Press Information

Busworld Kortrijk 2011

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15 Years Solaris: The Success Story Continues

Just 15 years after commencing operations, Solaris Bus & Coach today is one of the trendsetters of the European bus industry. Sustainable growth confirms the company's market position with new record results. The Solaris range of electric mobility solutions demonstrates a spirit of innovation: on the road with trolleybuses, hybrid buses and new electric buses, on rails with modern low-floor trams.

Solaris Bus & Coach today is one of Europe's leading bus manufacturers, present in 24 countries, despite Solaris's unparalleled success story only having begun as little as 15 years ago. On 22 March 1996, the first bus left the factory in Bolechowo, an event that marked the first step in the ambitious vision of company founders Krzysztof and Solange Olszewski.

Four Production Sites for Sustainable Growth

Besides the main facility at Bolechowo, there are today three other sites for bus and tram production in the Greater Poznań region. Two plants in Środa Wielkopolska use state-of-the-art technology such as laser cutting to supply the bodyframes for both buses and trams. Final assembly of rail vehicles then takes place in the Junikowo district of Poznań, while buses are finished at the Bolechowo headquarters. Having started off with just 36 workers in 1996, Solaris now employs more than 2,200 people, making the company one of the most important employers of the region.

During the first year, just 52 buses were sold to customers. Since then, this has risen sharply to as much as an expected 1,250 buses this year. Solaris thus continues the marked pace of expansion of the last years and proves that spirit of innovation, flexibility and enthusiasm are the winning combination for public transport.

Largest City Bus Tender in Europe Won

This combination also allowed Solaris to win the largest tender for city buses awarded in the European Union this year. Solaris will deliver 148 buses to Warsaw

Municipal Bus Company (MZA). Although some of these will not enter service in the Polish capital until 2012, Solaris's will this year record a new record result of 515 buses sold in its home market, Poland.

In Germany, Solaris's most significant export market, the presence will likewise be strengthened. Despite an overall downturn of the market, Solaris will deliver more buses than in preceding years and will therefore further improve its market share. At the same time, Solaris continues to develop new markets. The first Solaris buses are now running in Serbia and Russia. All in all, there are now 24 countries which see operation of buses with the green dog.

Sustainable Electric Mobility with Trolleybuses, Hybrid and Electric Buses

The consistent choice of sustainable electric mobility benefits both the environment and quality of life in our cities. Solaris trolleybuses have been running in European cities since 2001 and Solaris now is market leader for these vehicles in the EU and EEA. This year, the 500th Solaris Trollino was handed over to its customer and is now running smoothly and silently in the Polish city of Lublin.

In 2006, Solaris set the pace for the entire bus industry by becoming Europe's first manufacturer to offer a city bus with volume-production hybrid technology. In line with the company's philosophy, Solaris gives its customers a range of choices and does not insist on technologies that might not be suited to local requirements. This is why Solaris now has the largest portfolio of hybrid buses of any European manufacturer, offering the right kind of hybrid solution for every operation. The range runs from the standard-length Urbino 12 Hybrid, which has all components inside the bus and does not require workshops to be adjusted for roof-level maintenance, to the articulated Urbino 18 Hybrid. When fitted with a series powertrain, it combines batteries and supercapacitors as two independent energy storage systems with a plug-in connection for stationary recharging, enabling maximum use of electricity.

Solaris's substantial experience in developing and operating trolleybuses and hybrid buses has been put towards building the company's first electric bus. The Solaris Urbino electric premieres at Kortrijk and opens up new possibilities for tomorrow's emission-free public transport.

International Success for Tramino Low-floor Tram

Electric mobility also is key to Solaris's rail activities. The first Tramino low-floor tram was unveiled two years ago and subsequently successfully completed a very demanding test and certification schedule. By now the first of 45 volume-production Tramino for Poznań City Transport (MPK) are in service and continue to impress their passengers with their bright and spacious interior as much as with their extra-wide doors. Their width of 1,500 mm is a European record for low-floor trams. With five body sections and at 32 m length, Poznań's Tramino carry a total of up to 229 passengers.

