

"Setra TopClass Family" driving presentation

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The new Setra TopClass 400

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- **Touring coaches now even more advanced and attractive**
- **Active and passive safety of the highest level**
- **Uprated engines**

European bus and coach journalists will now have their first opportunity to test the new Setra TopClass 400, which entered series production at the start of the year. The entire product range will be available for the comparison test drives in Neu-Ulm: an S 411 HD, an S 415 HD, an S 415 HDH, an S 416 HDH, an S 417 HDH and an S 431 DT double-deck touring coach.

Even though the brand has every reason to be proud of the high sales figures, positive customer feedback and the numerous international accolades for the TopClass 400, Setra continues to be committed to constantly enhancing quality, engineering, safety and comfort. Development engineers and designers, in close cooperation with Production and Sales, have incorporated a host of technical solutions and new features in all models of the TopClass 400 touring coach generation, which is now even more advanced and attractive.

Werner Staib, manager of the Setra Bus and Coach unit, is proud of the fact they managed to raise the level of quality of the top-class Setra touring coaches even further without altering the distinctive Setra "face": "Our objective was to achieve the maximum amount of technical improvements with the minimum amount of changes to the look of the vehicle."

Active and passive safety of the highest level

The first priority in this comprehensive facelift was given to safety. Once again Setra is setting the standard by offering the TopClass 400 model series with a displaceable driver area and an integral absorber structure as standard. The interaction of these two subsystems was optimised based on the findings of countless crash simulations. The result is a significant increase in passive safety

for driver and tour guide. The effectiveness of this safety system has also been demonstrated in many crash tests. Both the displaceable driver area and the absorber structure are elements of the new Front Collision Guard (FCG) system, which also offers an underride guard that complies with ECE-R 93 to protect other road users involved in a collision. These three letters: FCG will in future stand for the highest degree of protection for the driver and passengers of Setra touring coaches.

While the FCG system raises passive safety substantially, there are also innovations in the area of active safety. Take for instance the new lighting element at the front of the bus that illuminates the junction ahead when turning. At speeds below 40 km/h, the relevant fog lamp is automatically activated to provide a cornering light function as soon as the indicator is selected.

Both front upper (corner) marker lights now feature LED technology, offering a significantly longer service life. What is more, a new wiper control system ensures that the wiper blades are slowed down just before the reversal point, substantially reducing noise in the process.

Even more powerful engines

Another quality improvement is not immediately visible, but is all the more apparent when you step on the accelerator pedal. Coach operators can count on even more power from now on, which helps the Setra tackle the steepest gradients on mountain roads with even greater ease. The substantially uprated engines are housed beneath the newly-designed engine flap. This flap now uses a swivel rather than a lifting mechanism and is integrated at the vehicle rear to protect against rainwater ingress. Setra offers the S 415 HD, the S 415 HDH, S 416 HDH and the S 417 HDH with the OM 457 LA 6-cylinder in-line engine developing 315 kW/2100 Nm or 335 kW/2200 Nm respectively. The V8 OM 502 LA engine developing 370 kW/2300 Nm is available on request, and is installed as standard on the S 431 DT double-deck touring coach. The S 411 HD compact touring coach is fitted with the V6 OM 501 LA engine with an output of 300 kW/1900 Nm. Another new feature is the Power-Shift GO 240-8/MPS automated 8-speed manual transmission,

which is available as an alternative to the ZF-AS Tronic. All engines meet the Euro 4 emissions standard and can also be equipped to meet Euro 5 as an option.

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More space thanks to front-end extension

And it is not only the engine power that has been substantially updated in the new TopClass 400: the front-end of the coach is now 200 mm longer, which translates into extra comfort for driver and passengers. The additional 14 centimetres in the bodyshell offer the coach driver even more seat adjustment options, while the extra seven centimetres for the tour guide provides the same legroom as offered by a four-star seat. The S 411 HD has a slightly shorter front-end extension, while the Setra "Club Coach" with its compact length of 10.10 metres remains the most "agile" member of this touring coach family from Ulm. The wheelbase of the S 415 HDH has been extended by 100 mm, thus increasing the total vehicle length of this three-axle coach to 12.30 metres.

And by moving the driver rest area to its new location behind entry II, the S 415 HDH, S 416 HDH and S 417 HDH super-high-deckers now offer additional space to accommodate a seat for a second tour guide. Boarding and alighting through the rear door is now even easier in these coach models as Setra has equipped the new TopClass 400 super-high-deckers with additional entry and exit aids.

Roll-pitch control and trailing axle with independent suspension

When it comes to ride comfort, Setra passengers enjoy a silky smooth ride. Using a series of controlled countermeasures, the optional pitch/roll control system ensures the vehicle does not develop uncomfortable body movements, gliding along smoothly both on bends and on uneven road surfaces. The trailing axle with independent suspension, installed for the first time in the TopClass 400 in Europe, also contributes by guaranteeing a high level of smooth running, while also reducing weight by 160 kg.

