



Setra at the Busworld Kortrijk

Press Information

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The new Setra ComfortClass 400

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The new Setra ComfortClass 400 has its world premiere at Busworld 2009 in Kortrijk. Working closely with the design, production and sales departments, the developers have implemented more than 30 new features in this touring coach model series. The resulting vehicles are not only better-looking than ever, thanks to the updated design treatment of the front corner elements, but also feature an even more comprehensive array of technical refinements including a significantly enhanced safety package.

Commenting on the important role played by the ComfortClass 400 within the Setra product range, Setra brand spokesman Werner Staib said: "The new features of the TopClass 400 have been very well received by our customers; we therefore see excellent prospects for applying the same philosophy to the new ComfortClass 400 and thereby securing our long-term position in the premium segment. What's more, these measures underline how important the ComfortClass is for us: in 2008, sales of the S 415 GT-HD alone amounted to 300 units making it the best-selling model in the entire Setra product range."

Safety package with Front Collision Guard (FCG)

Safety features were central to the development of the new ComfortClass 400 which is represented on the Setra stand at Kortrijk by an S 415 GT-HD as well as a three-axle S 416 GT-HD/3. An S 415 GT on show in the open-air section of

"Busworld" is also equipped with the latest technical highlights. These include the Front Collision Guard (FCG) which can be found in the left-hand-drive versions of the S 415 GT, S 416 GT, S 415 GT-HD, S 416 GT-HD and S 417 GT-HD models of the new ComfortClass 400. The FCG functions as an underride guard in accordance with ECE-R 93 and also meets the requirements of the pendulum impact test used to assess the crashworthiness of a vehicle framework structure in accordance with ECE-R 29. In the event of a front-end collision, the FCG module with its integrated impact-absorbing structure pushes the driver's area rearwards. Crash tests have confirmed the efficacy of this safety system which offers significantly enhanced passive safety for the driver and tour guide.

Light elements with high-efficiency LED technology

The engineers also focused on active safety with the result that a new light element in the front section illuminates the junction area ahead of the vehicle when turning. Furthermore, the new ComfortClass 400 coaches are equipped with light and rain sensors which respond to changes in lighting and weather conditions and automatically activate the headlamps and windscreen wipers when necessary.

The two marker lights at the top corners of the front of the vehicle feature LED technology for a long service life. The licence plate light and side position lights also use this highly efficient and reliable technology.

A new bank switching system for the highest windscreen-wiper speed setting slows the wipers down as they approach the reversal point; this brings about a significant reduction in the noise level. But this is not the only new feature in this area. The rubber moulding round the 3-mm thick heat-insulating windscreen has been done away with. As well as contributing to the distinctive appearance of the new ComfortClass 400, this change helps to save fuel and reduce wind noise.

Cockpit with 3D instrument cluster and colour display

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The drivers also benefit from the changes implemented in the new ComfortClass 400. Their workplace is equipped with a new multifunction steering wheel which has integrated button functions and is optionally available as a leather-trimmed version in carbon fibre, bird's-eye maple or burl wood. The instrument panel with its new switch layout is also optionally available with a wood-effect or carbon-fibre-effect finish. The new 3D-effect instrument cluster matches that of the TopClass 400 and now has a colour display which shows information such as the status of each of the vehicle flaps and also features an integrated trip computer with fuel consumption display.

Camera for entrance II

Travelling in the passenger compartment is now even more enjoyable and comfortable. High-quality LED technology is optionally available for both the aisle lighting and the reading lamps above each seat. And if the driver or tour guide chooses to show a film or a video, the electrically folding 19-inch monitors mounted on the ceiling ensure a clear view from every row. What's more, camera monitoring of entrance 2 makes it easy for the driver to keep an eye on passengers boarding and alighting - another significant plus for passenger safety.

Trailing axle with individual wheel suspension

The stylish bodywork of the new ComfortClass 400, which is equipped with a weight-optimised roof-mounted air-conditioning system, also conceals a number of attractive new features. These include the electronic level-control system (ENR), which was previously used only in TopClass 400 vehicles, as well as an optimised front axle for enhanced ride comfort.