Just like the Urbino buses, the Solaris Tramino has quickly found favour in other European countries, with the first export order received in July 2011 when representatives of Solaris and Jenaer Nahverkehrsgesellschaft mbH signed a contract for the delivery of five trams to the German city of Jena. These trams will have three body sections for an overall length of 29 m, constituting a new variant within the product family. These Tramino have been exactly tailored to the operator's requirements. Delivery will be completed by mid-2013.

The course has been set: on the road as well as on rails, Solaris's future journey is powered by enthusiasm and electricity, so that our cities' quality of life may further be enhanced and the environment and climate continue to be protected.

Zero Emission: Solaris Urbino electric

The new Solaris Urbino electric brings autonomous electric mobility to our cities. Solaris's first electric bus covers up to 100 km without any need to be recharged. A host of new design features brings down the vehicle's weight and compensates for the burden of the batteries. Volume production will start in 2013.

"Diesel is dead – long live electricity!" Solaris founder Krzysztof Olszewski's words, spoken at the unveiling of the first Solaris hybrid bus five years ago, today are truer than ever as the new Solaris Urbino electric bus takes centre stage. Zero emission, quiet operation and independence from rising fossil fuel prices are just three of the Solaris Urbino electric's key attributes for sustainable mobility.

Flexible Operation

Offering up to 100 km range when measured against the UITP-defined SORT 1 and SORT 2 cycles and charging its batteries in just four hours, the new Solaris Urbino electric enables flexible operation.

The bus has been based on the proven Alpino 8.9 LE midibus. The new electric drive takes up less space, allowing the rear axle to be moved by 310 mm towards the back of the bus, freeing up valuable space for passengers on board. With its skilful use of the low-entry concept, the Solaris Urbino electric offers plenty of seats despite its small dimensions. At just 8.9 m long and 2.4 m wide, the bus shown at Busworld Kortrijk nevertheless has 26 seats. Depending on specification, between 21 and 29 fixed seats and an additional two tip-up seats are possible. Step-free entrances make the bus easily accessible, with a dedicated space for wheelchair users and pushchairs reserved opposite the second door.

Sophisticated Electric Drive

The drivetrain of the Solaris Urbino electric is supplied by Solaris's system partner Vossloh Kiepe. The German specialist has built on decades of experience as a manufacturer of electric traction equipment to bring the perfect set of technology to the Solaris Urbino electric. At the heart of the bus is a 120 kW, four-pole asynchronous electric motor, delivering up to 1.400 Nm torque. It has been fitted

underfloor at the back of the bus, where it powers the rear axle and smoothly brings the electric bus up to usual city traffic speeds of 50 km/h.

Energy is stored in two 700 kg lithium-ion batteries with a combined capacity of 120.9 kWh at a nominal voltage of 600 V. The batteries are supplied by Wamtechnik of Warsaw and are mounted at the rear of the bus on each side of the motor. During braking, energy is recuperated and stored in the batteries, which additionally are charged from an external plug-in connection. At 3x400 V, 63 A, it takes as little as four hours to completely refill fully exhausted batteries.

With the batteries tucked away within the engine compartment, only the system's power electronics and the legally required brake resistor are mounted on the roof. The brake resistor would only be used if the batteries could not offer any capacity for recuperated energy, a situation that is avoided at virtually all times by the Solaris Urbino electric's energy management software.

Light Construction Reduces Weight

Current energy storage technology requires heavy batteries. To compensate for this additional burden as far as possible, the Solaris Urbino electric consistently uses new approaches to lightweight construction.

The use of new, lighter materials leads to reductions in weight. Engine flap and side panelling of the prototype are made from carbon fibre, while the interior roof panels use foamed aluminium composite material. Mahogany instead of birch plywood was chosen for the floor, aluminium rims replace steel, and classic seat mountings and thinner side windows shed further pounds.

Bringing down the weight further is the electric drive itself. It makes fuel tanks, fuel itself and lubricants superfluous and reduces the weight total by another 350 kg. All this means that the Solaris Urbino electric weighs in at just 750 kg more than its conventional, diesel-powered siblings.

All Auxiliaries Electrified

To enable a fully electric set-up, all auxiliaries have been electrified. This also includes air-conditioning units, which are available optionally. All exterior and interior lighting has been changed to energy-efficient LED technology.

Drivers of the Solaris Urbino electric will enjoy the ergonomic touch-screen dashboard, which clearly lays out all vehicle functions along with constantly updated energy management data, including battery charge levels.

