SCANIA TOURING HD 12,1 TEST
BEST CONSUMPTION
**BusToCoach**

Innovation in European Transport

**MAGAZINE ON-LINE** linked www.bustocoach.com - November 2017

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**FLASH NEWS**
Live from the transport sector.

**HIGH TECH STORE**
Allison, ABB, ZF, Thermo King.

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You can access through the site, selecting the USED directory or going directly to the link www.bustocoach.com/en/content/announcements

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European on-line magazine

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Internet: www.bustocoach.com

Registration: Tribunale di Milano n. 140 del 16/03/2012

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BusToCoach® Magazine is a monthly e-mail delivered to 12,000 European operators in the sector of bus passenger transport.

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The Dutch passenger transport company Connexxion has placed an order for 62 VDL MidCity Electric buses and 40 VDL Citea LLE-120 Euro 6 buses. All the vehicles will be used in the ‘Noord-Holland Noord’ province. This concession will become operational by the end of July 2018. “With the introduction of MidCity Electric, the smaller buses in Noord-Holland Noord are now also zero emission”, said Eric van Eijndhoven, Public Transport Director at Connexxion. “The goal is to have half of all buses run zero emissions in the Noord-Holland Noord concession area by 2025”.

VDL Bus & Coach is currently developing the MidCity Electric model. This fully electric minibus with a length of 8 mt features a 87 kWh battery with a range of up to 220 km, as stated by the manufacturer. This new model will be introduced in 2018.

**MID CITY ZERO-EMISSION**

**MORE OTOKAR BUSES FOR MALTA**

The ALESA-ALSA transport company based in Malta trusted again in the Otokar brand. After the Vectio C bus model specially featured by the Turkish manufacturer for the narrow streets of the island, the Maltese company acquired further buses from the Otokar range. This time in a longer size with the Kent C version. 28 of these vehicles are in service since last summer on the busiest lines of the island and on the routes for the airport. The buses are fitted with luggage areas and USB sockets. The 6-cylinder engine (280 hp) are coupled with a Voith Diwa automatic transmission. Otokar then worked closely with the Maltese operator to set up a preventive service and a supply program for regular delivery of spare parts tailored to Malta’s island situation.

**SKYLINER FOR BALTOUR**

The renowned Neoplan double-decker is celebrating two milestones: 50 years and 5,000 units delivered. The owner of the milestone coach is Baltour Group which received the keys under the spotlight of Busworld Europe 2017 (Kortrijk, October 20-25). Elegant and sober, 64 Exclusive Plus seats with central armrests and leg rests, diesel Euro 6 engine (500 hp), numerous driving assistance systems, including EBA (Emergency Brake Assist) and MAN EfficientCruise based on topography detected by gps in conjunction with Ecoroll. Baltour Group connects 17 Italian regions and 23 European countries with over 500 destinations, carrying more than 4 million passengers a year. The fleet currently includes 93 vehicles, 66 of which are MAN and Neoplan branded.

**50 YEARS OF HISTORY**

On the 50th anniversary of the Neoplan Skyliner, MAN Truck & Bus offers memories and images of this model around the world. Like the 42 Neoplan Skyliners used as shuttle buses to Golden Nugget hotels’ casinos in the 1980’s. Twenty vehicles have run the transfer route from Los Angeles to Las Vegas since 1981, with 22 more starting shuttle services between New York and Atlantic City from 1983 onwards. The gold-coated windows dimmed the intense sunlight and reduced heating levels in the interior. There was also an especially large air-conditioning system on board, which was not powered in the usual way by the vehicle engine but had its own motor. Another innovation was the use of Nirosta (stainless steel) on the body. The interior equipment was also impressive. A Swiss company produced a custom range of exclusive seat covers specially for these vehicles in golden colour. Detroit V8 engines and Allison automatic gearboxes provided the power.

**VOLVO HYBRID BUSES IN SINGAPORE**

The Land Transport Authority (LTA) of Singapore has placed an order for 50 Volvo 7900 Hybrid buses. The vehicles, which are powered by a diesel engine as well as battery power, will be rolled out gradually for service by the second half of 2018. The Swedish manufacturer pointed out: “The Volvo 7900 Hybrid bus uses 30 per cent less fuel and has a correspondingly lower climate impact than a diesel bus, and just half the nitrogen oxide and particle emissions”.

To date, Volvo Buses has now sold more than 3,000 hybrids worldwide.