As far as weight is concerned, the reworked touring coaches also offer every reason to be pleased. In spite of some measures leading to an increase in weight, it was still possible to reduce the overall weight of the vehicles by one percent. The omission of the luggage compartment flap on the left side is one factor in this weight reduction, apart from making access to the luggage compartment easier and more convenient.

But these are just some of the measures that modify the vehicles' looks. Take for instance the rubber strip around the windscreen that has been omitted - an innovation that will also improve fuel economy.

The newly integrated cornering light and the increased angle of approach contribute to giving the Setra a face that bears an even friendlier "smile" in future.

Naturally the driver also benefits greatly from this facelift courtesy of the even more comfortable cockpit which increasingly features the kind of exclusive innovations normally reserved for a passenger car. New features include a redesigned joystick, a leather-trimmed multifunction steering wheel with a host of integrated functions and the new instrument cluster with a clear 3D look.

2001 brings a new dimension to touring coach design

Setra introduced a new dimension in touring coach design with the launch of the TopClass 400 in 2001, ensuring a consummate touring experience for passengers and driver. This is thanks to innovative comfort features such as back supporting seats, multimedia systems, a range of kitchen appliances and the unique glass roof above the central aisle. The ergonomically designed cockpit is a blend of elegant practicality and aesthetics.

It is not for nothing that the TopClass 400 was voted "Coach of the Year 2002" by European bus and coach journalists just eight months after its debut. Among the features that most impressed the jury were the outstanding technology and the

distinctive design as a symbiosis of form and function. Since then the TopClass 400 Page 6 has scooped many other international accolades and awards. Among them the "Commercial Vehicles of the Year 2007" readers' poll where 8500 participants voted the Setra TopClass 400 the winner in the "High-deck touring coach" category for the third time.

Numerous safety systems

The TopClass 400 is also state-of-the-art when it comes to safety. All the vehicles are fitted as standard with disc brakes, the Electronic Braking System (EBS), anti-lock braking system (ABS), acceleration skid control (ASR), Brake Assist (BA), and Electronic Stability Program (ESP), an active system designed to enhance driving safety and handling stability. Since 2005, Setra touring coaches have also been available with proximity control (ART) on request. This system reduces the driver's workload on motorways and other major roads. When the proximity control system detects a slower-moving vehicle ahead, it automatically brakes the coach until a distance preset by the driver is reached. This gap is then constantly maintained by the proximity control system. Since 2005, Setra has also offered the Continuous Braking Limiter (DBL) as standard. The system automatically brakes the coach, for example if it exceeds the legally prescribed speed limit of 100 km/h by accelerating under gravity on a downhill gradient. Setra also offers Lane Assistant (SPA) as an option. This system uses a video camera to monitor the distance between the vehicle and the lane markings and detect any tendency by the vehicle to depart from its lane. If the vehicle appears likely to cross this line, the driver is immediately warned by a pulsating mechanism in the seat - which goes unnoticed by the passengers. The warning is only given when the vehicle reaches the outside edge of the lane marking, which gives the driver the greatest possible scope to take remedial action. Lane Assistant is activated at speeds above 70 km/h on long, monotonous motorway journeys, for instance.

Six models in Europe

The TopClass 400 generation comprises the 10.10-metre-long S 411 HD Club Coach, the 12-metre S 415 HD, the S 415 HDH super-high-decker with three axles,

the three-axle 12.99-metre-long S 416 HDH and the 13.85-metre S 417 HDH super- Page 7
high-decker. The flagship in this Setra premium range is the 13.89-metre-long
S 431 DT double-decker coach. Setra designed the S 417 specifically for the North
American market; it conforms to US regulations and was first presented in spring
2003.

The Setra high-deck touring coaches

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- **The S 411 HD is the agile TopClass 400 Club Coach**
- **S 415 HD with new automated manual transmission**

The 10.16-metre-long S 411 HD and the 12.20-metre-long S 415 HD are the two two-axle high-deck touring coaches in the Setra TopClass 400 line-up.

The compact S 411 HD represents the entry-level version in the touring coach range. Boating 36 seats in the 4-star version, it is ideal for larger groups or small clubs. Thanks to its compact dimensions, the "Club Coach" is not only a compelling proposition for the growing travel market for smaller tour groups but also lends itself for use in narrow streets in historic city centres or on narrow mountain passes.

The S 411 HD is equipped with a 300-kW (408-hp) Euro 5 Mercedes-Benz OM 501 LA engine and a power-assisted Mercedes-Benz GO 190 6-speed manual transmission. In autumn 2007, the touring coach, which was unveiled in 2001, celebrated an important milestone and anniversary when the 500th vehicle of this model was ceremoniously handed over to coach operator "Fischwenger" from Straßwalchen near Salzburg.