The wheels of the trailing axle of the three-axle versions of the ComfortClass 400 now have independent suspension which results in a weight saving of 150 kilograms. All these measures ensure that the new ComfortClass 400 vehicles offer

passengers an even smoother ride. Furthermore, a new generation of the Electronic Braking System (EBS-1C) delivers the optimum brake pressure to each axle. And with the Intarder 3, even greater braking power is available for the LA engines.

The S 415 GT-HD on show in Kortrijk is equipped with an OM 457 LA engine with 315 kW (428 hp) and the automated eight-speed GO 240-8 PowerShift transmission which was specially developed for buses and coaches and which is notable for its compact design and low weight.

The output of the three-axle S 416 GT-HD with the same engine/transmission combination is 335 kW (456 hp). The S 415 GT, on show in the open-air section, has an OM 457 hLA engine with 300 kW (408 hp) and a GO 190 power-assisted 6-speed manual transmission.

ComfortClass 400 range and features

During the development of the ComfortClass 400 in 2003, Setra took into account the lifting of the legal restriction which limited the length of buses and coaches to twelve metres. The S 415 GT and S 415 GT-HD measure 12,200 mm in length, the S 416 GT is 13,040 mm, the S 416 GT-HD 13,020 mm and the S 417 GT-HD 14,050 mm. The S 419 GT-HD is 14,960 mm. This use of this length concept for touring coaches which double up as private-hire vehicles yields noticeably more interior space while bringing impressive improvements in economy and comfort. The bodyshell design featuring annular frame members gives the vehicle a high degree of torsional strength. As with the TopClass 400 touring coaches, the body framework is protected by cathodic dip painting. At the front end, the vehicles are 60 mm longer than the previous models while the driver's area has been extended by another 140 mm. The front entrance is also 70 mm wider thanks to the longer nose section. This length concept makes it easier for passengers to board and alight at the front door. The designers have managed to gain another 70 mm to provide more generous seat spacing on the right in front of the rear door. Despite the greater length of the vehicles, it has been possible to increase the angle of approach to 7.65° – a real plus when negotiating narrow mountain

passes or when entering bus-stop bays.

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The 35 new features of the new ComfortClass 400 at a glance:

- Front Collision Guard (FCG)
- Bank switching for windscreen wipers
- Heat-insulating windscreen (3 mm)
- Deletion of rubber moulding around windscreen
- Rain/light sensor
- New cornering light function
- New-look front with corner elements
- Multifunction steering wheel
- Carbon-fibre/leather steering wheel (SE)
- Bird's-eye maple/leather steering wheel (SE)
- Burlled wood/leather steering wheel (SE)
- Leather shift/selector lever (SE)
- 3D-effect instrument cluster
- Colour display
- Individual flap position sensors with display in instrument cluster
- Wood-effect instrument panel (SE)
- Carbon-fibre-effect instrument panel (SE)
- Bird's-eye-maple-effect instrument cluster (SE)
- Intarder 3 with increased braking power for LA engines (SE)
- Camera for entrance 2
- Fuel consumption display (SE)
- LED aisle lighting

- LED reading lamps (SE)
- LED handlamp with charging point (SE)
- Professional-quality vehicle toolkit (SE)
- New switch layout in cockpit
- New-generation Electronic Braking System (EBS-1C)
- Electronic level control (ENR)
- Independent wheel suspension on trailing axle of three-axle models
- GO 240-8 PowerShift for all models (excluding S 419 GT-HD) (SE)
- Weight-optimised roof-mounted air conditioning system
- LED marker lights and position lights
- LED licence plate light
- Optimised front axle
- 19-inch monitors
- New VOSS 232 air ducting

SE = special equipment

S 415/416 H: the world premiere of the MultiClass 400

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- **New high-floor bus as classic double-earner**
- **S 415 NF: the winner in the bus sector**
- **S 417 UL with wheelchair lift at entrance II**

New high-floor bus as classic double-earner

Another Setra product having its world premiere at Busworld 2009 in Kortrijk is the new high-floor S 416 H bus. This high-floor bus is a new MultiClass 400 model which will be available in the future in the form of 12 and 13-metre variants with two axles (S415/416). The advantage of the new rural-service bus, which will be available from March 2010, is obvious. With its aisle at about 1040 mm above the road, it has been possible to design the high-floor vehicle with an attractive luggage capacity of up to 7.9 m³. This makes it a classic double-earner for bus and coach operators. A rural regular-service bus from Monday to Friday, it is ideally suited for weekend excursion work. The vehicle premiered in Kortrijk can seat 56 passengers. It is equipped with an OM 457 hLA engine developing 260 kW (354 hp) and a GO 190 transmission with a VR 115 retarder.