Volume Production Starts in 2013

The development of the Solaris Urbino electric was supported by a 30 per cent financial contribution of the European Regional Development Fund.

Presented at Busworld is a prototype, which will soon begin a demonstration tour of major European cities, where it will run in commercial passenger service. Further vehicles follow in 2012, with volume production to start in 2013, making the Solaris Urbino electric a common sight in zero-emission public transport across Europe.

Solaris CEO Solange Olszewska comments: “This electric bus is a revolution in public transport and a significant step towards new operational possibilities for electric vehicles. Not very long ago, such vehicles seemed to be visions of a far-distant future, but in the Solaris Urbino electric we now present a fully electric bus that will reduce noise and pollution in our cities.”

Technical Specifications

Solaris Urbino electric – Exhibition Vehicle

Dimensions	
Length	8 950 mm
Width	2 400 mm
Height	3 250 mm
Wheelbase	4 380 mm
Front overhang	2 080 mm
Rear overhang	2 490 mm
Angle of approach	8°
Angle of departure	9°
Maximum entrance step height	320 mm
Axles	
Number of axles	2
Front axle	ZF RL 55 EC (independent suspension)
Drive axle	DANA G150
Body	
Bodyframe	Stainless steel
External sheeting	Stainless steel and carbon fibre
Door layout	1-2
Number of seats	26
Drivetrain	
Electric motor	Four-pole asynchronous motor (120 kW, 1 400 Nm)
Traction batteries	Lithium-Ion (120.9 kWh, nominal voltage 600 V, weight 2x700 kg)

Bold Design: Solaris Urbino MetroStyle

Eye-catching design for attractive public transport – this is the Solaris Urbino MetroStyle. Its characteristic front is based on the Solaris Tramino low-floor tram, while clever new solutions enhance the interior. The design and specification package can be combined with all drivetrain options.

Rising mobility needs bring new challenges for our cities. New roads quickly are blocked by new traffic jams and there are fewer and fewer parking spaces available in city centres. Public transport is the proven alternative, with attractive vehicles further increasing its appeal and market share.

Both “Bus Rapid Transit” (BRT) and its French counterpart “Bus à haut niveau de service” (BHNS) are innovative concepts for modern, sustainable bus transport in cities, combining dedicated infrastructure and high service frequencies with sophisticated vehicles like the new Solaris Urbino MetroStyle.

All Eyes on a Unique Design

The Solaris Urbino MetroStyle immediately catches anyone’s eye with its unique design. Its front – taking its cues from the Solaris Tramino low-floor tram – boldly sketches out a dynamic appeal that is also found all the way along its sleek sides to the elegant rear. This confident composition demonstrates to passengers that this is a bus they can rely on.

Besides its futuristic design, the Solaris Urbino MetroStyle offers a wide range of construction and specification options for customers and transport authorities to choose for their requirements. In high-quality public transport, individuality is key: stakeholders and passengers alike recognise BRT and BHNS services as intrinsically local when they are tailored to their place of operation.

Available for All Drivetrain Options

The features of the Solaris Urbino MetroStyle may be flexibly combined with all powertrain options available from Solaris. Solaris’s electric mobility solutions are particularly suited to this mode of sustainable transport.

The Solaris Urbino MetroStyle is therefore available as a hybrid bus with both parallel and series hybrid technology, the latter with partial zero-emission capability. Turning Solaris's trolleybuses into a state-of-the-art show-stopper, the Solaris Trollino MetroStyle comes with emission-free operation throughout.

Shown at Busworld: Solaris Urbino 18 Hybrid MetroStyle for France

The vehicle shown at Busworld is an articulated Solaris Urbino 18 Hybrid MetroStyle for French BHNS routes. Powered by a parallel diesel-electric hybrid drive supplied by Allison Transmission, fuel consumption is reduced by up to 25% and exhaust emissions by as much as 78% when compared to conventional diesel articulated buses.

Inside, particular attention was paid to accessibility. By using super-single tyres on the second axle, aisle width was increased to 850 mm, allowing customers with pushchairs and wheelchair users to move freely through this area. LED floor lighting and non-slip floors reduce trip and slip hazards. Passengers enjoy a bright and spacious interior thanks to a new lighting concept with illuminated ceiling panels and translucent articulation bellows. High-resolution screens mounted at ceiling level and above the wide doors show real-time information on routing and connections.