The S 415 HD available for the comparison test drives is fitted with a Mercedes-Benz OM 457 LA engine developing 335 kW (456 hp), which meets the Euro 5 exhaust emissions standard. Alongside a host of technical enhancements outside and inside the TopClass 400, the coach also comes with the new GO 240-8 PowerShift automated manual transmission. The S 415 HD is also available with the ComAir roof-mounted air-conditioning system as an option.

The Setra HDH three-axle coaches

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- **S 416 HDH - the economical version of the S 415 HD**
- **S 417 HDH - the ideal solution for long-distance routes**

The three-axle super-high-decker coaches in the Setra TopClass 400 line-up are offered in three lengths. The range includes the 12.30-metre S 415 HDH, the 13.20-metre S 416 HDH and the 14-metre S 417 HDH. While the S 415 HDH was unveiled to coincide with the market launch in 2001, the S 416 HDH is the most recent addition to the TopClass 400 family. This economical version was presented in autumn 2003 - its body 99 centimetres longer than its earlier stablemate. This three-axle coach offers outstanding seat comfort, boasting 50 seats with 4-star spacing. The S 417 HDH comes with all conceivable comfort features, along with large luggage compartment capacity, to ensure a consummate touring experience. The coach is very popular especially in Turkey where touring coaches tend to be used on long-distance routes.

The S 415 HDH is fitted with a Mercedes-Benz OM 457 LA engine developing 315 kW (428 hp) and a GO 210 power-assisted manual transmission. The S 416 HDH develops a higher output of 335 kW (456 hp) from the same engine and comes with the ZF-AS Tronic automated 12-speed manual transmission. The rear end of the S 417 HDH accommodates the 370-kW (503-hp) Mercedes-Benz OM 502 LA engine with ZF-AS Tronic automated 12-speed manual transmission. All three test vehicles already meet the Euro 5 emissions standards due to come into force in autumn 2009.

The S 431 DT - the top-of-the-range TopClass 400 Page 10

- **Increased passenger capacity and longer maintenance intervals**
- **500th double-deck touring coach already delivered**

The S 431 DT is the "flagship" Setra TopClass 400, which was unveiled at the Hanover IAA Commercial Vehicle Show 2002. The double-deck touring coach, which is 13.89 metres long and four metres high, is the top-of-the-range model in the Setra touring coach line-up.

The S 431 DT has been completely redesigned and now provides a far more economical solution than its predecessor, the S 328 DT. This is thanks to the exterior width of 2.55 metres, the increased passenger capacity with up to four more seats than comparable competing products, the longer maintenance intervals and the larger 8.4 m³ luggage compartments. Four stowage compartments with a volume of 0.8 m³ have been accommodated under the platforms between the front and rear axle for the first time - creating an additional 2.5-m³ payload volume (incl. driver's rest area).

Various aspects of active and passive safety have been redesigned and improved. New features include the transverse-oriented bodyshell with its construction featuring reinforcements stretching across the roof and down the sides, ensuring higher torsional stiffness and, in turn, better directional stability for the vehicle. The 50-mm extra width also promotes stable handling and contributes to overall safety of the vehicle and passengers.

The design with its progressive "La Linea" aluminium styling and rising flanks adds a visible sign of dynamism and stretches the vehicle body. The interior, too, creates an all-round feeling of spaciousness thanks to the extra 65-mm width compared with the outgoing model and the increased height. The S 431 DT slots in harmoniously with the TopClass 400 design idiom courtesy of its coherent design statements both inside and out.

The double-deck touring coach is fitted with the Mercedes-Benz OM 502 LA engine Page 11 developing 370 kW (503 hp) and the ZF-AS Tronic automated 12-speed transmission. The coach already meets Euro 5 emissions standards.

Last year saw the delivery of the 500th double-deck touring coach. This vehicle has been providing sterling service throughout Europe with the Luxembourg-based operator "Voyages Demy Cars" since December 2007.

A major investment in our future

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- **New Setra Customer Centre opened in Neu-Ulm**
- **Vehicles handed over in stylish, personal surroundings**

Neu-Ulm. The new Setra Customer Centre, which was opened last autumn as part of the Setra Show 2007, means customers can now take delivery of their vehicles in stylish surroundings. Werner Staib, manager of the Setra Bus and Coach unit: "We have made a major investment in our future. Handing over vehicles now becomes a much more personal experience."

The new 3800-m² building complex includes ten handover bays which can accommodate up to 18 buses or coaches. There is also a reception area including cafeteria, 65 offices and meeting rooms, the Design Centre and a permanent classic vehicle exhibition. The building, which cost ten million euros and is situated right next to the state-of-the-art bus and coach production facility, will in future host a wide range of interesting technical forums and events relating to Setra buses and coaches. The hall can accommodate some 2500 guests.