S 415 NF: the winner in the bus sector

The second representative of the MultiClass 400 which the Setra brand is showing in Belgium is a two-door S 415 NF. Introduced in 2006 to extend the Setra product range in the regular-service and excursion sectors, the success of this low-floor bus was recognised officially when it was voted "Bus of the Year 2009" by a team of European judges who assessed the competing vehicles on the basis of their suitability for everyday use as well as their build quality, design concept and economy.

The S 415 NF on show on the Setra stand can seat 40 passengers and includes features such as air conditioning for the driver's area, an enhanced version of the 32-kw roof-mounted air conditioning system for the passenger compartment and pneumatically controlled outward swinging doors.

S 417 UL with wheelchair lift at entrance 2

The S 417 UL with its inclined front end, integral exterior mirror system, two outward-swinging doors and a Braun wheelchair lift at entrance 2 can be found in the open-air section of the show site. At 14 metres in length, the bus can seat a total of 61 passengers with the seating configuration which features in the show vehicle.

The MultiClass 400 range

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

With its length of just 10.80 metres, the S 412 UL is the most manoeuvrable model and is specifically design for regular-service operations with its 45 "Transit" seats manufactured in-house. Its compact length makes it ideal for cost-effective regular-service routes in topographically difficult regions with narrow and steep passes. The other vehicles in the MultiClass 400 series are the 12.20-metre-long S 415 UL, the 13.04-metre-long S 416 UL, the S 417 UL measuring 14.05 metres and the 14.98-metre-long S 419 UL. Plenty of luggage capacity, comfortable seats and a versatile range of appointments, such as a galley, toilet and air conditioning system, mean that these vehicles offer the ideal combination of attributes 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. Tailor-made for regular-

service operations with large passenger flows and varied applications, these two vehicles are available with innovative door solutions, cockpit variants, different destination displays and numerous seating options.

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Also notable for their flowing forms and dynamic lines, the low-floor models are designed for regular-service routes where the highest standards of passenger comfort and vehicle availability are called for. They offer optimum accommodation for passengers of all ages including wheelchair users.

Two TopClass 400 touring coaches in Belgium

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- **S 431 DT: the flagship with Active Brake Assist (ABA)**
- **S 416 HDH: the economical variant**

The TopClass 400 range

The "flagship" of the Setra TopClass 400 can be seen in the open-air section this year. Measuring 13.89 metres in length and with a height of four metres, the double-deck S 431 DT represents the top of the Setra touring coach range.

Various aspects of active and passive safety have been redesigned and improved. New features include the transverse-braced bodyshell with its frame members which result in higher torsional stiffness and thus give the vehicle better directional stability. The 2550-mm width of the vehicle is an additional factor which ensures stable handling. The Electronic Stability Program (ESP), Lane Assistant (SPA) and Active Brake Assist (ABA) also contribute to the overall safety of the vehicle and passengers.

The vehicle on show in Belgium can accommodate 78 passengers in comfortable "Nimbus" individual reclining seats. A galley with a 40-cup coffee maker is integrated in the lower deck. The Coach 2000 Professional radio system delivers a very pleasant listening experience and features individually adjustable loudspeakers above the seats.

S 416 HDH: the economical variant

The S 416 HDH which Setra is showing at Busworld 2009 is the latest member of the TopClass 400 family of touring coaches. Designed as an economical variant offering optimum seating capacity, this model has been available since autumn 2003. The S 416 HDH comes with every conceivable comfort feature as well as a large luggage capacity to provide an outstanding touring experience. The glass-roofed three-axle model on show in Belgium has a leather steering wheel with an

aluminium insert, 34 "Ambiente" individual reclining seats and a new six-part lounge section with "club table" lighting. Additional comfort features include a galley with a Jura coffee maker and a hot-dog heater, electrically folding 19-inch flat-screen monitors and a multifunction aerial for the radio, telephone and navigation systems.

The show vehicle is also equipped with the latest safety systems, including the Electronic Stability Program (ESP), Lane Assistant (SPA) and adaptive cruise control (ART) with Active Brake Assist (ABA). Furthermore, the vehicle is equipped with an electronic level control system (ENR).

TopClass 400 features

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-friendly seats, multimedia systems, a range of kitchen appliances and the unique glass roof above the centre aisle. The ergonomically designed cockpit is a blend of elegant practicality and aesthetics.

European journalists from the motoring press had a host of good reasons to vote the TopClass 400 "Coach of the Year 2002" just eight months after its debut. The panel of judges cited its impressive technology and a remarkable design that struck a perfect balance between form and function as just two of the reasons for their decision. Since then, the TopClass 400 has picked up many more international accolades and awards. A case in point was the "Commercial Vehicles of the Year 2007" readers' poll, in which a total of 8500 participants voted the Setra TopClass 400 the winner in the "High-deck touring coach" category for the third time.

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 adaptive cruise 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. As the warning is triggered when the vehicle reaches the outside edge of the lane marking, the driver is given the greatest possible scope for taking remedial action. Lane Assistant is activated automatically at speeds above 70 km/h.

At the end of last year, Setra delivered the first S 416 HDH equipped with Active Brake Assist (ABA). This system reacts to slower moving vehicles in front by providing an escalating series of warnings and initiating emergency braking if there is a risk of a collision. It operates in combination with the adaptive cruise control (ART) function, whose sensors are used to detect moving "obstacles" ahead of the vehicle. The system therefore actively helps to prevent head-to-tail collisions, meaning that it can save lives.

The TopClass 400 generation comprises the 10.16-metre-long S 411 HD club coach, the 12.2-metre S 415 HD, the 12.3-metre S 415 HDH with three axles, the 13.19-metre three-axle S 416 HDH and the 14.05-metre S 417 HDH. The flagship of this Setra premium range is the 13.89-metre S 431 DT double-decker coach. Setra introduced the S 417 – which was specifically designed to meet North American standards (in terms of vehicle dimensions, emissions standards and customer requirements, for example) – in the US market in the spring of 2003.

Setra exhibits at “Busworld 2009” in Kortrijk, Belgium

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Setra S 431 DT

Engine: OM 502 LA, 370 kW/503 hp (Euro 5)

Number of seats: 78 + 1 + 1

Length x Width x Height: 13,890 x 2550 x 4000 mm

Setra S 416 HDH

Engine: OM 457 LA, 335 kW/456 hp (Euro 5)

Number of seats: 40 + 1 + 1

Length x Width x Height: 13,190 x 2550 x 3860 mm

Setra S 415 GT-HD (world premiere)

Engine: OM 457 LA, 315 kW/428 hp (Euro 5)

Number of seats: 49 + 2 + 1

Length x Width x Height: 12,200 x 2550 x 3620 mm

Setra S 416 GT-HD/3 (world premiere)

Engine: OM 457 LA, 335 kW/456 hp (Euro 5)

Number of seats: 48 + 2 + 1

Length x Width x Height: 13,020 x 2550 x 3620 mm

Setra S 415 GT (world premiere)

Engine: OM 457 hLA, 300 kW/408 hp (Euro 5)

Number of seats: 53 + 2 + 1

Length x Width x Height: 12,200 x 2550 x 3350 mm

Setra S 416 H (world premiere)

Engine: OM 457 hLA, 260 kW/354 hp (Euro 5)

Number of seats: 56

Length x Width x Height: 13,040 x 2550 x 3175

Setra S 417 UL

Engine: OM 457 hLA 300 kW/408 hp (Euro 5)

Number of seats: 61 + 1 + 1

Length x Width x Height: 14,050 x 2550 x 3175 mm

Setra S 415 NF

Engine: OM 457 hLA, 220 kW/299 hp (EEV)

Number of seats: 40 + 1

Length x Width x Height: 11,950 x 2550 x 3049