**FLASH NEWS**

**MORE OTOKAR BUSES FOR MALTA**

The ALESA-ALSA transport company based in Malta trusted again in the Otokar brand. After the Vectio C bus model specially featured by the Turkish manufacturer for the narrow streets of the island, the Maltese company acquired further buses from the Otokar range. This time in a longer size with the Kent C version. 28 of these vehicles are in service since last summer on the busiest lines of the island and on the routes for the airport. The buses are fitted with luggage areas and USB sockets. The 6-cylinder engine (280 hp) are coupled with a Voith Diwa automatic transmission. Otokar then worked closely with the Maltese operator to set up a preventive service and a supply program for regular delivery of spare parts tailored to Malta’s island situation.

**ELECTRIC COACH UNDER DEVELOPMENT**

The first 100% electric coach for the American market. Van Hool is working on it in collaboration with the American company Proterra specializing in battery technology. The model is the CX45E electric coach. Van Hool says: “It will have a range of about 300 km and will be used mainly for commuter transfers and / or for regular transportation of people for short distances. The vehicle will be designed at the headquarters of Koningshooikt, Belgium, where the first prototypes will be built. Like the CX35, the CX45 is currently being built in Skopje, Macedonia, so the CX45E will also be produced in the same location.”

Van Hool has a long tradition on the North American market through its thirty-year partnership with the exclusive partner ABC Bus Companies Inc.

**SKYLINER FOR BALTOUR**

The renowned Neoplan double-decker is celebrating two milestones: 50 years and 5,000 units delivered. The owner of the milestone coach is Baltour Group which received the keys under the spotlight of Busworld Europe 2017 (Kortrijk, October 20-25). Elegant and sober, 64 Exclusive Plus seats with central armrests and leg rests, diesel Euro 6 engine (500 hp), numerous driving assistance systems, including EBA (Emergency Brake Assist) and MAN EfficientCruise based on topography detected by gps in conjunction with Ecoroll. Baltour Group connects 17 Italian regions and 23 European countries with over 500 destinations, carrying more than 4 million passengers a year. The fleet currently includes 93 vehicles, 66 of which are MAN and Neoplan branded.
ALEXANDER DENNIS IN NEW ZEALAND

Rotorua, New Zealand. At the annual conference of Bus & Coach Association (October 4-6), the British manufacturer Alexander Dennis (ADL) put on show the Elite executive touring coach. The vehicle is one of the eight units ordered by Ritchies Transport Holdings, New Zealand’s largest coach operator. The 13.5m Elite coaches are built on Scania K440 chassis and have a capacity for up to 53 passengers. The vehicles delivered to New Zealand have been tailored to the customer’s specific requirements. Of the eight vehicles ordered, two specification variants exist: one with a near side centre exit door plus centre toilet and a second variant featuring a rear saloon floor mounted toilet to facilitate passenger access and maximise luggage capacity. A brand new HVAC climate control system and single glazing conform to New Zealand’s weight regulations.

DAILY SCHOOLBUSES IN LITHUANIA

Delivered to Vilnius, Lithuania, 51 school buses awarded to Iveco Bus by the Lithuanian Ministry of Education. The Iveco Daily school bus is designed for primary and secondary school students, with particular attention to children with reduced mobility, for which special equipment is provided. The total ground mass is up to 5 tons and the engine is Iveco Euro 6C (150 hp) with a 350 Nm torque. On board there are 19 seats. The Iveco Daily school bus complies with the European Union’s safety and quality requirements and at the same time have been modified to adapt to road conditions in Lithuania. It’s fitted with lower steps and a special light warning system that informs the driver when the kids get off the bus. They are also equipped with the Alcolock device.

METHANE POWERED INTERCITY BUSES

Madrid-based transport company ALSA has recently acquired eight Magnus.E CNG buses bodied by Castrosua. The vehicles are built on Scania chassis with Class II equipment. They will be used for services provided to the Madrid Consortium of Transportation. Long 15 meters with two doors, they offer 63 seats and space for 40 standing passengers in addition to a seat for people with reduced mobility. Onboard features include air conditioning, anti-fog, convector heating, Led indoor lighting, USB sockets, fire extinguishing system. The driver area has a dedicated door, sliding window, pneumatic seat with armrest, radio with USB socket.