The Customer Centre is testimony to the importance the brand attaches to its Neu-Ulm location and represents another important contribution to retaining jobs in the region.

Neu-Ulm is also home to the painting centre, the state-of-the-art final assembly facility for touring coaches and rural-service buses, the development and testing departments, the commercial/technical training suite as well as Germany's largest EvoBus Service Centre.

Unique in the bus and coach sector

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- **Setra 3D bus and coach designer provides virtual camera tours**
- **Exterior and interior design presented in three dimensions**

Setra can now offer bus and coach operators even better advice with its unrivalled cutting-edge computer technology, all thanks to the new 3D bus and coach designer in the Neu-Ulm Setra Customer Centre.

A visually attractive vehicle will inevitably catch the passengers' eye and at the same time help boost the operator's bottom line. And so design advice becomes a decisive factor in selecting a new vehicle. Equipment specialists from the Neu-Ulm Setra Design Centre have been better equipped to meet these exacting customer requirements since the start of the year thanks to the new 3D bus and coach designer.

Whether it's selecting the base colour for the bodywork, the mirror housings or the wheel trim, or whether the customer has to decide on the colours for the seat covers, curtain fabrics, seat platforms, luggage racks or the side wall panelling: the Neu-Ulm Setra Design Centre takes the drudgery out of the decision-making process. Bus and coach operators can see virtually instantly what their new vehicle will look like on two 60" monitors and get a 3D feel for their vehicle while still at the consulting stage. This is made possible thanks to state-of-the-art technology developed specifically for the design specialists. The designers have eight million graphics elements at their disposal to illustrate every last corner of the vehicle in three dimensions, all based on the customer's very own requirements.

The simulated camera tours in and around the coach are modelled on an S 416 HDH I in the new TopClass 400 range and a ComfortClass 400 S 415 GT-HD. Both have been implemented using CAD data from the development unit specially for the Setra-specific 3D bus and coach designer.

The ComfortClass 400: new dimension in economy and comfort

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- **More space thanks to increased length**
- **The cockpit: more space for even greater comfort**
- **Engines for GT-HD vehicles**
- **More space when loading and unloading**
- **Easy access to the electronics**

A new design, new vehicle lengths, an all-new cockpit and a host of new interior and exterior features highlight the uniqueness of the ComfortClass 400 range.

Launched in 2003, the ComfortClass 400 range comprises the S 415 GT, S 415 GT-HD, S 416 GT-HD and S 417 GT-HD models and opens up a new dimension in the combination of economy and comfort. In spring 2005 the product range was extended with the S 415 GT-HD and S 416 GT-HD right-hand-drive versions.

More space thanks to increased length

During the development phase of the ComfortClass 400, Setra took into account the lifting of legal regulations that limited the length of buses and coaches to a maximum of 12 metres. The S 415 GT and S 415 GT-HD measure 12,200 mm, the S 416 GT-HD 13,020 mm and the S 417 GT-HD is 14,050 mm. This length concept, which is new to touring and private-hire coaches, yields noticeably more interior space than in comparable vehicles, while improving economy and comfort in a most impressive manner. The bodyshell construction featuring reinforcements stretching across the roof and down the sides - in which a series of transverse tubes are connected by means of side members - has been a decisive element in extending the front end of the vehicles and making them up to 2550 mm wide. This system ensures a high level of torsional stiffness for the vehicle. As on the TopClass 400 coaches, the body framework is protected by cathodic immersion dip coating. At the front end, the vehicles are 60 mm longer than the previous models. The driver's area is now 140 mm longer. The front entrance is also 70 mm wider thanks

to the longer nose section. The new length concept makes boarding and alighting at Page 15 the front door much easier for passengers. The engineers managed to gain another 70 mm to provide more generous seat spacing at the right, in front of the rear door. Despite the vehicle's increased length, the overhang angle has been increased to 7.65° – a particular advantage on narrow mountain passes or when entering bus-stop bays.

The cockpit: more space for even greater comfort

Another important feature of the ComfortClass 400 is the redesigned cockpit with its distinctive styling. All the controls have been arranged according to ergonomic principles. Now the touring coach-style driver's area features a joystick gearshift, integrated navigation monitors, an additional bottle holder as well as further stowage options for briefcases, maps and such like. The adjustable steering column, adopted from the TopClass 400, is equipped with a pneumatic locking mechanism. Furthermore, a cash desk can easily be installed in the cockpit if the ComfortClass 400 is to be used on rural regular-service routes.

Engines on the GT-HD vehicles

The S 415 GT-HD, S 416 GT-HD and S 417 GT-HD models in the ComfortClass 400 range are equipped with the vertically installed OM 457 LA in-line six-cylinder 4-stroke diesel engine with turbocharger, charge-air intercooler and direct injection. The Euro 4 engine is available for the S 415 GT-HD with a power output of 315 kW/428 hp and a maximum torque of 2100 Nm. The S 416 GT-HD and the S 417 GT-HD are supplied with the 315-kW/428-hp engine as standard, offering maximum torque of 2100 Nm.

