

Mercedes-Benz



O 307

Standard regular-service country bus







The O 307 standard regular-service country bus has a total length of 11.7 m and a capacity of 1/99 persons.

The bus meets the highest demands made on it. The O 307 has the following advantages:

- Universal suitability for scheduled service in suburbs and neighbouring towns, as school-bus, commuter vehicle or excursion and short trip bus.
- Comfort and ease for passengers
- Reduced effort for driver and service personnel
- Economical operation due to further improved engine with output increased to 177 kW (240 h.p.), less fuel consumption and less pollutants.
- Modernised low-vibration engine mounting ensures a lower internal noise level.
- Outstanding driving characteristics due to excellent steering, brakes and air-suspension; high engine performance and well-coordinated transmission, engine and rear axle system.
- Economic design of effective space with a given area covered by vehicle, and with a high utilisation factor of 92%.
- Large seating capacity (14 rows and 53 seats in driving direction).
- Easily accessible for repairs; clear arrangement of compressed-air unit and electrical system, and clear wiring system.
- Smooth, easily cleaned surfaces outside and inside, particularly well-suited to automatic vehicle washing installations, plus good signwriting area.
- Considerably less effort needed to repair vehicles involved in accidents due to unitized body construction and the use of simplified construction elements (sheet steel and square tubing), and simplified spare parts storage through standardisation.
- Long-term corrosion protection.

The O 307 causes very little pollution; a special version 177 kW (200 h.p.) is also available on request which is even quieter and produces even fewer exhaust gases. The 177 kW (240 h.p.) version can also be delivered with a noise-insulating casing.

The Functional Driver's Seat

The driver's seat is his place of work. This is why we have included in its design every improvement which makes this type of work easier. Driving a bus is hard work, both mentally and physically. By conveniently arranging all the controls and gauges we have contributed to preventing the driver from being distracted. He can devote his full attention to the traffic situation. This, in turn, increases the general safety with regard to the passengers and other road users.



Driver's seat

Sprung and hydraulically damped, individually adjustable to weight of driver, adjustable for height and reach, inclination of backrest and seat cushion. Driver sits comfortably and anatomically correct – essential for fatigue-free driving.

Instruments

Well within driver's range of vision. Easily seen and therefore do not distract attention from road.

Controls

Easily reached and easy to handle.

Steering and brakes

The steering is power-assisted. Service brake, exhaust brake, bus stop brake and parking brake are operated by electro-pneumatic or pneumatic controls.

Footwell heater

Infinitely variable. Provides correct temperature also for the driver during the winter.

Windshield

Laminated safety glass, divided in centre and vertically inclined. Annoying glare and reflections are eliminated. Low edge of front wind-screen provides perfect vision for driver. Two individually driven windshield wipers, running in parallel, ensure good visibility in poor weather.

Two large rear view mirrors

Inside as well as two swivelling, heated rectangular mirrors outside which can be easily removed ensure that the driver has an excellent rear view. The rear view mirror on the left is clearly visible even in cold weather as the front part of the window on the driver's side can be heated.

Partition

Screens driver's seat from the passenger compartment. A curtain of opaque fabric serves as an antiglare screen for the driver.



Double-wing outward swinging doors Getting on and off Easily

For a bus service to be efficient passengers must be able to get on and off the bus easily and quickly. Two double-wing outward swinging doors – the centre door a wide one – are fitted as standard. The doors are opened and closed electro-pneumatically. Large glazed areas in doors ensure good visibility and excellent light on the three entrance steps. Steps are very low so that even elderly passengers and children can get on and off the bus easily and safely. A mechanism to prevent tripping is standard.

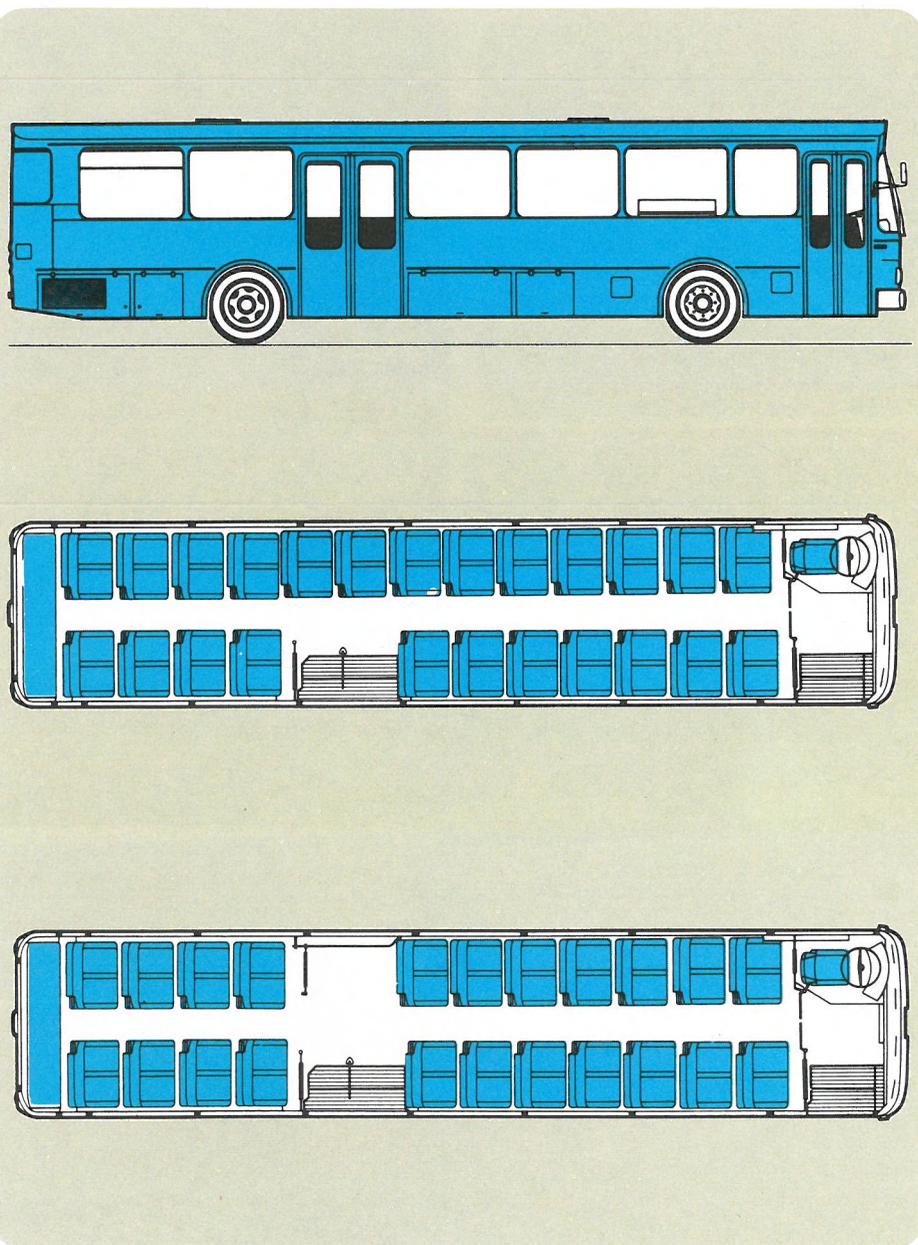


For Comfortable Seating

Seats have spring cores, seat cushions and backrests are covered with lasting simulated leather. Various kinds of fabric are also available. The side wall interior panelling can be selected to match.