RESTAURANT ON WHEELS

Discovering the Malaysian metropolis while tasting a dish in a moving restaurant. The city tour with gastronomic experience included is offered by the Duck & Hippo bus operator on a MAN double-decker bus developed with the local Soon Chow manufacturer. The top floor houses a 32-seat dining room, the kitchen is located on the lower floor. Local specialties are served at noon, Indochinese dishes in the evening. The structural base of the Gourmet bus is a two-axle MAN A69 chassis with a Euro 5 engine of 250 hp (184 kW). The vehicle is fitted with EBS, ABS, ECAS, with megaphones for sound announcements, audio system and WiFi access. The MAN Gourmet is not the only bus in Singapore with the Lion emblem. Tourists can also discover the city on board the many hop-on / hop-off buses and two historic MAN bus trolleys.

TRAMINO ON THE PODIUM

The Solaris Tramino Leipzig tram has been awarded a prestigious engineer Ernest Malinowski Award at the TRAKO International Railway Industry trade show in Gdańsk, Poland, where the vehicle was displayed last September. The Solaris Tramino Leipzig is 37.63 meter long and it consists of four modules. The tram presented at the Gdańsk’s trade show is one of the 23 that the Leipziger Verkehrsbetriebe (LVB) has ordered since 2015. The frame agreement includes the delivery of up to 41 trams until 2020. The 2.3-meter wide tram is equipped with 4 classic driving bogies and one non-powered Jacobs type bogie. The tram track width amounts to 1458 mm, specific for the LVB network. On board there’s a room for 75 seats and 220 passengers.

WITH PANTOGRAPH CHARGE

AN order for five additional VDL Citea SLF-120 Electric buses has been placed by Stadtwerke Münster. The vehicles with a total passenger capacity of 80 people will be fitted with a pantograph system. Unlike the first five units, the pantograph is now positioned on the front axle. This change is a response from VDL Bus & Coach to recommendations from the VDV and the ISO standards. In accordance with the requirements in Münster, the vehicles will be fitted with a 180 kWh battery pack thereby further increasing the operating range and ensuring greater flexibility. The new vehicles will be equipped with a Siemens central motor, which further reduces the vehicle maintenance costs. To date, electric vehicles from VDL Bus & Coach have clocked up more than 4,500,000 real operating kilometres on the road.
The first factory outlet of commercial vehicles was inaugurated in Italy. On this occasion, Iveco has presented the new Daily Blue Power range.

AN exclusive showroom for the Daily range. It was inaugurated on October 4 at the Iveco plant in Suzzara (Mantova), the Daily LCV Production Center. The Daily Center is operated by Officine Brennero, Iveco’s owned dealer in Verona. “With the opening of the new Daily Center,” pointed out the manufacturer, “Iveco does not only aims for the local area, but also has the ambition to create an international showcase for customers from all over the world that will visit the factory and will live a real full immersion into the Daily world. 20% of production is destined for Italy, while the remaining 80% targets foreign markets in order to meet customer needs in 91 countries.”

The Daily Center is open from Monday to Friday (9-18.30) and on Saturday (9-12.30). On this occasion, Iveco has presented the new Daily Blue Power family, featuring sustainable technology. It offers freedom of choice between three technologies: Daily Hi-Matic Natural Power: the first compressed natural gas light commercial vehicle with an eight-speed automatic gearbox. It is equipped with a 3-liter F1C engine (136 hp and 350 Nm of torque) which complies with the Euro VI/D standards. The Daily Euro 6 RDE Ready model: the first LCV ready for 2020 real driving emissions regulations. It is powered by a 2.3-liter Fiat Iveco engine, which was completely redesigned in 2016.

Finally, the Daily Electric model with an extended range of up to 200 km in real urban conditions and an optimized battery for all weather (it takes two hours to recharge in fast mode). It is equipped with Eco-Power driving mode, regenerative braking strategies and advanced connectivity services.

BYD, Cummins, Scania and Volvo Bus are joining the Global Industry Partnership to promote the diffusion of soot-free bus fleets. A partnership between industries aimed at promoting ‘clean’ public transportation. This is the Global Industry Partnership, among whose members we find the bus manufacturers Scania, Volvo Bus, BYD and the engine builder, Cummins. The aim is to spread soot-free bus fleets. The initiative is led by the International Council on Clean Transportation (ICCT) and UN Environment in collaboration with C40 Cities Climate Leadership Group and Centro Mario Molina-Chile.

The companies involved are committed to making these vehicles available no later than 2018 in twenty major cities in Africa, Asia, Latin America and Australia. In this regard, the four manufacturers will release through their websites a complete product portfolio available in each city and will report the number of soot-free buses sold in each year. Cities will, in turn, supply engine fuels that meet Euro 6 or US 2010 emission standards, including diesel fuel containing no more than 10 ppm sulfur fuel and other alternative low-carbon fuels such as biodiesel, gas and ethanol.