On Order: Salzburg Chooses Solaris Trollino 18 MetroStyle Trolleybuses

The first customer to order the Solaris Trollino 18 MetroStyle is Austrian city operator Salzburg AG. With their spectacular design, ten of these new trolleybuses are sure to turn heads in Mozart's home town from 2012, confirming Salzburg's leading role in trolleybus innovation.

Salzburg makes extensive use of eco-friendly trolleybuses and continues to expand and extend its route network. With the Solaris Trollino 18 MetroStyle, its vehicles will match this excellence.

Technical Specifications

Solaris Urbino 18 Hybrid MetroStyle – Exhibition Vehicle

Dimensions	
Length	18 000 mm
Width	2 550 mm
Height	3 250 mm
Interior height	2 370 mm
Wheelbase	5 130 mm / 6 770 mm
Front overhang	2 700 mm
Rear overhang	3 400 mm
Angle of approach	7°
Angle of departure	7°
Maximum entrance step height (doors 1+2)	320 mm
Maximum entrance step height (doors 3+4)	340 mm
Axles	
Number of axles	3
Front axle	ZF RL 75 EC (independent suspension)
Central axle	ZF AVN 132 S (super-single tyres)
Drive axle	ZF AV 132
Body	
Bodyframe	Stainless steel
External sheeting	Stainless steel and aluminium panels
Door layout	1-2-2-2
Number of seats	31 (+2 tip-up seats)
Drivetrain	
Diesel engine	Cummins ISB6.7EV 250H
Diesel engine power rating	181 kW (246 PS)
Diesel engine volume	6.7 l
Hybrid system supplier	Allison Transmission
Electric motors power rating	150 kW
Batteries	Nickel-metal hydride
Fuel tanks	
Fuel tank	350 l
AdBlue tank	40 l

New Options: Solaris Urbino 12

At Busworld, a Solaris Urbino 12 shows new Urbino family specification options for Solaris customers. Besides existing suppliers, MAN diesel engines now are available. A refined VDV dashboard and a new generation of passenger seats also are new to the Solaris offer.

The Solaris Urbino 12 shown at Busworld 2011 in Kortrijk is an example of the continuous development and the extensive specification choices of the Solaris Urbino family of city and interurban buses. This bus shows new options for engine, dashboard and seats.

At the same time, the colourful interior proves that buses by no means have to be grey and boring. Crisp colours create a vibrant atmosphere that is sure make the journey a real pleasure.

MAN Diesel Engine: Euro 5 and EEV without AdBlue

Apart from DAF and Cummins, Solaris customers now also have the choice of MAN diesel engines. Available initially is the D0836 LOH engine, a vertically-mounted in-line six-cylinder unit with common-rail injection. At 6.9 l volume, the power rating as shown on the exhibition vehicle delivers 213 kW (290 PS) and a maximum torque of 1,100 Nm.

Thanks to exhaust gas recirculation within the engine, Euro 5 exhaust emission limits are met without any need for the AdBlue additive. An additional particulate filter brings the engine to within the limits of the even stricter EEV standard.

The MAN D0836 LOH engine will be available in Solaris buses from the start of 2012.

Exclusive to Solaris: Refined VDV Dashboard

New – and exclusive to Solaris – is the refined Continental VDO dashboard. Since the mid-1990s, dashboards developed according to recommendations by the Association of German Transport Companies (VDV) have been setting international standards for ergonomics and clarity.

The new version, which has been designed together with Solaris's in-house research and development teams, continues the proven and established concept and refines it with new, multi-coloured displays without ever forgetting VDV's key ideas. This new dashboard will fully replace the existing version and will become a fixed item in the Solaris catalogue.

New, Lighter Seats from Ster

Time has not stood still for the passenger seats, either. Solaris's partner Ster has developed a new, even lighter generation of city bus seats. Their fluid lines perfectly match the bus interior, while their ergonomic shape ensures highest comfort.

The seats on the exhibition vehicle are a first taste of this new generation, which will become available in a Solaris-specific version at the start of 2012 and is set to be the new standard for Urbino city buses.

