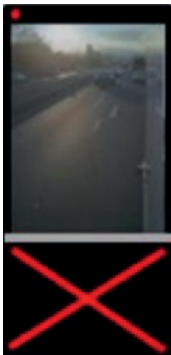
The slider on the underside of the monitor/mirror can adjust the brightness.



Enhanced night vision technology.



The vehicles are fitted with white marker lights just in front of the rear wheels. These aid visually where the rear axle is in relation to the camera view.



If the monitors encounter a fault, a simple reset should fix the issue. To do this, power down the vehicle and shut the master/power switch (located on the dash), off for 10 seconds then power the vehicle up as per the correct start up procedure.



If this does not rectify the issue, then you should report this through the **defect reporting procedure**.

# Doors operation



To operate/open the doors from the outside there is a button located on the nearside headlight unit.



Internal door close button is located to the side of the entrance doors. Lift flap and press, this will give a few seconds delay then close the doors.

## Pressure sensitive door edges

The front door pressure sensitive edges **must** be operating correctly for the bus to enter service. To check these; doors should be open and closed. If for any reason the doors fail to close or automatically reopen when there is no apparent reason to trigger this, then this should be reported as a defect.



**Emergency operation** - Lift plastic cover and press red button to release air pressure and open the doors of the vehicle.

# Manual ramp operation

Normal manual ramp procedures apply. Ensure neutral gear and handbrakes are engaged before leaving the driver cab to operate the ramp.

## Deploying the ramp

In common with other manual ramps across the fleet, to deploy the ramp, lift the cover to the right of the ramp platform. Here you will see a stainless-steel arm with handle, lifting this will allow the ramp to deploy fully. To retract the ramp again, lift the stainless-steel arm and this will clip under the cover.



Stainless-steel arm with handle

# Wheelchair and buggy spaces

There are two wheelchair/buggy spaces on this bus and as always priority should be given to wheelchair users. If a buggy or customers are occupying these spaces, they must be asked to move from this area to allow a wheelchair user to travel. If they refuse, contact Control for advice.



# Move off procedure

This vehicle is equipped with a **Hill Start Assist** function.

To operate the vehicle on a hill, before moving off, apply foot on footbrake briefly, then apply foot on accelerator and release handbrake as normal. The assist will remain active for 3 seconds, the brake assist will release allowing sufficient time to move off safely.



Hill Start Assist

When the **Hill Start Assist** is activated the function symbol will be displayed on the centre dashboard as shown.

**Hill Start Assist** should **NOT** be used as a parking brake and should only be used for hill start assistance.



# Emergency

## Fire on a vehicle



Whilst vehicle fires are a very rare occurrence, this guidance outlines what to do when on service and you suspect you have a fire on board or have excess smoke, please conduct the following:

You must: **STOP** the vehicle as quickly and safely as possible.

Please try to avoid stopping in tunnels, at busy junctions, outside schools or near petrol stations etc.

**(If the fire is getting out of control, you may need to stop immediately).**

Once stopped, you **MUST**:

- Apply handbrake,
- Select neutral gear,
- Open entrance and exit (If applicable) doors,
- Switch off power, switch on hazard lights and isolate power using emergency cut off switch located in the cab.



Emergency cut off switch

Please inform all passengers as loud as you can to evacuate the bus quickly and safely, if regular doors are blocked, direct passengers to emergency exits or use hammer to break windows if required.

Assist with evacuation of passengers, request assistance with any disabled passengers as lifts or ramps may not be operable i.e. "lift and carry"

Ensure all passengers have left the vehicle without endangering yourself and take the time board with you.

You and your passengers **MUST** locate to the safest area at least 100m upwind and away from any danger i.e. roads etc.

Call the emergency services on 999, inform them of location and vehicle type (bus/van), also inform them of fuel type (Diesel/Electric), then contact control on this number:-  
**0131 557 8766**

The fire extinguisher's primary purpose is to assist you and your passengers to safely evacuate the vehicle, whilst a minor fire may be controllable and prevent further spreading if onboard fire extinguisher is deployed, your safety and that of your passengers is priority, never risk yours or others safety.

Please note that these vehicles are fitted with a fire suppression system that will activate if a thermal incident is identified.

### You **MUST NOT**:

- Open the rear compartment to investigate a fire.
- Return to the bus and inform passengers likewise unless instructed by the emergency services.

**Please at all times keep yourself and others safe!**