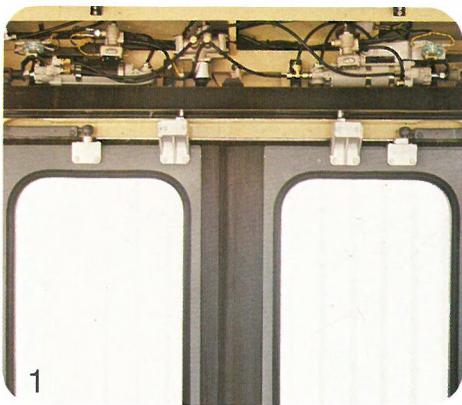
13 double seats on left, 11 on right, facing forwards. The rear bench seats five. This gives a total of 53 seats. A space for prams can also be provided.

Standard excursion seats of various fabric grades are optionally available for the O 307 country bus. The seats are carefully designed and arranged so as to retain the maximum number of 53. It is possible to instal a (single) seat next to the driver.



Easily Serviced

All important service points are easily accessible from outside through large service flaps. This makes servicing the O 307 a pleasure. The fact that the units can be surveyed at a glance is an important aid for the driver. The necessary maintenance and checks can be carried out correctly. An important prerequisite for keeping your bus like new.



1 The door opening mechanism is easily accessible for maintenance and repairs.

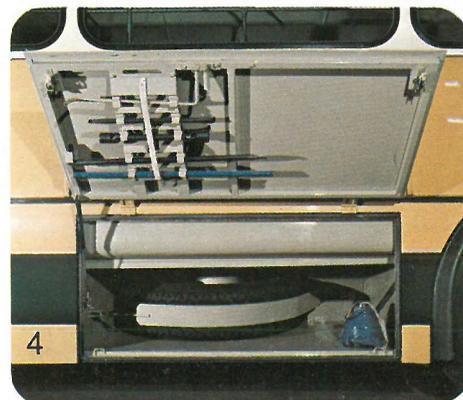


2 Centrally located electrical system. All connections designed so that any trouble can be easily corrected. Relays and circuit elements are neatly grouped. The cables are distinguishable by numbers. The electric system is cut off by disconnecting the positive wire.



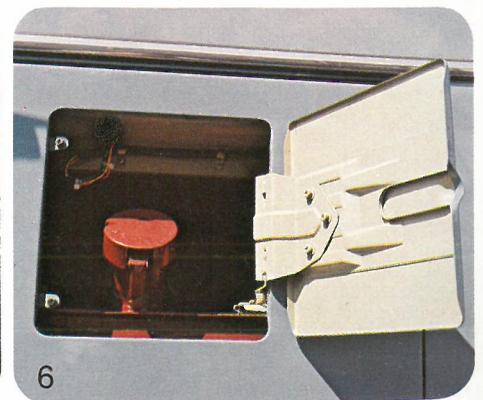
3 The battery set is mounted on a carriage and can easily be pulled out for checking.

The supplementary heater (standard) for the recirculating hot-water heater and the recirculating pump are easily accessible.



4 The spare wheel, jack (optional) as well as the tools fit into a dust and water-proof separate compartment on the left behind the front axle.

6 Tank filler neck with a cap that is quickly and easily removed and replaced.



Luggage Compartment

The luggage has a large, continuous level all for itself. The luggage compartment has a capacity of approx. 106 cu.ft. (3 m³) and can hold even skis or other bulky items. It is accessible from both sides. The O 307 is also available without luggage compartment.

The luggage compartment flaps are closed with safety locks. All locks on the O 307 can be closed with a master key. Gas springs hold the luggage compartment flaps open. When the flaps are closed, the springs brake their momentum and ensure a tight contact pressure.



Pleasant Temperature Conditions

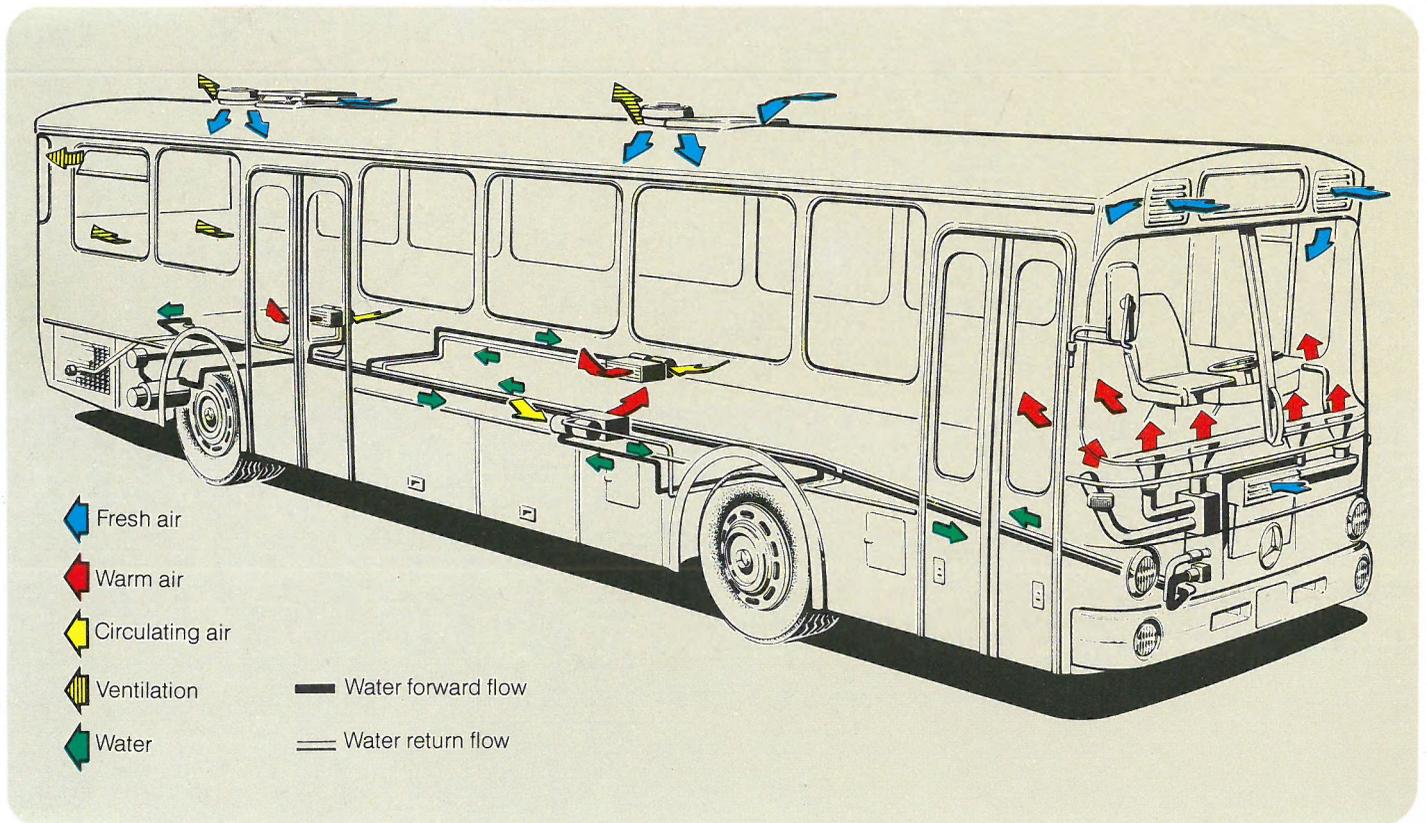
For heaters with heat exchanger and fan provide comfortable temperature during the winter. A Webasto heater with 83,700 kJ/h (20,000 kcal/h) output for the stationary vehicle is connected to the engine cooling cycle. It provides for economical transmission of the heat from the engine or the auxiliary heater, depending on heat requirement. The engine is maintained in a favourable temperature range.

