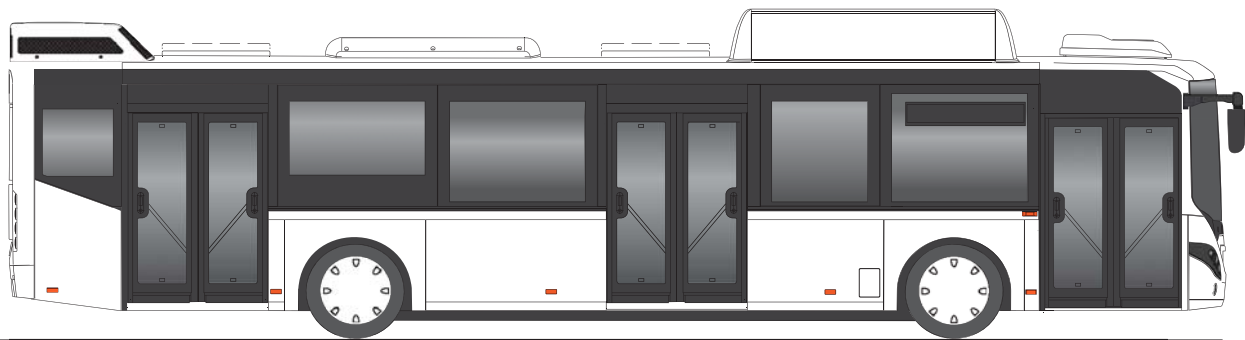
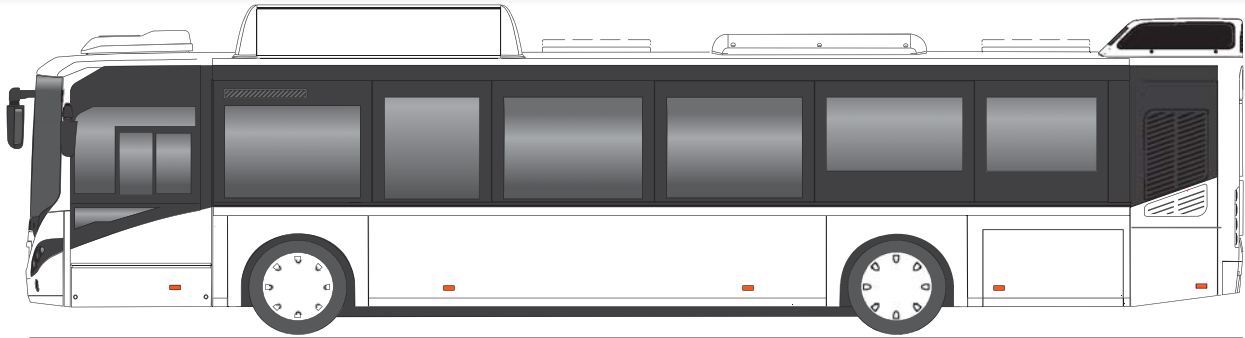


# VOLVO 7900 CNG

LHD, RFS, 4x2, Euro 5, EEV



## Dimensions & Weights

Overall length ..... 12084mm +25/-30mm  
 Height - radiator cover level ..... 3230mm  
 Overall height with CNG tanks .....  
 ..... 3356mm  
 Overall width ..... 2550mm  
 Overall width with blinkers ..... 2629mm  
 Wheelbase ..... 5945mm  
 Front overhang ..... 2704 +10/-15mm  
 Rear overhang ..... 3435mm +/-15mm  
 Track width with tyres ..... 275/70R22.5  
 and rims ..... 7.50-22.5"  
 Track, front/rear ..... 2088 mm/1887 mm  
 Entrance height at doors\* ..... 340mm  
 \*- non loaded bus in accord. with Direc-  
 tive 2001/85/EC.  
 Turning circle (tyres 275/70R22,5; outer  
 front corner/front heel).....10836/8859mm  
 Lock angle inner wheel.....53° +/- 1°  
 Approach/departure angle.....6.1°/6°  
 Kneeling travel distance.....70mm

## Weights

Max front axle load ..... 7100 kg  
 Max rear axle load ..... 12000 kg  
 GVW ..... 19000 kg

## Engine

The G9B is an in-line six-cylinder gas engine with turbocharger and intercooler. The G9B is a vertical 9.4-litre in-line six-cylinder gas engine producing 300 hp, equipped with a turbocharger and intercooler. On-board diagnostic, Volvo EMS2 engine control system, Engine software protection and on-board diagnostic to detect, warn and to take action for malfunctions leading to increased emission. Engine fulfills Euro 5 and EEV emission requirements.