Technical Specifications
Solaris Urbino 12 – Exhibition Vehicle

Dimensions

Length	12 000 mm
Width	2 550 mm
Height	3 050 mm
Interior height	2 370 mm
Wheelbase	5 900 mm
Front overhang	2 700 mm
Rear overhang	3 400 mm
Angle of approach	7°
Angle of departure	7°
Maximum entrance step height (doors 1+2)	320 mm
Maximum entrance step height (door 3)	340 mm

Axles

Number of axles	2
Front axle	ZF RL 75 EC (independent suspension)
Drive axle	ZF AV 132

Body

Bodyframe	Stainless steel
External sheeting	Stainless steel and aluminium panels
Door layout	2-2-2
Number of seats	33 (+2 tip-up seats)

Drivetrain

Diesel engine	MAN D0836 LOH 70
Diesel engine power rating	213 kW (290 PS)
Diesel engine volume	6.9 l
Transmission	Voith DIWA 5

Fuel tank

Fuel tank	250 l

Press Images

Logo

Solaris_Logo.eps

Solaris_Logo.jpg


Solaris_Jamnik.eps


Solaris_Jamnik.jpg

Olszewski Family


Krzysztof_Olszewski_1


Krzysztof_Olszewski_2


Małgorzata_Olszewska


Olszewski_Family


Solange_i_Krzysztof_Olszewscy_1


Solange_i_Krzysztof_Olszewscy_2


Solange_Olszewska_1


Solange_Olszewska_2

Solaris Urbino electric


Solaris_Urbino_electric_1


Solaris_Urbino_electric_2


Solaris_Urbino_electric_3


Solaris_Urbino_electric_4


Solaris_Urbino_electric_5


Solaris_Urbino_electric_i1

Solaris Urbino MetroStyle


Solaris_Urbino_MetroStyle_1


Solaris_Urbino_MetroStyle_2


Solaris_Urbino_MetroStyle_3


Solaris_Urbino_MetroStyle_4


Solaris_Urbino_MetroStyle_5


Solaris_Urbino_MetroStyle_i1

Solaris Alpino 8,6


Solaris_Alpino_8,6_1


Solaris_Alpino_8,6_2


Solaris_Alpino_8,6_3


Solaris_Alpino_8,6_4


Solaris_Alpino_8,6_5


Solaris_Alpino_8,6_6

Solaris Alpino 8,9 LE


Solaris_Alpino_8,9_LE_1


Solaris_Alpino_8,9_LE_2


Solaris_Alpino_8,9_LE_3


Solaris_Alpino_8,9_LE_i1


Solaris_Alpino_8,9_LE_i2


Solaris_Alpino_8,9_LE_i3

Solaris Urbino 10


Solaris_Urbino_10_1


Solaris_Urbino_10_2


Solaris_Urbino_10_3


Solaris_Urbino_10_4


Solaris_Urbino_10_5

Solaris Urbino 12


Solaris_Urbino_12_1


Solaris_Urbino_12_2


Solaris_Urbino_12_3


Solaris_Urbino_12_4


Solaris_Urbino_12_5


Solaris_Urbino_12_6


Solaris_Urbino_12_7


Solaris_Urbino_12_8


Solaris_Urbino_12_i1


Solaris_Urbino_12_i2


Solaris_Urbino_12_i3


Solaris_Urbino_12_i4


Solaris_Urbino_12_i5


Solaris_Urbino_12_i6


Solaris_Urbino_12_i7


Solaris_Urbino_12_i8

Solaris Urbino 12 CNG


Solaris_Urbino_12_CNG_1


Solaris_Urbino_12_CNG_2


Solaris_Urbino_12_CNG_3


Solaris_Urbino_12_CNG_i1

Solaris Urbino 12 Hybrid (Eaton, parallel)


Solaris_Urbino_12_Hybrid_1


Solaris_Urbino_12_Hybrid_2


Solaris_Urbino_12_Hybrid_3


Solaris_Urbino_12_Hybrid_4


Solaris_Urbino_12_Hybrid_5


Solaris_Urbino_12_Hybrid_6


Solaris_Urbino_12_Hybrid_7


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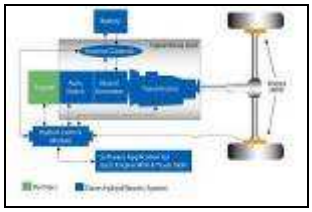
Solaris_Urbino_12_Hybrid_10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Solaris Urbino 12 LE