The S 415 GT-HD, the S 416 GT-HD and the S 417 GT-HD are equipped with the Mercedes-Benz MB GO 210 six-speed manual transmission with joystick control. The automated ZF-AS Tronic 12-speed manual transmission is available on request for the GT-HD models. The S 415 GT is fitted with the vertically installed OM 457 hLA in-line six-cylinder engine developing 220 kW and the GO 190 transmission. A version with a power output of 260 or 310 kW and the GO 190 trans-

mission is available on request.

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All vehicles are equipped with disc brakes, Voith Retarder VR 115 (ZF intarder in conjunction with the ZF-AS Tronic), Electronic Braking System (EBS), anti-lock braking system (ABS), acceleration skid control (ASR), Brake Assist (BA), and Electronic Stability Program (ESP). ESP has been standard on all TopClass 400 and ComfortClass 400 models since October 1, 2003.

More space when loading and unloading

The Setra ComfortClass 400 models offer ample space for the crew and passengers when loading and unloading luggage. The Setra S 415 GT-HD and the Setra S 416 GT-HD have two enlarged, hinged luggage compartment flaps on the left-hand side of the vehicle. An additional partition in the luggage compartment has been removed on the ComfortClass 400 models, which together with the reduction in the number of flaps guarantees more convenient access.

Easy access to the electronics

The entire electronics system is a combination of conventional switching systems and flexibly programmed FPS controls, the modules of which are networked via a CAN databus. FPS consists of several "intelligent" modules located decentrally in the vehicle - wherever something needs to be operated or controlled. The advantage of this networked electronics system is that fewer cables and relays are needed. Reduced complexity results in more reliable coach operation.

MultiClass 400: economy right down the line

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- **Product segment includes seven models**
- **Wide range of appointments**

Regular-service operations on weekdays and the ideal vehicle for weekend excursions: the MultiClass 400 excels with outstanding versatility and cost-effectiveness. Bus operators now have a choice of seven models in this Setra product segment.

The S 412 UL with its length of just 10.80 metres is the most manoeuvrable model, and is specifically designed for regular-service operations with its 45 "Transit" seats manufactured in-house. Owing to its short length, it is ideally suited to economical regular-service operations on topographically difficult routes with steep, narrow stretches. The other vehicles in the MultiClass 400 series are the 12.20-metre-long S 415 UL, the 14.05-metre-long S 417 UL and the S 419 UL, which measures 14.98 metres. Generous luggage capacity, comfortable seats and a wide range of appointments such as a galley, toilet and air conditioning systems make these vehicles the ideal combination for regular-service and touring operations.

And when a low-floor bus is called for, the entry height for the 12-metre-long S 415 NF and 13-metre-long S 416 NF is just 360 mm when fitted with 11 R 22.5 tyres all round, with direct access to the level interior. Two vehicles which are tailor-made for regular-service operations with large passenger flows and varied applications. Available features include innovative door solutions, cockpit variants, different destination displays and numerous seating arrangements.

The latest product in the line-up is the S 416 UL, which was premiered last autumn at the "Busworld" international show in Kortrijk, Belgium. The S 416 UL makes the MultiClass 400 series even more versatile by adding a new vehicle length. The wheelbase on the 13.04-metre S 416 UL has been increased to 6920 mm compared with the S 415 UL with its wheelbase of 6080 mm. This creates space for an even larger luggage capacity of 5.5 m³.

The wide range of available appointments and seating, as well as a new appearance, makes the new model the ideal solution for rural operations combined with excursions.

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Driving a Setra bus means being ready for the future. The MultiClass 400 buses are already equipped with Euro 5 engines, which become mandatory from 2009, as well as a NO_x sensor. This nitrogen oxide sensor is installed downstream of the SCR catalytic converter, and measures the levels of nitrogen monoxide (NO) and nitrogen dioxide (NO₂) in the exhaust gases to ensure that the legally prescribed nitrogen oxide limits, which are defined by the Euro 4 and Euro 5 exhaust emissions standards, are not exceeded.

The new Parts Logistics Centre in Neu-Ulm

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- **Central parts supply for Setra buses and coaches worldwide**
- **EUR 70 million invested in 2006 and 2007**

After just 17 months under construction, EvoBus GmbH inaugurated its new Parts Logistics Centre in the Neu-Ulm district of Schwaighofen at the end of February. From here the worldwide Omniplus service organisation will now be supplied with parts for the Setra and Mercedes-Benz brands.