Through cooling water pre-heating by the Webasto-heater, cold-starting is avoided and consequently wear is reduced.

The fresh air front end heater with a three-stage fan keeps the windscreen and the lateral windows at the front free of condensation – the driver can always enjoy an unobstructed view. In addition the heater warms the driver's place and the passenger compartment. Three circulating-air heaters in the passenger compartment heat the rear section of the vehicle.

Additionally available for ventilation:
 Ram air inlets at front with two adjustable eye-ball vents above the driver's seat, vents with check valves at rear

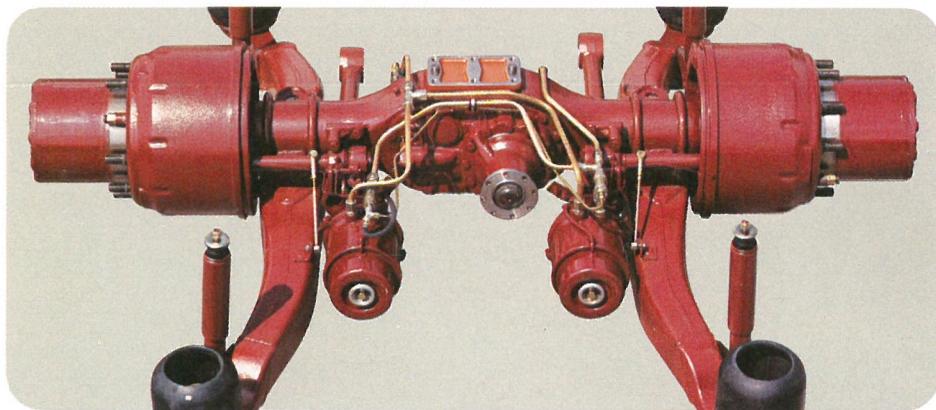
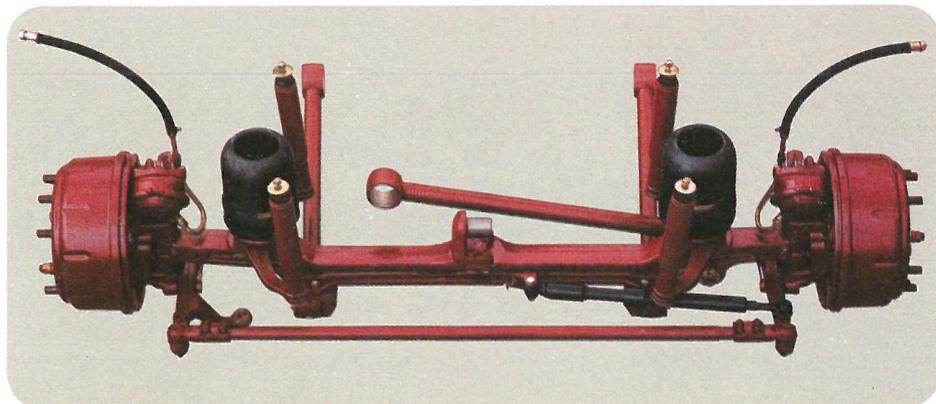
2 electrically driven fans in roof
 2 large, adjustable roof flaps
 One sliding window by driver's seat
 2 hinged ventilating windows at rear.



For your Passengers: Air Suspension

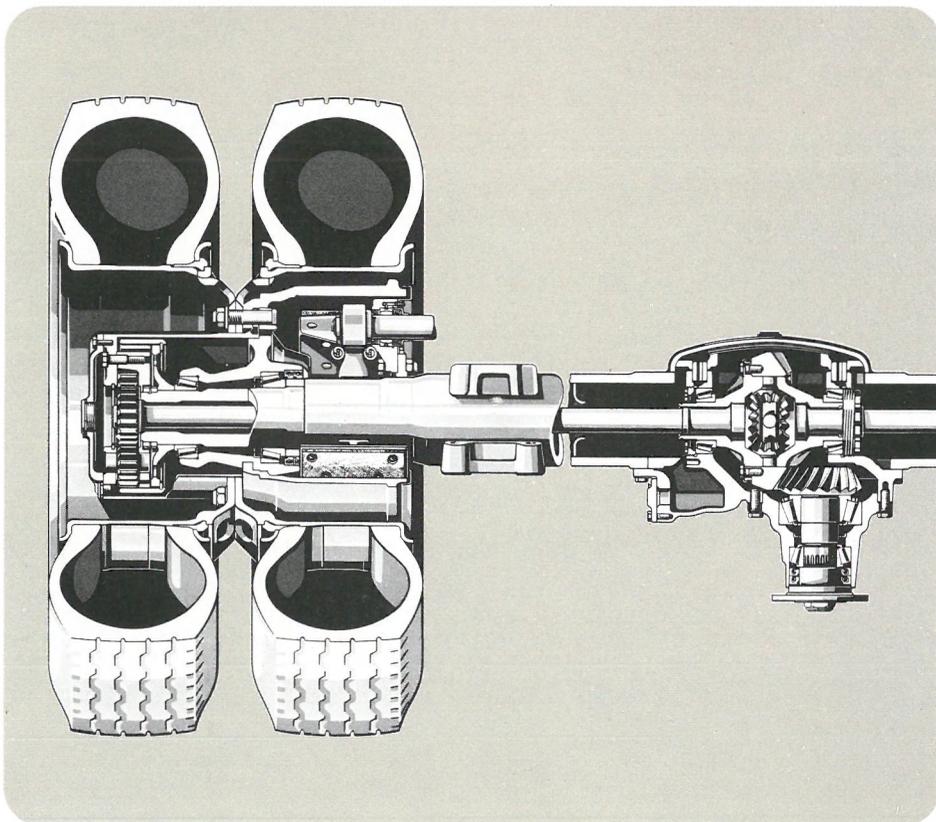
Of course, air suspension is nothing new. But Mercedes-Benz offers something special. Two air bellows and four shock absorbers on the front axle plus four air bellows and shock absorbers placed nearer to the wheels on the rear axle ensure road-holding and maximum ride comfort.