### G9B300

Bore ..... 120 mm  
 Stroke ..... 138 mm  
 Displacement ..... 9.36 dm<sup>3</sup> (l)  
 Compression ratio ..... 10.25:1  
 Idling speed ..... 600 rpm  
 Max power at 1900 rpm .....  
 ..... 223 kW/300 hp  
 Max torque at 1400 rpm ..... 1400 Nm  
 Fuel consumption .....  
 ..... ca 45 to 55 m<sup>3</sup> / 100 km  
 Engine encapsulation ..... 77 or 80 dB(A)  
 Fuel tanks  
 Single gas tank capacity ..... 214 litres  
 Gas tanks ..... 5 or 6 pcs of 1070 l or  
 1284 l capacity.  
 Max pressure filling ..... below 26 MPa

or the temper. compensated pressure ....  
 giving a settled pressure: .....  
 ..... 20MPa at 15°C  
 Pressure reduction by pressure regulator  
 10 bar  
 Available: 1 or 2 CNG recepticals (also fast  
 drain type for fast gas drain) of German or  
 ISO version.

## Exhaust and Cooling System

Fluid cooled, pressurized system. Engine driven gear pump circulates the coolant. The radiator module and fan system is mounted in the rear roof part. Stainless steel exhaust system, with exhaust outlet located in the upper left part of the rear wall. The radiator protrudes above the roof level and is angle inclined to improve air flow and cooling. Radiator fan is hydraulically driven. Lambda sensor minimises environmentally dangerous substances - detects oxygen amount indicating if the combustion is complete; mounted in the exhaust pipe immediately after the turbocharger.

## Transmission

### 6AP1400B

AIS, Automatic Idle Shift, neutral when bus stops. 6-speed fully automatic gearbox with integrated retarder and electronic control system.

### Voith D864.5

ANS - auto neutral at stop. 4-speed fully automatic gearbox with integral retarder and electronic control system. The torque converter also functions as a retarder.

	ZF 6AP 1400B	Voith D864.5
Torque converter .....	2.16:1	5.05:1
1st gear .....	3.36:1	1.36:1
2nd gear .....	1.91:1	1.00:1
3rd gear .....	1.42:1	0.73:1
4th gear .....	1.00:1	.....
5th gear .....	0.72:1	.....
6th gear .....	0.62:1	.....
Reverse .....	4.24:1	4.30:1

Available 3 or 6-buttons gear selector and kick down function.

## Rear Axle and Tyres

### Rear axle

Portal (drop centre), single reduction axle with low offset 87° input from the engine via the propeller shaft. Three axle ratios available: 5.27:1, 5.77:1, 6.21:1.

### Tyres & Rims

10-stud steel disc wheels. Zinc wheelnut protectors. Dual driving axle wheels. Extra spare wheel, tool kit, warning triangle.  
Rims.....Tyres  
7.5"x22.5".....275/70R22.5"

## Suspension and Steering

Electronically Controlled Suspension, rigid front axle. Stabilizer front and rear. Anti roll bar at rear axle. Double-acting, hydraulic telescopic shock absorbers, two front, four rear. Whole side kneeling (70 mm). Kneeling interrupt configuration: stop or return.

Numbers.....	Front.....	Rear
Air bellows .....	2.....	4
Levelling sensors .....	1.....	2

### Steering gear

Power steering of ball and nut type with built-in servo unit. Two inter-linked intermediate steering arms and individual link-rods to each side's steering arm. Pitman arm connected to the relay arm via a link-rod.  
Steering wheel diameter ..450 or 500 mm  
Optional.....Steering wheel lock

## Air and brake System

Separate circuits for front wheels, drive axle wheels, tag/pusher wheels. Park brake circuit acting on drive axle wheels. Volvo disc brakes combined with electronic braking system EBS 5, which controls ABS/ASR functions. Available features: brake blending, dual retarder control, drag torque control, hill start

aid, brake temperature warning, poor brake performance warning, door brake, brake assistant, automatic diff lock, lining wear sensing and analysis, automatic calibration after brake pad change.