Soot free is defined as including any engine that meets Euro VI norms first established in Europe or EPA 2010 norms first established in the United States, and any diesel engine with a diesel particulate filter, gas-powered engine, or a dedicated electric drive engine. Less than 20% of all buses sold in the world meet these requirements and the majority are diesel powered.

Older generation diesel technology produces high levels of black carbon emissions, which is a significant component of fine particulate matter (PM2.5) air pollution and is linked to a number of negative impacts on human health and climate changes. The cleanest buses today can reduce these emissions by over 99 percent.
IRIZAR i8 IS COACH OF THE YEAR

The top-of-the-range Irizar i8 Integral coach was awarded the prestigious title of “Coach of the Year 2018”

It’s the first time that Irizar gets on “Coach of the Year” podium with a fully own vehicle, the i8 Integral, which was awarded the title Best Coach of the Year 2018. The award ceremony took place, as usual, at Kortrijk Busworld.

To convince members of the jury of the Association of Commercial Vehicle Editors, composed of specialist journalists from the most prestigious magazines in 22 European countries, have been, in addition to its design, the performance during the Euro Coach Test and its turning circle.

Euro Coach Test trials took place for the first time in Sweden, at Linkoping, 240 kilometres south of Stockholm. Six different coaches have undergone the test: Irizar i8 Integral, Neoplan Tourliner, Scania Interlink HD and the VDL Futura FDD2-141 double-decker. The excellent performance and response of the vehicle braking and acceleration tests and the driving tests on a mixed 30 km route between dual carriageway and secondary road have given Irizar i8 the victory.

“The first place was even more deserved,” pointed out Irizar, “considering that the i8 submitted was a three-axle, 14 metre version and was competing with three other 12 m, two-axle vehicles, which are considerably lighter.”

The i8 model is a top-of-the-range coach of the Irizar family. Introduced in 2015, it is available in four lengths (12.4, 13.22, 14.07 and 14.98 mt) in the integral or chassis version.

More articles about Irizar:
www.bustocoach.com/en/node/487/articoli-costruttore-europa

CROSSWAY IS THE BEST LOW ENTRY BUS

It was awarded by the jury of the International Bus & Coach Competition. It was the best for driveline, manoeuvrability, comfort and total cost of ownership.

The Iveco Bus low-entry intercity bus, the Crossway LE, was voted the best at the International Bus & Coach Competition (IBC) that took place last June in Munich, Germany.

The 2017 edition, dedicated for the first time to low-entry buses, involved four European manufacturers. After a series of rigorous tests conducted by a jury of international journalists, the Crossway LE was voted the best in terms of driveline, manoeuvrability, comfort and total cost of ownership (TCO). The jury was very appreciative of the comfort of both the driver’s space and the passengers’ compartment.

The IBC version offered seating for 43 passengers and a dedicated wheelchair area. The comfort during the driving test in interurban areas was equally appreciated. It should be noted that the driver’s seat of the Crossway has been further improved on comfort thanks to the 10 cm extension of the front overhang. Also the ergonomics of the driver’s working environment has been further improved with the new instrument panel.

The international members of the jury were impressed by the performance of the engine and automatic gearbox. The Crossway LE is available with a choice of two engines (Tector 7 and Cursor 9) with power ranging from 286 to 360 hp.

“The Crossway range, including the low-entry version, boasts nearly 30,000 operating units across Europe and high sales in France, Italy, Germany, Austria and the Czech Republic,” stated Iveco Bus. “These are extremely popular vehicles among private operators and public transport companies, including customers with large fleets, such as Deutsche Bahn with more than 1,000 Crossway buses.”

More articles about Iveco Bus:
www.bustocoach.com/en/node/486/articoli-costruttore-europa
HIGH TECH STORE

The manufacturer of Friedrichshafen is testing a city bus equipped with the CeTrax electric central drive, presented for the first time at the 2016 IAA in Hannover. With a maximum output of 300 kW and a maximum torque of 4,400 Nm, Cetrax is suitable for buses of all sizes, both low-floor and high-floor. With CeTrax, the bus accelerates from standing without any interruption of the torque and comfort is ensured by much lower chassis vibrations and a quieter ride than conventional engines. «CeTrax», points out Jochen Witzig, responsible at ZF for bus transmission system development, «can be mounted on existing platforms without any modifications to the chassis, axles or differentials. Vehicle manufacturers thus save on development and installation costs».