The air suspension ensures that the suspension characteristics are equally good under any load and that the distance between the vehicle floor and the ground remains constant. Air bellows and rubber bushings on the control arms are interchangeable. All the control arms are mounted on rubber bushings which reduce noise and are maintenance-free.



The hub reduction rear axle

This modern axle design enables the differential to be kept small. A short shaft transmits the driving force to the planetary gears in the wheel hubs, where the full torque becomes effective.









Interior

The interior equipment is functional and modern.

Smooth surfaces, a continuous vehicle floor, as well as the single-leg seat support facilitate cleaning of vehicle. Generous panoramic windows provide both the standing and the seated passengers with an all-round view. The windscreen is of laminated glass, all other windows are made of single-pane safety glass. The centre aisle provides plenty of room for standing passengers. Bars and handrails give a secure hold.

Seats

The O 307 has STÜLP Standard seats as basic equipment. The backrests of these double bench-type seats are shoulder high, with grab handles on the corner near the centre aisle. The upholstery is covered with artificial leather in one colour. Fabric covers are available as optional extras. AS standard excursion seats can also be supplied as optional extras. The double seats have single squabs and two high upholstered moulded plastic seatbacks. The upholstery is covered with Dralon velours or woolen plush (optional extra). An ashtray is integrated in the centre-aisle seat-back.

This version can be equipped with grab handles at the centre of the seatbacks or on the corner near the centre aisle. In addition, standard excursion seats can be supplied with low backrests (ASN), normally with grab handles on the corner of the backrest near the centre aisle.





Brakes for Maximum Safety

Three independent braking systems guarantee high driving safety:

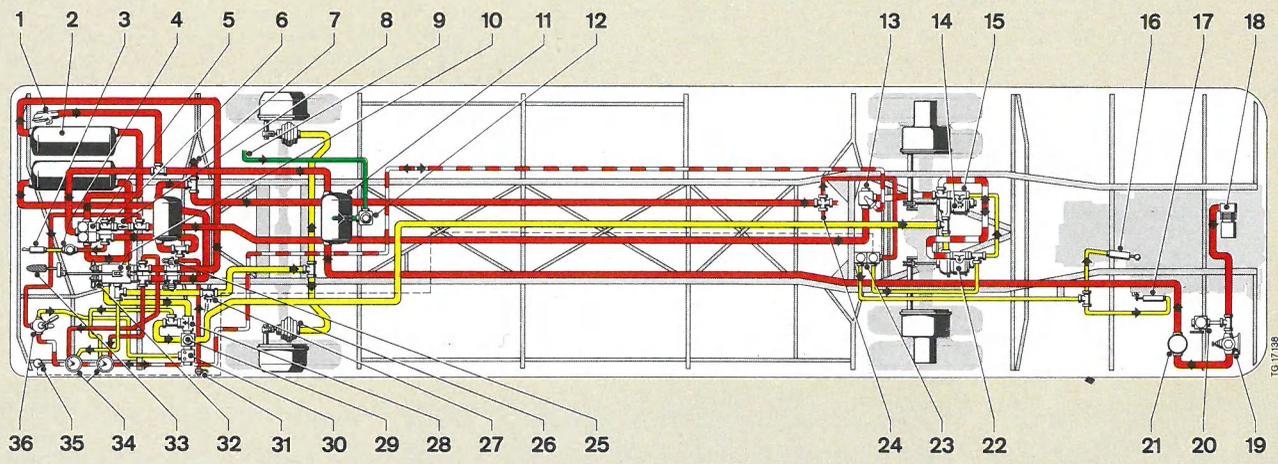
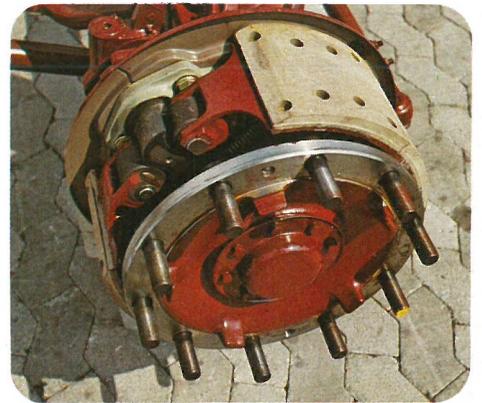
- 1) Service brake with bus stop brake
- 2) Parking brake
- 3) Exhaust brake

The service brake is a dual-circuit air brake with automatic adjustment of brake shoes.

A spring-loaded, no-linkage brake and a bus stop brake are installed and activated by a tumble switch on the instrument panel.

The cylinders of the spring-loaded brake are combined with the brake cylinders on the rear axle.

The exhaust brake (supplementary brake), worked by compressed air, can be optionally coupled with service brake or separately operated. A mechanically driven single-cylinder air compressor – connected to the engine oil and water circuit – supplies the compressed air to the brakes and other pneumatic units.