System operating pressure .....	10.8bar
Compressor capacity at 10 bar and engine speed 33 r/s (2000 r/m) .....	16,5 dm <sup>3</sup> /s (1000 l/m)
Compressor ratio .....	1.35:1

### Air tanks standard

- Primary.....2x30 dm<sup>3</sup> (l)  
- Front circuit.....30 dm<sup>3</sup> (l)  
- Rear circuit.....30 dm<sup>3</sup> (l)  
- Park circuit.....30 dm<sup>3</sup> (l)  
Compressed air system can easily be filled from external circuit.

### Handbrake

Air operated spring brake acting directly on the rear wheels. Application is infinitely variable by means of a control on the fascia.

## Vehicle Structure

The body is based on the patented Volvo Bus concept, where an aluminium alloy providing superior corrosion resistance is used. The structure is made of extruded aluminium profile. Chassis floor structure built-up by steel RHS-profiles, welded together with open c-profile cross-members. The combined aluminium and steel frame combines good stability with low weight and gives long service life and increased loading capabilities. Rigidity provides good stability and driving.

## Glazing

Glued one-piece panoramic wind screen, clear or green tinted, side windows with single or double glazing tinted, rear window with single glazing tinted only. All glazing, bronze tinted apart from drivers window which is clear only. Driver's side double glazed window manually operated; without electric heating or single glazing with heating. Available 4 or all hopper windows (in total 8 for 2+2+2 or 9 for 2+2+0 door layout).

## Exterior

Front and rear walls made from fibre glass and ABS elements. External side panelling are made of a single sheet of aluminium under the window line combined with glass fibre plates and is finished with a aluminium lower skirt for the sides. Hatches are made of the same glass fibre panelling. Wheel arches of DCPD. Roof made of 1 mm thick single-piece aluminium sheet, glued to the roof frame. Mekra or Wilke external mirrors. Electrically or manually adjusted, heated or not. 3-piece bumpers. Top hinged service compartment hatches with snap or cylinder locks. Mounted outside wide angle mirror on the RHS, flag holder

Available: school bus equipment, warning signalization when front hatch open, head lamp cleaner, exit light above door2, high rear direction indicator. 1 or 2 roof hatches, electrically or manually operated; with emergency exit mechanisms.

## Doors and Door System

ISAF double doors inward gliding on all positions pneumatically powered with single bronze tinted glazing. Door operation available in a range of combinations. Control via button/joystick or both with various safety function combinations for door operation available. Can be fitted with 8 mm square male or key cylinder locks for door1 locked from inside or outside.

Door configurations .....2+2+2; 2+2+0  
Door buttons for driver right hand operated. External emergency valves at all doors. Mechanical or electrical access ramp at second door.

## Ventilation, Heating and AC System

Water heating system with 2-pipe convectors and blower heating for driver's area, door1, pram area and door2 if fitted. Available ventilation units in roof channels with or without heating and roof air conditioning unit with heating + cooling. Driver's cabin has convector or blower heating and can

have own AC system with a timer. Door1 entrance can be heated by electrical mats in floor, preventing icing. A Multiplex 3 or 4-knob control panel enables manual or automatic setting of the climate parameters in the bus. External temp. meter installed and optional interior temp. meter. Convector heating:

Output.....	551W/m
Weight.....	3.1kg/m
Blower heating for driver's area, door1, pram area and door2: data per blower	
Output .....	2.8 kW
Air flow .....	156 m <sup>3</sup> /h
Weight .....	2.7 kg
Total power output from convectors and blowers.....	2.1 to 3.4kW depending on spec.

Additional heater heats the passenger compartment, defrosts the windscreen and preheats the engine. Available 7-day timer for programming the heater.