ALLISON 9 SPEED

Allison Transmission has announced its first nine-speed model at the North American Commercial Vehicle Show in Atlanta. With its deep first gear ratio and industry-leading ratio coverage, the Allison nine-speed transmission provides significant fuel savings as the highly-efficient gear train allows the torque converter to lock up early in first gear. Additionally, the nine-speed includes an integral engine stop-start system that provides immediate transmission engagement and vehicle hold while the engine is restarted. Providing value for a variety of applications, the nine-speed model is ideal for distribution trucks, rental and lease trucks, and school buses.

CHARGING SYSTEMS

For charging electric buses in depots, ABB offers a solution that incorporates smart charging features with a future-proof and modular design, safe and reliable operation, and remote service and data management as part of the ABB Ability™ portfolio of solutions. The new HVC-Overnicht Charger is a compact power cabinet paired with three charge boxes. This means that after the first vehicle has finished charging, the next will start charging automatically, maximizing vehicle availability and reducing the initial investment and subsequent operational costs. The power cabinets of ABB’s HVC-Overnicht Charger can be upgraded from 50kW to 100kW or 150kW at any time. Additionally, the advanced services from ABB Ability™ provide customers with various connectivity features including remote monitoring, remote management, remote diagnostics and remote power upgrades.

FOR ELECTRIC BUSES

Thermo King Athenia™ MkII Heat Pump range is designed for hybrid and electric buses. Thanks to its reversible refrigeration circuit, passenger comfort is ensured not only during the summer months when cooling is required, but also during the winter months when heating is required instead. In addition to this, the system can operate in ambient temperatures of down to minus 7 degrees Celsius. In heating mode, the Athenia MkII Heat Pump is able to transfer heat from outside air into the inside passenger area with a coefficient of performance level (COP) of up to 4. This means for each 1kW of electricity consumed from batteries the heat pump generates up to 4kW of heating. The system can also be equipped with a battery cooler, which can recover the energy emitted by the batteries and use it for heating the passenger area. In order to lower total power consumption the units use electric variable speed compressors with a cooling and heating capacity modulation range of up to 60 percent, even when the bus is at the bus station.

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BusToCoach on-line Magazine - November 2017
Mercedes buses are back on the streets of Croatia, around the major city of Split, just like last year. This time the Tourismo is in the spotlight with the new RHD models that debuted last June in Brussels (see Bus-ToCoach Magazine in July/August) and then at Kortrijk Busworld. These models represent the third generation of Tourismo in 23 years of production. The four models are available in three different lengths (from 12.3 m to 14 m) in either left-hand or right-hand-drive versions and two cockpit options.

The new Tourismo RHD is enough versatile to cover the range of applications for the Travego models that will be progressively sold from the middle of next year.

As far as the Tourismo range is concerned, in addition to the new RHD, the 10.3-meter Tourismo K and the 12.1- and 13-meter Tourismo RH will remain, all with a height of up to 3.3 meters.

But let’s go back to the streets of Croatia where last September several vehicles were tested: four of the new Tourismo RHD range plus a Tourismo M/2 featuring Active Brake Assist 4 with pedestrian detection. They are all powered by the Mercedes OM 470 engine (428 hp), with the exception of the 12-meter coach, which is powered by the OM 936 engine with an output of 354 hp.

Same for the transmission: all vehicles are fitted with the fully automated Mercedes GO 250-8.
PowerShift transmission, except for the 12-meter coach, which is equipped with the GO 190-6 manual gearbox.

The test drive begins at Split Airport. Sitting at the wheel the first innovation is immediately clear: no ignition key but an electronic card to be inserted on the left side of the instrument panel. The separate start button is next to the slot, just a slight push to turn on the ignition. Let’s go. The wide curves, typical of the Mediterranean coast of Dalmatia, are handled optimally thanks to the Adaptive Cruise Control that ensures a comfortable, almost imperceptible deceleration. First stop: Primošten, a small seaside village. When it comes to a stop at a traffic light, manual intervention is unnecessary as the fully automated Mercedes-Benz PowerShift transmission, as well as Tempomat, is coupled with Stop&Go Assist. The vehicle starts moving again after both a brief or a longer stop, via Start-off Assist. No problems at the tight roundabouts even for Tourismo L, which has a length of nearly 14 meters and a wheelbase of nearly 7m. The merit goes to the added rear steering axle and the great sight lines.