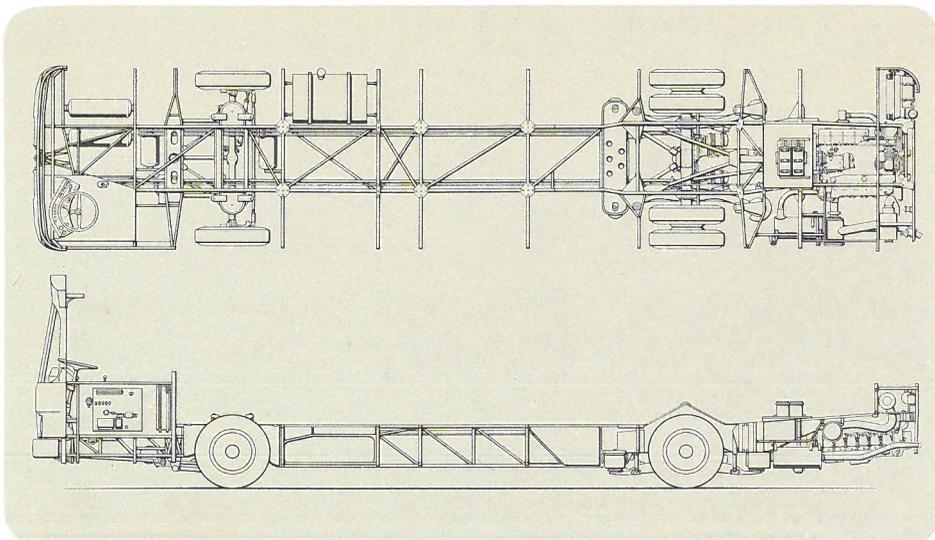
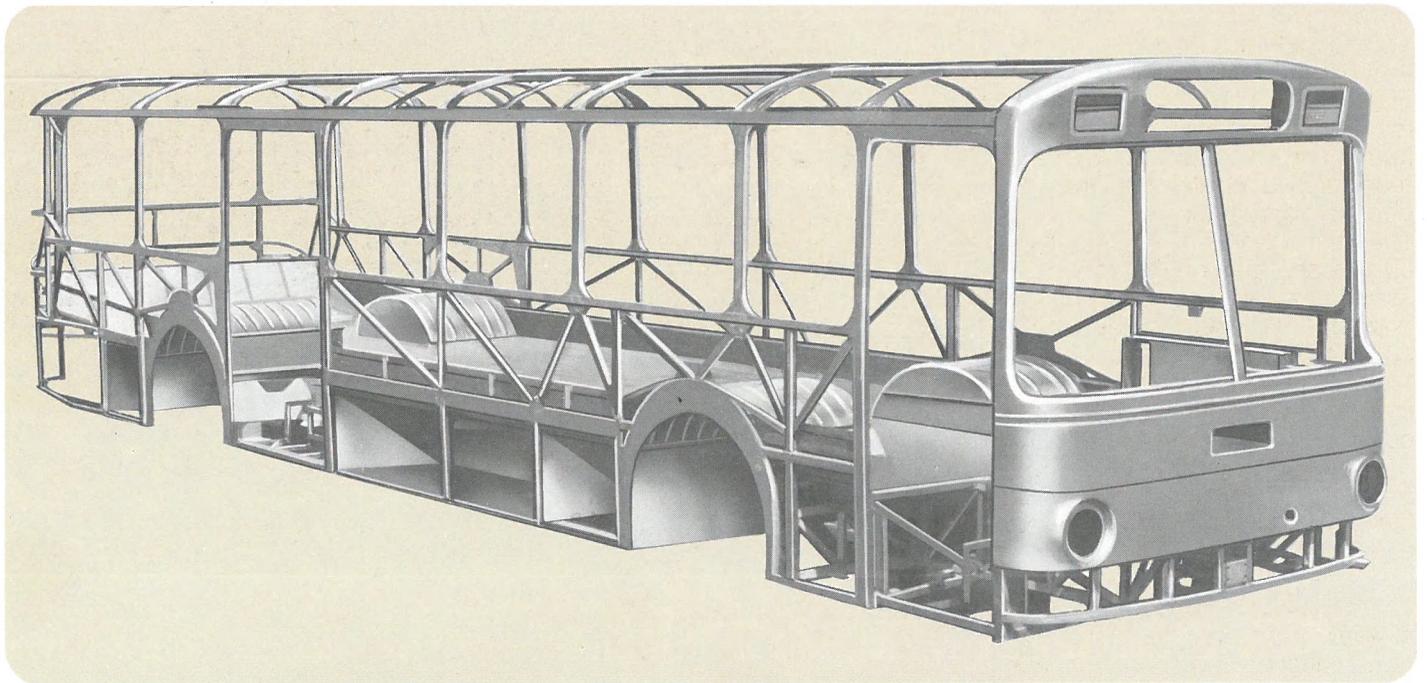
— A = Reservoir pressure
 — B = Brake pressure
 — C = Control line for bus stop parking brake
 — D = Defroster
 — E = Automatic drainage

- | | | | | |
|---|---|---|---|---|
| <p>1 Hose coupling</p> <p>2 Compressed-air reservoir</p> <p>3 Working cylinder</p> <p>4 Exhaust brake bleeder valve</p> <p>5 Four-circuit guard valve</p> <p>6 Pressure switch</p> <p>7 Connection to door closing mechanism</p> <p>8 Check valve</p> | <p>9 Connection to automatic drain control line</p> <p>10 Dual-circuit brake valve with brake light switch</p> <p>11 Compressed-air reservoir with automatic drainage</p> <p>12 Automatic drain valve</p> <p>13 Relay valve</p> <p>14 Spring actuator release control switch</p> <p>15 Double check valve</p> | <p>16 Exhaust brake cylinder</p> <p>17 Working cylinder</p> <p>18 Air compressor</p> <p>19 Pressure regulator with tyre inflating connection</p> <p>20 Automatic defroster pump</p> <p>21 Compressed-air reservoir</p> <p>22 Spring-loaded diaphragm cylinder</p> | <p>23 Three-way/two-way valve</p> <p>24 Connection to air suspension</p> <p>25 Reservoir check connection</p> <p>26 Diaphragm cylinder</p> <p>27 Brake light switch</p> <p>28 Double check valve</p> <p>29 Pressure limiting valve</p> <p>30 Bus stop parking brake quick-release valve</p> | <p>31 Filler neck</p> <p>32 Brake checking connection</p> <p>33 Brake pedal</p> <p>34 Double pressure gauge for front and rear axle brake circuits</p> <p>35 Switch (Spring actuator emergency release mechanism)</p> <p>36 Manually operated brake valve</p> |
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Floor Frame and Body- a self-supporting structure

Floor frame and body are welded together to form a self-supporting all-steel unit. The understructure is a lattice frame with side and cross members – reinforced by diagonal struts and web plates.

Side walls, front end, rear and roof are made of high-grade steel body panels. They are riveted or welded to the body skeleton made of square steel tubing.



Power Plant OM 407 h - Robust and Reliable

The O 307 is driven by the improved Mercedes-Benz diesel engine OM 407 h – a water – cooled six-cylinder in-line engine. Its capacity is 240 hp or 177 kW or 834 Nm at 1500/min. This increase in capacity is a result of a longer stroke – the ensuing larger cubic capacity is 11,412 cm³. Engine is mounted horizontally under the floor at the rear end.