Harald Landmann, Head of Daimler Buses: "Our new Parts Logistics Centre is a clear demonstration of our commitment to the Neu-Ulm location and also to Germany as a business location. Investment to the tune of EUR 70 million over the past two years in Ulm/Neu-Ulm is testimony to this commitment. We are the only bus and coach manufacturer that is continually fine-tuning the competitiveness of our premium buses and coaches from our base in Germany and we intend to build on this success."

Covering an area of some 30,000 m², more than 100,000 different genuine parts of proven Omniplus quality are stored for Mercedes-Benz and Setra buses and coaches to facilitate EvoBus servicing. The Omniplus service brand includes a service network of more than 600 EvoBus service partners. A new warehouse management system which controls all the processes is a notable feature of the new Parts Logistics Centre. This system controls all the processes in Schwaighofen to ensure maximum parts availability combined with optimum efficiency for the service partner, who can call up the current status of any part at any time.

Holger Suffel, EvoBus Managing Director Sales: "The tremendous transparency and effectiveness of our new Logistics Centre has enabled us to substantially improve parts availability and, in turn, customer service. This has increased parts-supply efficiency by around 15 percent in the Logistics Centre."

EvoBus GmbH along with its 19 subsidiaries is responsible for European bus and coach production and the global sales of these products. With its Setra and Mercedes-Benz brands, EvoBus GmbH offers a complete range of vehicles from the minibus through the articulated bus to the double-deck coach, in the urban and regular-service bus as well as touring coach segments. In addition, EvoBus GmbH is the only bus and coach manufacturer to offer a full range of servicing, parts and service products under its Omniplus service brand exclusively and specifically for Mercedes-Benz and Setra buses and coaches.

Vehicle technical data S 411 HD

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Vehicle data

Length	10,160 mm
Width	2550 mm
Height	3760 mm
Wheelbase	4985 mm
Overhang	front: 2215 mm; rear: 2960 mm
Turning circle	17,300 mm
Tank capacity/diesel	approx. 410 litres
Tank capacity/AdBlue	approx. 42 litres
Perm. gross vehicle weight	18,000 kg

Engine and chassis

Engine	OM 501, 300 kW (408 hp), Euro 5
Total displacement	11,950 cc
Max. torque (at)	1900 Nm (1080 rpm)
Injection system	PLD
Transmission	GO 190 6-speed manual transmission
Front axle	Independent suspension, anti-roll bar
Driving axle	MB HO6 axle, anti-roll bar, i=2,846
Steering	ZF 8098, ratio 17.0 to 21.0

Braking system

Electronic Braking System (EBS),
pneumatic disc brakes,
Brake Assist (BA)

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Accessories and appointments

Seats

36, 4*, Setra Nimbus model

Driver's seat

GRAMMER MSG 90.6 PG, air-sprung

Air conditioning system

ComAir (roof-mounted), including air
conditioning for driver's area

Vehicle technical data S 415 HD

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Vehicle data

Length	12,200 mm
Width	2550 mm
Height	3550 mm
Wheelbase	6080 mm
Overhang	front: 2820 mm; rear: 3300 mm
Turning circle	21,140 mm
Tank capacity/diesel	approx. 490 litres
Tank capacity/AdBlue	approx. 56 litres
Perm. gross vehicle weight	18,000 kg

Engine and chassis

Engine	OM 457 LA, 335 kW (456 hp), Euro 5
Total displacement	11,967 cc
Max. torque (at)	2200 Nm (1100 rpm)
Injection system	PLD
Transmission	GO 240-8 PowerShift automated 8-speed transmission
Front axle	Independent suspension, anti-roll bar
Driving axle	MB HO6 axle, anti-roll bar, i=3,154
Steering	ZF 8098, ratio 17.0 to 21.0

Braking system

Electronic Braking System (EBS),
pneumatic disc brakes,
Brake Assist (BA)

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Accessories and appointments

Seats

44, 4*, Setra Nimbus model

Driver's seat

GRAMMER MSG 90.6 PG, air-sprung

Air conditioning system

TopAir including air conditioning
for driver's area

Vehicle technical data S 415 HDH

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Vehicle data

Length	12,300 mm
Width	2550 mm
Height	3860 mm
Wheelbase	5360 mm
Overhang	front: 2820 mm; rear: 2770 mm
Turning circle	19,220 mm
Tank capacity/diesel	approx. 565 litres
Tank capacity/AdBlue	approx. 62 litres
Perm. gross vehicle weight	24,000 kg

Engine and chassis

Engine	OM 457 LA, 315 kW (428 hp), Euro 5
Total displacement	11,967 cc
Max. torque (at)	2100 Nm (1100 rpm)
Injection system	PLD
Transmission	GO 210 6-speed manual transmission
Front axle	Independent suspension, anti-roll bar
Driving axle	MB HO6 axle, anti-roll bar, i=3,154
Trailing axle	RL75EC trailing axle
Steering	ZF 8098, ratio 22.2 to 26.2