The route now heads towards Split where the traffic becomes heavier and the highway has turned into a divided motorway. A host of assistance systems ensures safe operation even in the most chaotic situations. Numerous traffic lights in the city reduce the average speed drastically, but even when the touring coach almost comes to a complete stop only to keep moving after all, the Powershift transmission sorts the gears flawlessly, smoothly and without any deceleration.

In the meanwhile the sun sets over the roofs of Split and the exterior lights have automatically turned on thanks to the light and rain sensor. The roadway is illuminated by bi-xenon headlamps. Further support is provided by surround lighting for reversing.

Things get a little tricky getting to the hotel parking because the spaces are tight between the two coaches already parked. Maneuvering becomes simple thanks to the wide coverage range of the reversing camera. The unloading of the suitcases has been simplified thanks to the parallel opening luggage compartment doors that swing far up. Mountainous and twisty leg for the second day. No problems for the Tourismo L: with a displacement of 10.7 l, the new engine with 456 hp and a maximum torque of 2,200 Nm, the Mercedes OM 470 pulls from low revs equally powerfully and composed.

The test drive involved around 300 km on two days, in demanding topography, uphill and downhill, with tight spots, manoeuvring, and on the motorway. And the new RHD Touring has proved excellent to every situation.
At the Innovation Day, Volkswagen Group presented the latest innovation in the field of automated driving, connectivity and alternative drive systems.

Innovation. It was the main theme for the Volkswagen Group during the Innovation Day in Hamburg, Germany, on last October 11. The aim of the Innovation Day is to present and discuss the improvements developed by the brands of the group (MAN, Scania, Volkswagen Caminhões e Ônibus, and RIO) in order to improve the transportation of goods and people.

The German group has long been committed to increasing efficiency and improving environmental performance in the world of transportation, as well as to making it safer. Research and application activities focus on three fields: automated driving, connectivity and alternative drive systems. As far as development is concerned, Volkswagen Truck & Bus is pooling the brands’ resources with the aim of levera-
The German Group has a wide-ranging portfolio of alternative solutions. In addition to engines powered by gas and biogas, it is developing electrical solutions for medium and heavy trucks as well as for city buses. And it will soon propose a complete range of electric vehicles for the European market. The jointly developed electric powertrain will be the basis of any future generations of Volkswagen Truck & Bus vehicles.

Both MAN and Scania will test the module on pre-series versions of a city-based battery bus in several European cities under everyday conditions. The electric buses are scheduled to go into series production in 2020. As far as transportation of goods is concerned, the e-Delivery, a modern truck for urban logistics aimed at improving sustainability in urban delivery of goods, had its world premiere at the Innovation Day in Hamburg. The vehicle will be built at Volkswagen Caminhões & Ônibus in Brazil in 2020.

Initiatives are also under way to find solutions for electrifying heavy trucks in order to make them suitable for long-haul traffic. The e-road is the use of power lines, as in the rail sector. Test sections of road for electric vehicles are already available in Sweden. Test routes were also announced in Germany.

Andreas Renschler, CEO of Volkswagen Truck & Bus, as well as Volkswagen AG Board Member responsible for commercial vehicles, «Today, we are one of the leading companies in the development of technologies and products for the future of transportation».

As far as vans is concerned, the eCrafter is an electric vehicle which is capable of up to about 200 km on a single charge. It will be delivered to selected clients by the end of 2017. The VW I.D. Buzz Cargo is also being developed as a compact electrified van. It is under development, scheduled for launch in 2022.

Anders Nielsen, CTO at Volkswagen Truck & Bus, pointed out «This is to avoid duplication and leverage synergies by reusing technologies across the brands. This will free up research and development resources to focus on new technologies as well as be faster to market in a cost-efficient way.».

An increasingly important role in the development of new technologies and products is played by factors such as efficiency, zero emissions and sustainability. "We chose the right time to bundle our expertise and pool our resources" said Andreas Renschler, CEO of Volkswagen Truck & Bus, as well as Volkswagen AG Board Member responsible for commercial vehicles. «Today, we are one of the leading companies in the development of technologies and products for the future of transportation».