Additional heater capacity.....30 kW  
Defroster:

Air flow, min/max .....	446 m <sup>3</sup> /h / 731 m <sup>3</sup> /h
Heat output, min/max .....	7 kW/15 kW
Air Conditioning system for cooling and heating the passengers compartment.	
AC type .....	Sutrak 136 type II or III
Cooling capacity type II .....	29,3 kW
Cooling capacity type III .....	33,7 kW
Heating capacity, type II/III.....	42/46 kW
Weight, type II / III .....	165 / 210 kg
Roof mounted driver's AC unit .....	3,5 kW

## Interior

Materials fulfil the European Directive 95/28, annex 4 and 5 concerning flammability. Step less, low floor throughout the interior, covered by antislip plastic Tarabus coverings. For the sidewall is used laminate and the floor is made of laminated plywood with noise damping properties in the engine area. Handrails in one standard colour: yellow RAL1021. Available light or heavy hammers with wire, which additionally can have signalization. On the front wheel box can be arranged a luggage rack. Partition walls are behind each door.

**Additional equipment:** passenger barrier, fire extinguisher 6 kg, first-aid box, wheelchair safety wall, waste boxes for passengers, additional interior mirror.

### Passenger and Courier Seat

Volvo seats. Modular, moulded construction. Cantilever mounted to the wall. Accessories: support handle, connections to support rail, bow-type handles, armrests, single and double seating places, seats for wheel arches and rear benches. Available foldable seats.

Space available to standing passengers: 7.7 m<sup>2</sup> for DL220, 8.8 m<sup>2</sup> for DL222.

### Drivers Seat and Station

Volvo dashboard available or instruments only supplied. Dashboard has two satellites on the right and the left side. Adjustable steering wheel, both height and tilt. Self canceling turn indicators.

**Dashboard, midmodule:** speedometer, rev counter, driver's display, fuel gauge, coolant temperature, brakes, turbo and oil pressure, indicator and warning lamps. Signalisation lamps.

**Dashboard, right module:** radio, 3 or 4-knob climate control unit.

**Dashboard, left module:** emergency switch, tachograph, switches.

**Right panel:** gearbox selector, doorbrake knob, switches and signalisation lamps.

**Left panel:** Light Control Panel, exterior light switches, switches and signalisation lamps.

**Roof panel:** Digital tachograph, radio

**Instrumentation, engine compartment.** Selector for front or rear operation, starting. These controls enable engine operation from the tail of the vehicle during service work,

**ISRI driver's seat,** with optional 2 or 3-point safety belt. Adjustment of: horizontal position, weight suppression, stroke, height and rake, seat cushion, backrest. The driver's seat can have left side armrest, electrically heated seat/backrest, has air suspension with a swivel base.

The driver's compartment can have a low or high door with fixed protection. Front 1-piece sunvisor can be manually or electrically operated. Side sun visor. Main cut-off switch: electricity, engine or engine and fuel cut-off. Located on the dashboard

left hand side.

Optional.....Alcolock  
Optional.....AIC  
Optional.....VDV Dashboard  
Optional.....Data logging  
Optional.....External temperature meter  
Option.....mainswitch can be located behind front hatch.

### Electrical System

2nd generation Bus Electrical Architecture BEA2 with electronic databus system Multiplex 2 - a digital system for data transmission, system controlling, monitoring and coordination of functions of bus assemblies, equipped in electronic control units, connected in a two link network for transmission of data, defect codes, work parameters. Multiplex 2 provides diagnostic information for the driver and workshop. For testing, calibrating and programming of the control units is used PC based software package VCADS Pro.

The system is equipped with main cut-off switch: electricity, engine or engine and fuel cut-off.

Battery capacity.....2x225Ah

Alternators nominal capacity .....2x80 A

.....2x110A, 3x110Optional.....FMS1 or 2 Gateway interface

Optional.....FMS preparation kit  
Optional.....Basic or extended electric interface

Optional.....2 types of reverse alarm

Optional.....Battery charger

Day running lights: available in 4 different set ups, End outline marker, side marker and position lamps, low/high beam halogen or xenon. Tail lamp of LED type (apart from direction indicators).

### Audio System

Stereo radio with CD player or preparation for radio. Public address system foot controlled. Installed speakers in roof panels, 1 external loudspeaker (option), loudspeaker for driver, driver microphone, Volvo brand equipment. City amplifier.

Optional.....Radio switches in steering wheel

### Information system

ITS4mobility is an intelligent Transport System designed for Bus operations in public transport. It will assist the operator and driver with real time information about the traffic and provide passenger inside the bus with information regarding next stop, following stop, route number, end destination and panic button for driver in case of emergency which will inform traffic control centre with position. A number of combinations of hardware are available.

**Modular, electronic destination signs,** with maintenance free illumination in the front, rear and side walls. LED destination signs as standard.

Standard control via AIC and ITS4mobility or Mobitec ICU400.

Type/nominal voltage .....LED/24 V DC

Data communication .....RS 485, IBIS

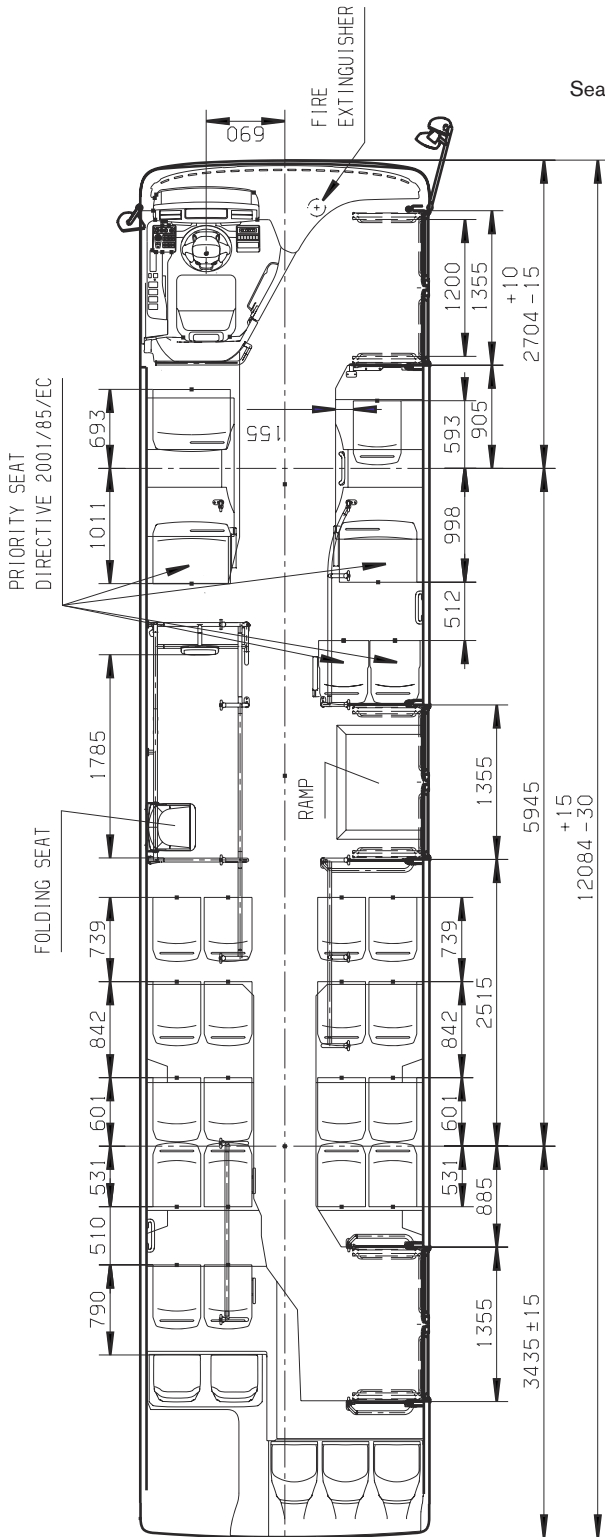
Mounted pram/wheelchair buttons inside/outside for signalization to driver. Stop request buttons on handrails. 8 mm square female or male key for the destination boxes. One interior bus stop sign.

### Painting and Labels

Steel elements: primer and topcoat finishing. Under body coating process: sealing with an anti-corrosion/protection/silencing compound. Spraying a conservation agent on the chassis profiles. Wheel arches: sealed with an anti-corrosion compound and an anti-gravel protection. Body panelling: primed, then painted with filler and topcoat.

Outside painting std.....white, RAL9010

# VOLVO BUSES. DRIVING QUALITY OF LIFE



Seat layout with STER 6MV seats. Door layout DL222.  
Seating places 29+1+1 foldable seats.

# VOLVO

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