Braking system	Electronic Braking System (EBS), disc brakes, Brake Assist (BA)	pneumatic	Page 26
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Accessories and appointments

Seats	46, 4*, Setra Nimbus model
Driver's seat	GRAMMER MSG 90.5 PG, air-sprung
Air conditioning system	TopAir including air conditioning for driver's area

Vehicle technical data S 416 HDH

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Vehicle data

Length	13,190 mm
Width	2550 mm
Height	3860 mm
Wheelbase	6250 mm
Overhang	front: 2820 mm; rear: 2770 mm
Turning circle	21,300 mm
Tank capacity/diesel	approx. 565 litres
Tank capacity/AdBlue	approx. 62 litres
Perm. gross vehicle weight	24,000 kg

Engine and chassis

Engine	OM 457 LA, 335 kW (456 hp), Euro 5
Total displacement	11,967 cc
Max. torque (at)	2200 Nm (1100 rpm)
Injection system	PLD
Transmission	ZF-AS Tronic automated 12-speed transmission
Front axle	Independent suspension, anti-roll bar
Driving axle	MB HO6 axle, anti-roll bar, i=2,846
Trailing axle	RL75EC
Steering	ZF 8098, ratio 22.2 to 26.2

Braking system	Electronic Braking System (EBS), disc brakes, Brake Assist (BA)	pneumatic	Page 28
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Accessories and appointments

Seats	50, 4*, Setra Ambiente model
Driver's seat	GRAMMER MSG 90.5 PG, air-sprung
Air conditioning system	TopAir including air conditioning for driver's area

Vehicle technical data S 417 HDH

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Vehicle data

Length	14,050 mm
Width	2550 mm
Height	3860 mm
Wheelbase	7110 mm
Overhang	front: 2820 mm rear: 2770 mm
Turning circle	23,310 mm
Tank capacity/diesel	approx. 565 litres
Tank capacity/AdBlue	approx. 62 litres
Perm. gross vehicle weight	24,000 kg

Engine and chassis

Engine	OM 502 LA, 370 kW (503 hp), Euro 5
Total displacement	15,930 cc
Max. torque (at)	2300 Nm (1080 rpm)
Injection system	PLD
Transmission	ZF-AS Tronic automated 12-speed transmission
Front axle	ZF independent suspension, anti-roll bar
Driving axle	MB HO6 axle, anti-roll bar, i=2,846
Trailing axle	RL75EC independent suspension
Steering	ZF 8098, ratio 22.2 to 26.2

Braking system	Electronic Braking System (EBS), disc brakes, Brake Assist (BA)	pneumatic	Page 30
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Accessories and appointments

Seats	52, 4*, Setra Ambiente model
Driver's seat	GRAMMER MSG 90.6 PG, air-sprung
Air conditioning system	TopAir including air conditioning for driver's area

Vehicle technical data S 431 DT

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Vehicle data

Length	13,890 mm
Width	2550 mm
Height	4000 mm
Wheelbase	6700 mm/1350 mm
Overhang	front: 2620 mm rear: 3220 mm
Turning circle	22,760 mm
Tank capacity/diesel	approx. 560 litres
Tank capacity/AdBlue	approx. 56 litres
Perm. gross vehicle weight	26,000 kg

Engine and chassis

Engine	OM 502 LA, 370 kW (503 hp), Euro 5
Total displacement	15,930 cc
Max. torque (at)	2300 Nm (1080 rpm)
Injection system	PLD
Transmission	ZF AS Tronic automated 12-speed transmission
Front axle	Independent suspension with wishbone, anti-roll bar
Driving axle	MB HO6 axle, anti-roll bar, i=3,154

Trailing axle	RAS/RL75A	Page 32
Steering	ZF 8098, ratio 22.2 to 26.2	
Braking system	Electronic Braking System (EBS), pneumatic disc brakes, Brake Assist (BA)	

Accessories and appointments

Seats	78, 4*, Setra Nimbus model
Driver's seat	ISRI 6860/875, swivelling
Air conditioning system	TopAir including air conditioning for driver's area

- 1893 Karl Kässbohrer founds the coach-building business
- 1951 The first bus with load-bearing body structure, the Setra S 8, is presented
- 1955 Setra presents the first independent air suspension at the IAA Motor Show in Frankfurt.
The Setra S 6 is presented at the Geneva Motor Show
- 1959 First modular Setra system and Europe's first articulated bus with load-bearing body structure
- 1963 The 10 series comprising six models is presented
- 1964 Setra is the first bus and coach manufacturer to adopt a retarder (a wear-free continuous brake)
- 1967 Setra introduces the 100 series with air-sprung independent front suspension as standard
- 1976 The 200 series with an innovative cross-flow ventilation system goes into series production. During its 15 years of production, this model series undergoes numerous innovations, including a three-axle high-deck touring coach specifically for the US market and Europe's first low-floor rural-service coach
- 1984 ABS becomes standard on all Setra buses and coaches

1991 Presentation of the 300 series with innovative integral mirror system and exterior design as well as ergonomic driver's area and standard-fit multifunction display for the first time Page 34

1992 The Setra S 315 HDH is voted "Coach of the Year 1993"

1996 The Setra S 315 NF is voted "Bus of the Year 96"

2001 Setra presents the TopClass 400, which sets new standards in terms of technology, design and equipment. The same year, this new coach generation is voted "Coach of the Year 2002" at "Busworld" in Kortrijk

2002 Presentation of the S 431 DT double-deck coach at the IAA International Commercial Vehicle Show in Hanover

The thousandth TopClass 400 vehicle is sold

2003 The S 417 for the North American market is officially unveiled at the UMA (United Motorcoach Association) event in February in Orlando, Florida

At the "Coach and Bus" exhibition held in Birmingham, England the right-hand-drive S 415 HD coach was shown for the first time at a trade fair

Two vehicles from the new ComfortClass 400 generation are presented at "Busworld" in Kortrijk, Belgium

Sale of the 1500th TopClass 400 coach

All TopClass 400 and ComfortClass 400 coaches are fitted with the ESP Electronic Stability Program as standard from October 2003 onwards

2004 The Setra S 415 GT is presented at the 60th IAA International Commercial Vehicle Show in Hanover Page 35

This fourth vehicle completes the line-up for the Setra ComfortClass 400

2005 Early March marks 50 years since the premiere of the Setra S 6 compact bus at the Geneva Motor Show in 1955

In March, travel operator Imken Touristik based in northern Germany takes delivery of the 3000th TopClass 400 model, a Setra S 415 HD

In June, the 10,000th model from the MultiClass range - an S 315 UL - is handed over to the customer, Ludwigsluster Verkehrsgesellschaft mbH based in the German state of Mecklenburg-West Pomerania, during an event designed to demonstrate the reliability and ride comfort of the S 315 NF low-floor bus hosted by the Upper Bavarian Regional Transport authority in Berchtesgaden

In June, the 1000th model from the ComfortClass 400 range - a Setra S 415 GT - is delivered to bus and coach operator Birkmaier

In October, the brand unveils two models from its new generation of MultiClass 400 rural regular-service buses - the Setra S 415 UL and Setra S 417 UL - at the "Busworld" trade fair in the Belgian town of Kortrijk

Premiere of the new proximity control and Continuous Braking Limiter safety systems in the TopClass 400 and ComfortClass 400 touring coaches

2006 In early February the 1500th Setra coach was delivered to Belgium. This was an S 416 HDH model with a glass roof

On March 7 the 5000th touring coach in the TopClass 400 and ComfortClass 400 series was delivered. This vehicle, an S 416 HDH with a glass roof, proximity control and 50 comfortable reclining seats was despatched to the Swedish touring coach operator Stigen Buss AB in Stigen

A historic landmark was celebrated by the most successful Setra to date, the 200 series, which was launched 30 years ago. At the time it was voted "Coach of the Year 1977" by the European specialist press. In 15 years (1976 - 1991), 27,680 units in total of these models (Optimal, International, Rational, Regional and Communal) with 33 variants were sold

25 years ago Setra presented its first double-decker coach, the S 228 DT (Double-decker Tourism)

The Setra brand presents its current product range of ten buses and coaches at the 61st IAA International Commercial Vehicle Show in Hanover

The highlight is the world debut of the rural-service low-floor buses in the MultiClass 400 series

The market launch of the low-floor generation completes the changeover of the entire model range to the 400 series

Around 23,000 touring coaches and rural-service buses in the preceding 300 series were sold

2007 Setra presents two S 417 models, part of the TopClass 400 touring coach generation, at the United Motorcoach Association UMA in New Orleans, Louisiana. The highlight of this year's show is the 500th Setra S 417 to be produced for and sold in the North American and Mexican market. Setra delivers the 90,000th vehicle since the brand was founded in 1951. The S 416 HDH, part of the TopClass 400 touring coach generation, was handed over in February to the coach operator Arnold Reisen in

Dietmannsried near Kempten in the German Allgäu region

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Setra presents the new TopClass 400 at Europe's largest bus and coach show "Busworld" in Kortrijk, Belgium

The 500th Setra S 411 HD is handed over to coach operator Fischwenger, Austria

The 500th Setra S 431 DT is handed over to coach operator Demy Cars, Luxemburg

The new Setra Customer Centre is inaugurated as part of the Setra Show 2007 in Neu-Ulm

2008 Setra presents two US versions of the S 417, part of the European TopClass 400 generation of touring coaches, at the United Motorcoach Association UMA in San Francisco, California