**AUTONOMOUS DRIVING**

Volks wagen Truck & Bus is working closely together with Volkswagen Group Research to make automated driving on public roads a viable option up to level 5 autonomy. The “Fellow Truck” project, for example, aims at gradually integrating modules of artificial intelligence into vehicles. Volkswagen aims at offering within a few years specific products for the autonomous transportation of goods and people on public roads. But for this to happen, we need changes to the legal framework and to the necessary infrastructures. Scania fully autonomous vehicles for use in mines are already available and the first vehicle will be shipped soon. MAN too in cooperation with seven partners from industry, research, and administration has demonstrated with the BMWI-subsidized research project “aFAS” how far the technology of autonomous driving has evolved. For the first time in Germany, a driverless truck is driving autonomously as a safety vehicle for road maintenance works.

**CONNECTIVITY**

Digitization is intended to radically change the world of transportation. Volkswagen Truck & Bus is actively promoting the logistics-related guide. With MAN and Scania, Volkswagen Truck & Bus is currently able to connect over 300,000 trucks. Together with the American partner, Navistar, the company will be able to expand the system in order to connect 650,000 vehicles worldwide. The vehicles will also have access to the RIO platform to request internal OEM services for their brand and those offered by third-party suppliers. RIO is the open cloud-based platform of the Volkswagen Truck & Bus group and it interconnects all ‘players’ along the entire logistics chain. It connects services such as vehicle monitoring, driver communication, driving and efficiency analysis, digital maintenance management, and telematics data plus other advanced logistic services that make them available on the online market. The RIO platform and the RIO applications will be available by the end of the year.

Well-known on the European markets since its launch at Kortrijk Busworld in 2009, the Scania Touring coach has only arrived in Italy at the beginning of this year. This means a new opportunity for national operators. And such an opportunity! The results obtained with the 12.1-meter version tested by BusToCoach exceeded all expectations in terms of consumption, plus a remarkably interesting purchase price: €235,000 thousand euros starting price.

Before going into the drive test, it should be noted that Scania Touring HD is available in the 12.1-meter (the one we tested) and 12.9-meter two-axle versions and in

**MINIMUM CONSUMPTION**

<table>
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<td>TOTAL</td>
<td>347</td>
<td>77.4</td>
<td>5.49</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length mm</td>
<td>12,090</td>
</tr>
<tr>
<td>Width mm</td>
<td>2,550</td>
</tr>
<tr>
<td>Height with AC</td>
<td>3,800</td>
</tr>
<tr>
<td>Wheelbase mm</td>
<td>5,850</td>
</tr>
<tr>
<td>Front overhang</td>
<td>2,810</td>
</tr>
<tr>
<td>Rear overhang</td>
<td>3,430</td>
</tr>
<tr>
<td>Luggage m³</td>
<td>7</td>
</tr>
<tr>
<td>Turning circle</td>
<td>21,840</td>
</tr>
<tr>
<td>Fuel tank litres</td>
<td>465</td>
</tr>
<tr>
<td>AdBlue tank litres</td>
<td>45</td>
</tr>
<tr>
<td>Test weight kg</td>
<td>18,100</td>
</tr>
</tbody>
</table>

**FUEL**

- Main Road
- Down on the Highway
- Up on the Highway
- Plain on the Highway
- TOTAL AVERAGE
The test route

PASSENGERS

<table>
<thead>
<tr>
<th>Seats n.</th>
<th>49+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal height mm</td>
<td>2,080</td>
</tr>
<tr>
<td>Aisle height mm</td>
<td>1,350</td>
</tr>
<tr>
<td>Aisle width mm</td>
<td>430</td>
</tr>
<tr>
<td>Entrances width mm</td>
<td>600/630</td>
</tr>
<tr>
<td>Racks capacity m²</td>
<td>1.36</td>
</tr>
</tbody>
</table>

Comfort

- Seats type: Kiel reclining
- A.C.: Konvektia 38 kW
- Heater: convectors 30 kW
- Lighting: Led
- Roof Hatches: 2
- Glazing: double
- Audio: Blaupunkt
- Video: 2 monitor Lcd 19"
- Toilette: yes (optional)

Up to 55 seats

In order to customize the interior trim you can choose Classic or Comfort interior layout with different colours and upholstery, and amenities on request (faux wood flooring, toilet, kitchenette and so on). The vehicle under test was equipped with toilet, therefore the capacity of the luggage compartment (with manual pantograph opening of the doors) has been reduced by about one cubic meter for a total capacity of 7 cubic meters. In addition to this, two side storage closets have been added on the right side for about 1.3 cubic meter of total space that can be used for instruments or anything else.

49 Kiel reclining seats, complete with accessories and with eco-leather headrest and edges, are mounted on a raised base with respect to the aisle. Without toilet up to 55 seats can be mounted.