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Solaris_Urbino_12_LE_2

Solaris Urbino 12 LE CNG


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Solaris_Urbino_12_LE_CNG_i1


Solaris_Urbino_12_LE_CNG_i2


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Solaris Urbino 15


Solaris_Urbino_15_1


Solaris_Urbino_15_2

Solaris Urbino 15 CNG


Solaris_Urbino_15_CNG_1


Solaris_Urbino_15_CNG_2

Solaris Urbino 15 LE


Solaris_Urbino_15_LE_1


Solaris_Urbino_15_LE_2


Solaris_Urbino_15_LE_3


Solaris_Urbino_15_LE_4


Solaris_Urbino_15_LE_i1


Solaris_Urbino_15_LE_i2


Solaris_Urbino_15_LE_i3

Solaris Urbino 15 LE CNG


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Solaris_Urbino_15_LE_CNG_6


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Solaris_Urbino_15_LE_CNG_8


Solaris_Urbino_15_LE_CNG_9


Solaris_Urbino_15_LE_CNG_10


Solaris_Urbino_15_LE_CNG_i1

Solaris_Urbino_15_LE_CNG_i2

Solaris Urbino 18


Solaris_Urbino_18_1


Solaris_Urbino_18_2


Solaris_Urbino_18_3


Solaris_Urbino_18_4


Solaris_Urbino_18_5


Solaris_Urbino_18_6


Solaris_Urbino_18_7


Solaris_Urbino_18_8

Solaris Urbino 18 CNG


Solaris_Urbino_18_CNG_1


Solaris_Urbino_18_CNG_2


Solaris_Urbino_18_CNG_3

Solaris Urbino 18 LE CNG


Solaris_Urbino_18_LE_CNG_1


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Solaris_Urbino_18_LE_CNG_5


Solaris_Urbino_18_LE_CNG_i1

Solaris Urbino 18 Hybrid (Allison, parallel)


Solaris_Urbino_18_Hybrid_
Allison_1


Solaris_Urbino_18_Hybrid_
Allison_2


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Allison_3


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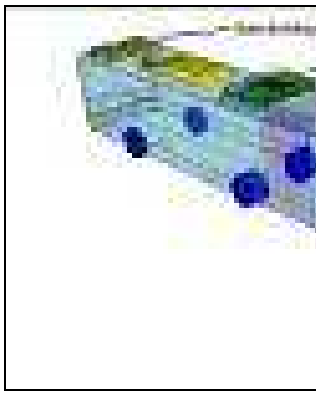
Solaris_Urbino_18_Hybrid_
Allison_6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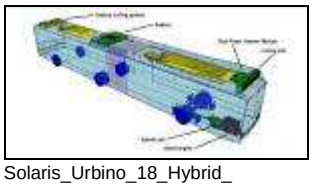
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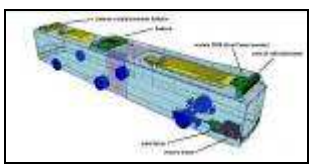
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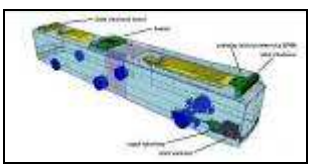
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Allison_i1


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Allison_i2


Solaris_Urbino_18_Hybrid_
Allison_i3

Solaris Urbino 18 Hybrid (Voith, parallel)


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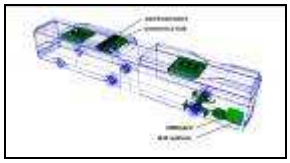
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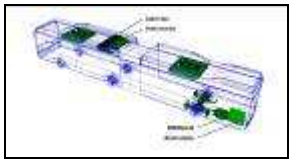
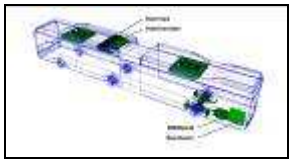

Solaris_Urbino_18_Hybrid_Voith_d
1_en (English)


Solaris_Urbino_18_Hybrid_Voith_d
1_de (Deutsch)

Solaris Urbino 18 Hybrid (Vossloh Kiepe, series)