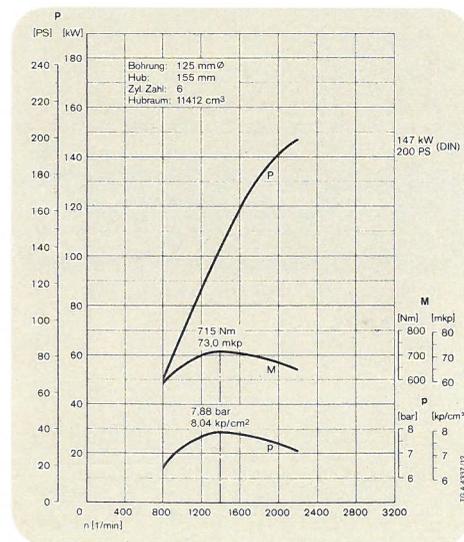
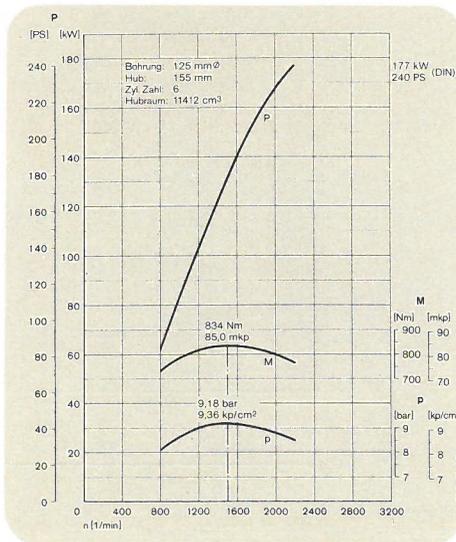
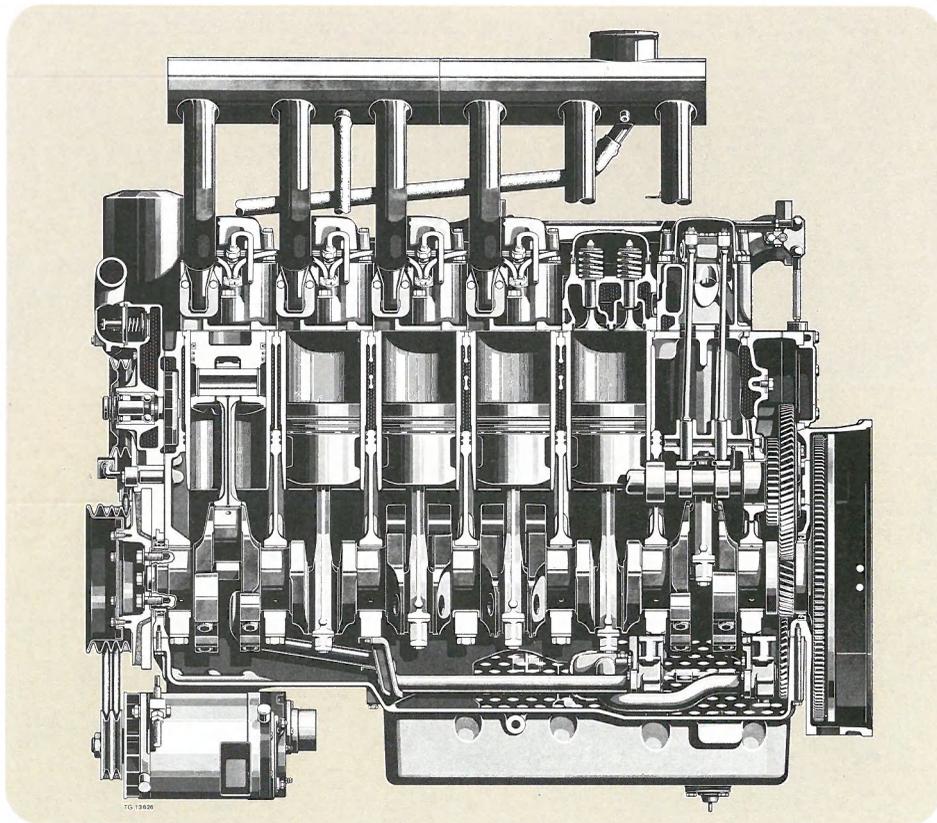
New engine suspension ensures that resonance is transmitted even less than previously on to the bus. As a result, the O 307 is even quieter for its passengers now.

Engine air intake via noise damper and paper filter on left at rear end. The water cooler is on the right at the rear on a rubber-mounted supporting frame. The viscodrive fan with automatic speed regulator is located behind the radiator.

The Mercedes-Benz OM 407 h diesel engine operates on the proven Mercedes-Benz direct injection principle. This method keeps fuel consumption low – an essential factor for reducing costs. Additional advantages are: soot and smoke-free combustion, excellent fuel economy, outstanding starting characteristics, always ready for action, very good thermal features, long life. The output figures show high output with economical consumption.

The maximum torque is attained even at a relatively low speed. That means good initial pulling characteristics and accelerating power on gradients. The single- disc dry clutch with automatic adjustment is actuated hydraulically in conjunction with a booster spring.

The 177 kW (240 hp) engine, which itself is low in pollutant emission, can be replaced by a 147 kW (200 hp) variant of the OM 407 h which has even better environmental characteristics. In this de-rated engine, the emission of pollutants is reduced still further.



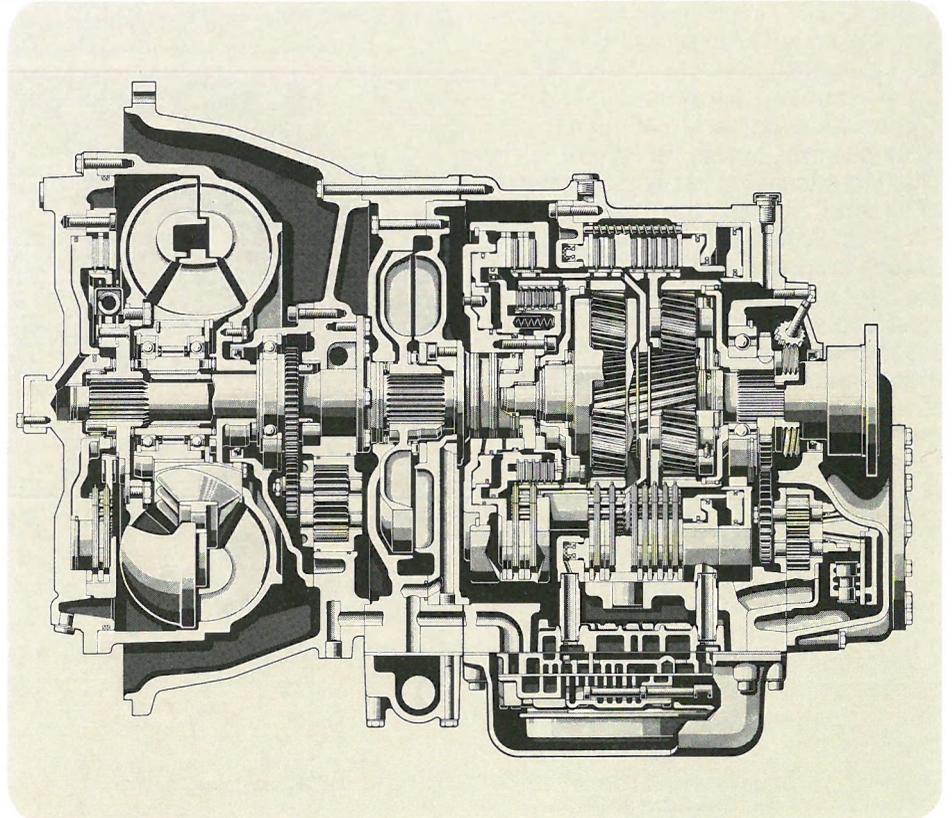
Steering and Gear Changing similar to that of a car

Synchronised gears

The O 307 is fitted with the MB 5-speed synchromesh transmission with rotary selector floor shift mechanism as standard equipment. All 5 gears are fully synchronised, well matched to engine characteristics and, therefore, ensure smooth, economical driving. The transmission shifts easily and reliably.