Open luggage racks allow stowage of about 1.3 cubic meters of hand luggages. At the bottom the personal sets are equipped with LED reading lights, like the rest of the interior lighting.

Climate is kept under control by the separate management of the 38 kW Konvektia group and by the floor convector heating powered by the 30 kW Spheros engine. Infotainment is ensured by an audio-video system complete with two 19” LCD monitors, branded Blaupunkt.

As previously said, the consumption turned out to be better than any optimistic prediction: 18.2 liters of diesel per 100 kilometers, that means that the Touring HD 12.1 travelled an average of 5.49 kilometers with a liter of fuel, or better a combination of diesel plus the equivalent amount of AdBlue, which is not a small quantity. As for all engines that comply with the Euro 6 norms without exhaust gas recirculation (EGR), even for the Scania DC13 115 mounted on the Touring, the activity of SCR on pollutant emissions required high dosage of AdBlue: 7 liters per 100 liters of diesel to be precise. Nevertheless, consumption has been record-breaking. Just look at the table at the end.
The driving position has been lowered to 950 mm from the ground, that is two steps below the aisle level. Here is mounted the Isri adjustable pneumatic suspension seat, with a 18 cm longitudinal stroke.

In front of the driver position there is a simple and orderly dashboard with an instrument panel that includes the colour multifunction display and the usual four main analogue instruments: rev counter with current fuel consumption gauge, speedometer with oil pressure gauge, fuel level and engine temperature.

On the right side of the dashboard, the display for the GPS navigation, the images taken from the reversing camera or from the CCTV in order to control the front area and the central door. The climate controller and the audio-video equipment are in a lower position. Underneath the window there is the control panel, while the microphone and the usual cockpit fridge are placed facing the hostess seat. It is equipped with electric side window, electric split windshield sunshade and electrically-heated multiple display rear-view mirrors.

The right place

In the article to see how all the buses tested so far have always travelled below 5 km/l, while the Touring has reached 5.5 km/l. How was it possible? The average speed has been 77.4 km/h, certainly not an epic performance but indicating that the driver was focused on not pushing too much on the gas pedal. A rule that should be followed always for a proper driving. It should be considered that the air conditioning was only in operation half of the test and not during all 347 kilometers. In this case, the average should be reduced to 5.3 km/l on paper. Always a remarkable quantity.

More likely, the “reason” for so much economy in fuel consumption, in addition to the ability of the Scania engine combustion process and the adoption of a wide-ratio transmission (2.92), should be identified in the positive effects of the 12-speed Scania Opticruise automated gear changing system. In particular, Active Prediction and Pulse & Glide. The first uses topographic map data and GPS technology to determine road’s topography in the following 3 km that the vehicle is about to face, choosing the best gear and speed to minimize fuel consumption. The second increases considerably the overall time the vehicle uses Eco-roll feature (ie running in neutral) on sloping roads, as proved by the 9.8 km/l travelled in downhill motorways.

For everything else, the Touring HD 12.1 has proven to be a valid product for the work it is called upon to perform. Strongly grounded, with quick resumption from pitch even on viaducts and with a precise steering range that allows it to rotate within a diameter of less than 22 meters.
The 12.7-liter Scania DC13 engine with power output of 410 hp (302 kW) operates without exhaust gas recirculation (EGR) and relies only on SCR to comply with the Euro 6 norms. Or better, on a silencer that incorporates in a single unit an oxidation catalyst (DOC) for the reduction of the HC and an integral flow particulate filter (DPF), followed by the AdBlue mixer, a double parallel SCR catalyst to reduce the NOx and by the ASC catalysts for the reduction of residual ammonia particles resulting from the catalytic reduction process performed by the SCR. The AdBlue dosing system uses an electric pump for greater precision and the pipes are electrically heated.

Among the main features of the engine, the extra-high-pressure common-rail XPI injection, the fixed geometry turbocharger (FGT) with wastegate valve and the automatic engine brake.

The Touring tested by Bustocoach was equipped with the 12-speed Scania Opticruise automated gear changing system (8-speed version as standard) with hydraulic retarder.

Very good also the interior quietness for both passengers and the driver and the well-finished trim, which can be further improved with optional accessories.

As standard, you can count on many safety systems, including ACC for automatic distance control to the preceding vehicle, AEB for autonomous emergency braking, LDW lane assistance, Hill Hold for uphill starts and the camera for reversing.

More articles about Scania: