



## SB 220 GS

### Sales specification

<b>Engine</b>	<b>8,65 l Advanced Turbo intercooling 160 kW / 200 kW EURO 2</b>
<b>Suspension</b>	<b>Full air suspension</b>

### Weights in kilograms

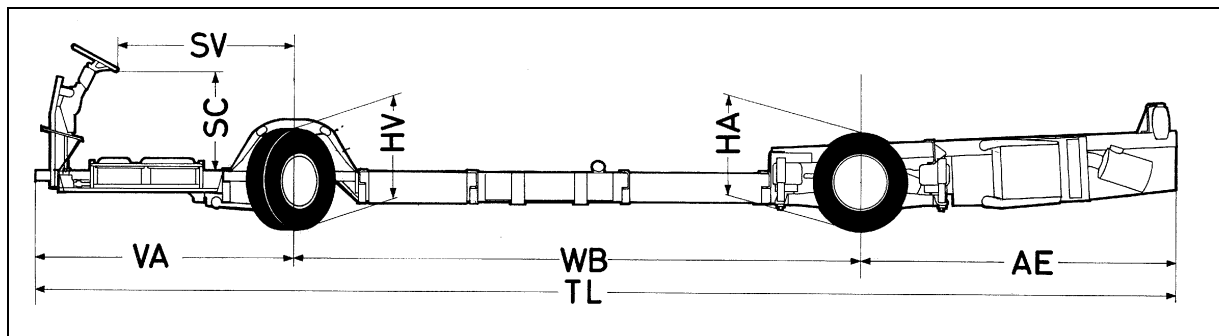
Tyres	Load index	Remark	Gross Vehicle Weight (GVW) <sup>4</sup>			Chassis Weight		
			front	rear	total	front	rear	total
275/70 R 22,5	148/145J		6.300	11.600	17.900	1.475	4.175	5.650
275/70 R 22,5	148/145J	Max techn. speed 80 km/h	6.500	11.600	18.100			
305/70 R 22,5		6.500	11.600	18.100				

### Weights calculated with:

Engine GS 160, automatic gearbox, 275/70 R 22,5 tyres, 2 x 172 litres empty fuel tanks, without spare wheel, without winch. Without transport equipment. Weight tolerance  $\pm 3\%$ . These weights vary in production and are intended as a guide only.

### Dimensions in metres:

WB	TL	VA	SV <sup>1</sup>	SC	HV	HA	TB <sup>2,3</sup>	AE
5.50	11.20 / 11.33	2.50 / 2.63	1.80-1.91	0.98-1.15	0.53	0.84	2.41	3.20
5.75	11.45 / 11.58	2.50 / 2.63	1.80-1.91	0.98-1.15	0.53	0.84	2.41	3.20



### VEHICLE SPEED

Vehicle speed in km/h at maximum power (engine 2300 rpm) and 275/70 R22,5 tyres. The maximum theoretical vehicle speed in km/h is shown in brackets for an unloaded vehicle (engine 2535 rpm), on the flat road, normal wether conditions and 275/70 R 22,5 tyres.

Gearbox / Axle ratios	3.31	3.73	4.10	4.56	5.13
4HP500 (3.43 - 1.00:1)	124 (136)	110 (121)	100 (110)	90 (99)	80 (88)
5HP500 (3.43 - 0.83:1)	---	132 (146)	120 (133)	108 (119)	96 (106)
D851.3 (5.20 - 1.00:1)	124 (136)	110 (121)	100 (110)	90 (99)	80 (88)
D854.3 (5.20 - 0.73:1)	---	---	---	123 (136)	109 (121)

Note: Combinations with theoretical speed  $\geq 100$ km/h (62,5mph) are only in compliance with EC 92/24 if a speedlimiter is fitted.

<sup>1</sup> Adjustable steering column  
<sup>3</sup> with 275/70 R22,5 tyres

<sup>2</sup> TB: overall width, measured over driven axle  
<sup>4</sup> Limitations due to national legislation not included

## Engine

6 cylinder diesel engine with direct injection and Advanced Turbo intercooling, horizontally mounted behind rear axle  
Emission levels EURO 2 (NO<sub>x</sub> < 7g/kWh)  
Bore x stroke 118 x 132 mm  
Swept volume 8,66 dm<sup>3</sup>  
Compression ratio 16,1:1  
Governor two-speed  
Lubrication system pressure lubrication with gear type pump, full-flow oil filter, with oil cooler  
Cooling system water cooling with centrifugal pump, gear driven, 1 thermostat  
Air intake system dry air cleaner, with replaceable element  
Optional air intake: - body intake with water separator

### Type

Max.output<sup>1</sup> 160 kW / 218 hp at 2300 rpm  
Max.torque<sup>1</sup> 850 Nm at 1100 rpm

Optional:

**Type** - **GS 200**  
Max.output<sup>1</sup> 200 kW / 272 hp at 2300 rpm  
Max.torque<sup>1</sup> 1010 Nm at 1500 rpm

## Gearbox

Electronically controlled fully automatic gearbox with foot controlled integrated retarder, automatic neutral shift at standstill and kick-down.

Standard ZF 4HP500 (3.43 - 1.00:1)  
Optional: - ZF 5HP500 (3.43 - 0.83:1)  
- Voith D851.3 (5.20 - 1.00:1)  
- Voith D854.3 (5.20 - 0.73:1)

## Construction

Welded steering and drive units for fully integral body construction up to 12 metres in length. Pedal floor positioned 33 cm above underframe. Including fuel tanks 2 x 172 litres.

Optional:

- pedal floor 48 cm above underframe
- pedal floor 21 cm above underframe
- fuel tanks 2 x 130 litres
- fuel tanks 2 x 160 litres

## Cooling unit

Radiator unit, positioned at left side behind rear axle, with hydraulic fan drive integrated in engine compartment. Fan thermostatically controlled. Including coolant level sensor.

## Steering unit

Front axle type 130 N  
Stub axles with needle bearings, 'long life' greased.

## Driven Unit

Type 1339  
Fully floating single-reduction rear axle. Crownwheel and pinion with hypoid bevel gearing.  
Ratios see other side Performance.

## Suspension

Full air suspension, 2 air bags front and 4 air bags at rear. Adjustable double-acting telescopic shock absorbers and stabilisers on both axles.

Optional:

- Kneeling facility (10cm) on steering axle.
- Electronically controlled air suspension with high speed kneeling/ferry-lift facility

## Wheels en tyres

7.50 x 22.5 wheels with 275/70 R 22.5 tyres. Twin wheels on driven axle.  
Optional: - various dimensions

## Steering gear

Available in left-hand (LHD) or right-hand (RHD) drive.  
Hydraulic power steering with adjustable steering column, rake: 20° - 31°, height: 80 mm. Soft grip steering wheel f 500 mm.  
Inner wheel turning angle: 56°  
Turning circle radius outer front wheel:  
WB 5.50 m: 8.05 m  
WB 5.75 m: 8.25 m  
Optional:  
- Pneumatically adjustable steering column  
- steering column with combined steering lock and starter switch

## Brake system

Air mechanical - dual circuit - air brakes with air dryer and automatic slack adjusters. Drum brakes with asbestos free linings on both axles.  
Brake dimensions:  
- steering axle 420 x 150 mm  
- driven axle 420 x 240 mm  
Compressor 2 cylinder 440cc water cooled, 680l/min at 2300 engine rpm and 10 bar  
Air reservoir 3 x 36 + 2 x 20 litres  
Handbrake by means of spring brake actuators on driven axle  
Optional:  
- halt brake on driven axle  
- ABS (Anti-lock Braking System)  
- ASR (Anti Wheelspin System in combination with ABS and E-gas)

## Electrical equipment

Voltage 24 V  
Alternator 140 A  
Batteries 2 x 200 Ah on pull out tray  
Starter 5.2 kW  
Service controls in engine compartment  
Central E-panel  
Operating switch front/rear; switches for: glowing, engine start and stop.  
Central electronic panel comprising: printed circuit boards with relays and electronic control units.  
Optional:  
- 2 x 180 Ah traction batteries  
- central safety switch

## Throttle control:

Throttle cable linkage.  
Optional/additional:  
- speedlimiter  
- mechanical throttle lock in combination with open door  
- Electronic throttle control (E-gas) with integrated accelerator-blockage and speedlimiter

## Instruments and controls:

The instrument panel is available in 2 versions: Public Transport (standard) and Coach version. Both suitable for integration in the body facia.

### Instruments:

Tachograph (2 drivers without rev. registration, kph + mph), electronic rev.counter, gauges for: air pressure (with audible signal), fuel level, voltage, oil pressure (with audible signal), coolant temperature engine (with audible signal), retarder oil temperature.

### Switches:

Main switch, contact/stop, start, instrument panel lighting (2 intensities), retarder on/off, cold start, pre glowing, fog lights front and rear, headlamp switch, air suspension height adjustment switches, hazard warning lights. optionally: contact, starter and stop switch integrated with steering lock, reverse conformation switch.

### Multi-function switch:

Direction indicators, horn, headlamp main-beam / dipped-beam, headlamp flasher.

Windscreen wipers (2-speed), intermittent wipe / wipe-wash.

### Indication lights:

Battery voltage, main switch, headlights dipped beam, fog lights rear, direction indicators, headlights main beam, oil pressure, coolant temperature, air pressure, air cleaner, parking brake, engine compartment temperature, retarder oil temperature, gearbox control (Voith), retarder on/off, chassis level. Optional: central lubrication system, ABS, ECAS, E-gas, halt brake, diff. lock, engine control.

### Accessories:

Cigar lighter/inspection lamp socket.  
Optional:  
- instrument panel in Coach version  
- dashboard in transport version (without instruments/switches)

## Further Equipment:

Optional:  
- automatic central lubrication system, with grease 2 or grease 00.  
- automatic sump topping-up system

<sup>1</sup> ECE R24-03 (ISO 1585)

Vehicle versions are subject to country specifications.  
Subject to modification without prior notice.