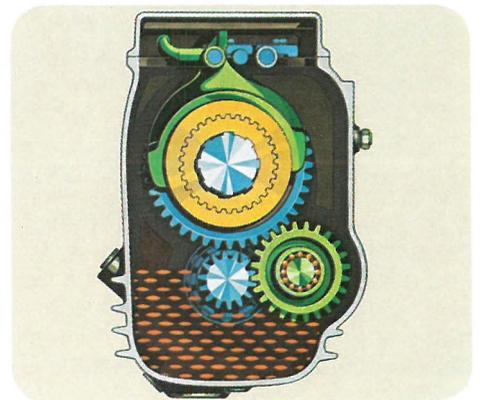
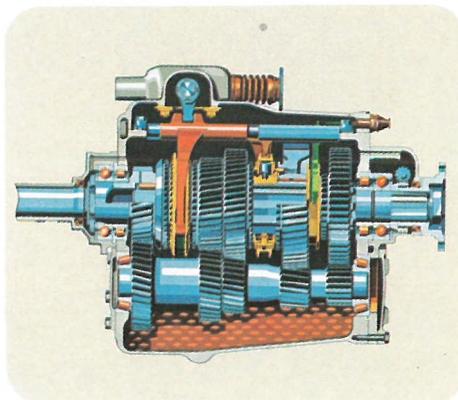
Power steering

The proven Mercedes-Benz power steering with steering damper is also mounted in the O 307. The hydraulic pump is mechanically driven. Consequently the OM 307 can be driven more easily than some cars. Each steering movement is transmitted accurately and directly to the front wheels by the power steering system – with little effort and few turns of the steering wheel. This is obviously a considerable advantage to the driver when steering the vehicle round tight corners as well as when manoeuvring into and out of parking lots.



Automatic Transmission similar to that of a car

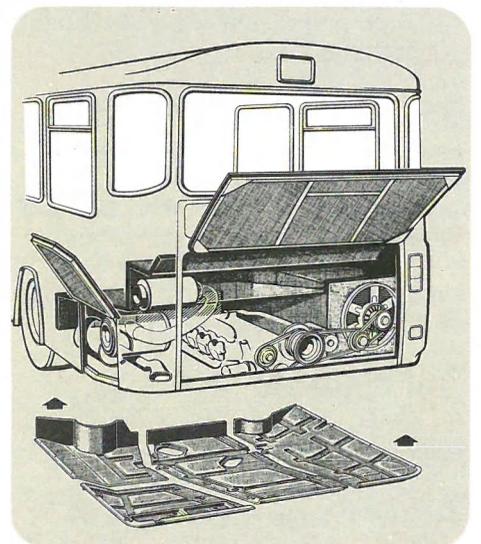
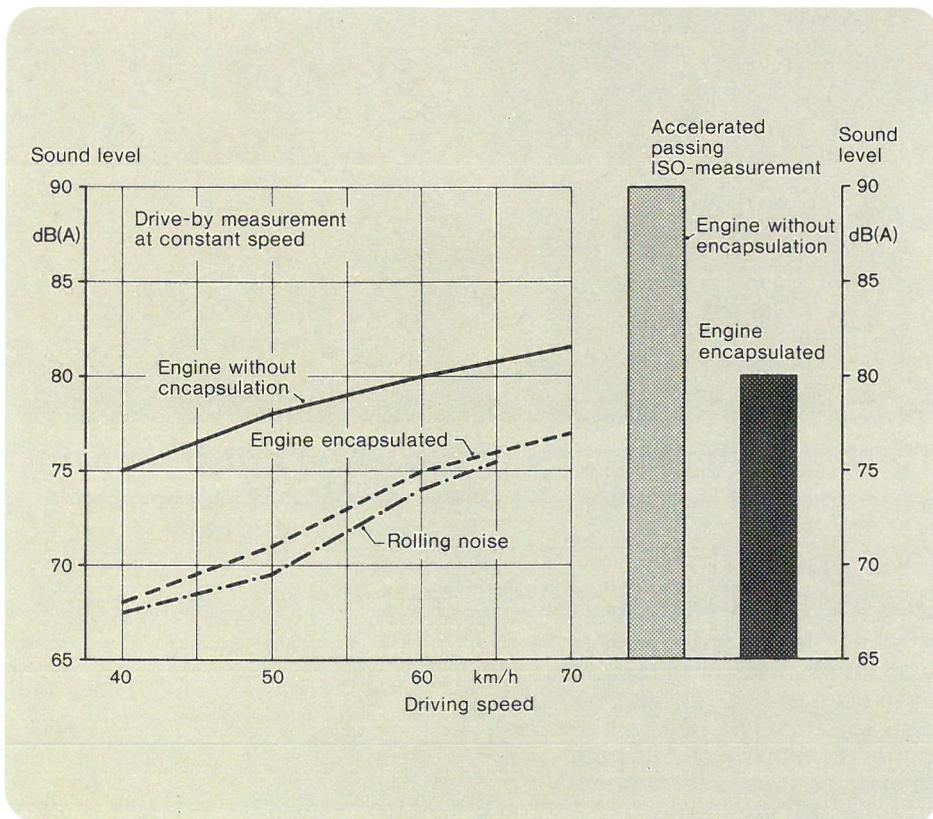
The O 307 can also be supplied with a Mercedes-Benz automatic transmission W 3 D 080, with or without retarder. This transmission fulfils all the requirements of transport service: good performance, extremely reliable, long life, small size, low weight, gear changing without interruption of power flow, starting torque multiplication by 2.8, low fuel consumption. Owing to by-pass clutch, less wear on the brakes. In addition, gearshift locks, kick-down mechanism as in a car, tow-start and towing off possible. All of which is no luxury. On the contrary. The automatic transmission offers many advantages to the transport company, the driver and the passengers.



The Non-Pollutive Bus

Increasing vehicle traffic will increase noise, increase air pollution and will aggravate road congestion even more. The O 307 provides the remedy. Not simply by carrying about 100 passengers, who would otherwise block city streets with their cars.

The O 307 can be supplied with a sound-insulated (encased) engine. The engine compartment is lined with sound-absorbing material and covered with a new type of casing. As a result, engine noise is reduced by 2/3. When the bus passes by, practically the only noise that can be heard is that of the tyres on the road. When the bus is stationary and the engine is idling hardly any engine noise at all can be heard at a distance of 23 ft (7m) from the bus. The 147 kW (200 hp) low pollution diesel engine produces far less toxic fumes than the minimum permitted by present regulations on the reduction of pollutants. The Mercedes-Benz O 307 regular-service country bus is a contribution to environmental protection.



Improved, Long-lasting Anti-corrosion Protection

Retaining the value of your vehicle – an economic necessity

The economy of an investment is, not least, reflected by the service life and lasting value of the object. These two items have a considerable bearing on the profitability calculation of the investment in a bus. The quality of the workmanship and the material used, plus the superior technical design, very soon earned Mercedes-Benz buses the reputation of retaining their value. This is also guaranteed by an advanced anti-corrosion programme which is up to the latest standards of technical development.

Wheel arches

The wheel arches are made from stainless steel.

Chassis foam filling

Hollow sections are susceptible to corrosion from inside. Therefore, the relevant underfloor sections of the O 307 are completely filled with rigid polyurethane foam.

Re-rolled zinc plating

The steel panels for the side walls, front and rear sections, roof and the partition sheets, the small access and maintenance flaps as well as the entrances are made from re-rolled zinc plated sheet steel. All large flaps are made of aluminium.

Coil coating

The edges of the roof are made from coil coating sheet steel.

Dual-compound epoxy paint

The vertical partitions between the engine and passenger compartment, the entrances and exits, the luggage compartments and the wheel arches are coated with dual-compound epoxy paint.



Thick filler layer

We use thick filler as a primer.

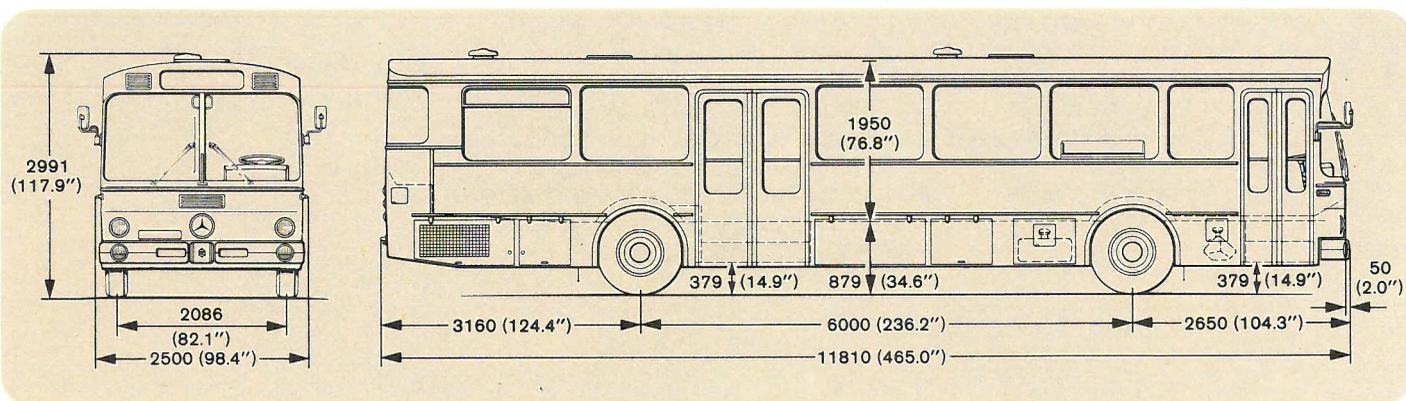
PVC under-floor protective coating

This sealing and underbody protective material has, for many years, been used exclusively on Mercedes-Benz buses; it has been continuously further developed, and its hard-wearing properties have been considerably improved.

Baked on finishing paint

The top coat, the finishing paint, is a synthetic resin paint.

Technical Data



Engine

Type	Mercedes-Benz OM 407 h	
Method of operation	4-stroke diesel MB direct injection	
Number of cylinders	6	
Bore/stroke	125/155 mm	
Total displacement	11412 cm ³	
Compression	16.5 : 1	
Engine output DIN ¹	240 HP at 2200 rpm	177 kW at 2200/min
Max. torque DIN ¹	85 mkp at 1500 rpm	834 Nm at 1500/min
Crankshaft bearing	7 multi-layer bearings	
Valve arrangement	overhead	
Lubrication system	forced circulation by gear pump	
Oil filter	main flow fine-mesh filter and by-pass micronic filter	
Air filter	paper filter	
Cooling	water circulation by rotary pump double thermostat, viscofan	
Generator	capacity 28 V, voltage 95 A	
Starter	5 kW (6.5 HP) 24 Volt	
Battery	2x110 Ah/12 Volt	
Voltage of consumers	24 Volt	

Capacity

	Seats	Standing room	Total
occasional service	1/53	-	1/53
regular service	1/53	46	1/99

Weights (kg)

Regular service		
Front axle		6000
Rear axle		10000
Total weight		16000

Power Transmission

Clutch	single-disc dry clutch
Transmission (standard)	MB 5-speed synchromesh transmission G 03/60 - 5/54 i = 5.411/2.873/1.942/1.30/1.0
Transmission (optional)	GO 3/80 - 4/4.43, ZF 6 - 80/7.41, W 3 D 080 (with or without retarder)
Gear shift	floor shift
Differential	spiral bevel gear
Rear axle ratio	i = 4.640 (standard) RW = 4.995

Running gear

Frame	self-supporting frame floor unit with side and cross members
Wheels	steel disc wheels
Rim type	oblique shoulder
Rim size	7.5 - 20
Tire size	10.00 - 20 PR 16
Front axle	MB rigid axle
Rear axle	MB hub reduction axle
Suspension front.	2 air bellows with 4 telescoping shock absorbers
Suspension rear	4 air bellows with 4 telescoping shock absorbers
Steering	MB power steering
Service brake	dual-circuit compressed air
Parking brake	spring-loaded, acting on rear wheels (flange - mounted to service brake)
Suppl. brake	electro-pneumatic exhaust brake, bus stop brake

¹⁾ The output indicated in HP or kW acc. to DIN is effectively available at clutch for driving with all auxiliary requirements already deducted. The data in SI units (kW - kilowatt, Nm - newtonmeter) are converted and rounded off. In accordance with VDA Statement, all technical data acc. to DIN 70020. Contents non-binding, subject to change.

Service - A Matter of Course

Wherever you go, Mercedes-Benz are always nearby to help you at one of their service stations, of which there are 1300 in the Federal Republic of Germany and 1200 in the rest of the world. All are well-equipped to deal with maintenance, service and simple repair work.

Our employees are given thorough training since you must be able to rely on their ability and experience. This means: reasonable distance to the nearest service station, short times off the road, well organized work and experienced service staff to provide everything which helps to save you time and money.



Customers' vehicles are also shown in this brochure. We should like to point out that their appointments and paintwork are not standard in all cases.



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