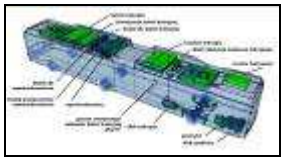

Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_1

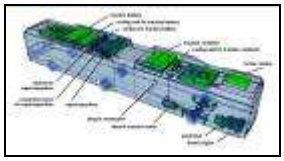

Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_2

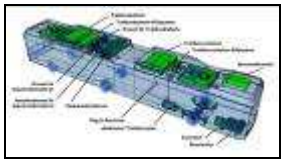

Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_3


Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_4


Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_5


Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_d1_pl (Polski)


Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_d1_en (English)


Solaris_Urbino_18_Hybrid_Vossloh
_Kiepe_d1_de (Deutsch)

Solaris InterUrbino 12


Solaris_InterUrbino_12_1


Solaris_InterUrbino_12_2


Solaris_InterUrbino_12_3


Solaris_InterUrbino_12_4


Solaris_InterUrbino_12_5


Solaris_InterUrbino_12_6


Solaris_InterUrbino_12_7


Solaris_InterUrbino_12_8


Solaris_InterUrbino_12_i1


Solaris_InterUrbino_12_i2


Solaris_InterUrbino_12_i3


Solaris_InterUrbino_12_i4


Solaris_InterUrbino_12_i5


Solaris_InterUrbino_12_i6

Solaris Trollino 12


Solaris_Trollino_12_1


Solaris_Trollino_12_2


Solaris_Trollino_12_3


Solaris_Trollino_12_4


Solaris_Trollino_12_5


Solaris_Trollino_12_i1

Solaris Trollino 15


Solaris_Trollino_15_1


Solaris_Trollino_15_2


Solaris_Trollino_15_3


Solaris_Trollino_15_4

Solaris Trollino 18


Solaris_Trollino_18_1


Solaris_Trollino_18_2


Solaris_Trollino_18_3


Solaris_Trollino_18_4


Solaris_Trollino_18_5

Airport Buses


Solaris_Urbino_12_Airport_1


Solaris_Urbino_12_Airport_2


Solaris_Urbino_12_Airport_i1


Solaris_Urbino_15_Airport_1


Solaris_Urbino_18_Airport_1


Solaris_Urbino_18_Airport_i1

Solaris Ambulance


Solaris_Ambulance_1


Solaris_Ambulance_2


Solaris_Ambulance_3


Solaris_Ambulance_4


Solaris_Ambulance_5


Solaris_Ambulance_6


Solaris_Ambulance_i1


Solaris_Ambulance_i2

Solaris Urbino (details)

Solaris_Urbino_details_1


Solaris_Urbino_details_2

Solaris_Urbino_details_3


Solaris_Urbino_details_4

Solaris_Urbino_details_5


Solaris_Urbino_details_6


Solaris_Urbino_details_7


Solaris_Urbino_details_8

Solaris_Urbino_details_9


Solaris_Urbino_details_10

Solaris_Urbino_details_11

Solaris Tramino


Solaris_Tramino_ 1


Solaris_Tramino_2


Solaris_Tramino_3


Solaris_Tramino_4


Solaris_Tramino_5


Solaris_Tramino_6


Solaris_Tramino_7


Solaris_Tramino_8


Solaris_Tramino_9


Solaris_Tramino_10


Solaris_Tramino_11


Solaris_Tramino_i1


Solaris_Tramino_i2


Solaris_Tramino_i3


Solaris_Tramino_i4

Solaris Tramino Poznań


Solaris_Tramino_Poznań_1


Solaris_Tramino_Poznań_2


Solaris_Tramino_Poznań_3


Solaris_Tramino_Poznań_4


Solaris_Tramino_Poznań_5


Solaris_Tramino_Poznań_6


Solaris_Tramino_Poznań_i1


Solaris_Tramino_Poznań_i2

Factories


Solaris_Bolechowo_1


Solaris_Bolechowo_2


Solaris_Bolechowo_3


Solaris_Bolechowo_4


Solaris_Bolechowo_5


Solaris_Bolechowo_6


Solaris_Bolechowo_7


Solaris_Bolechowo_8


Solaris_Bus_Środa_Wlkp


Solaris_Tram_Poznań_1


Solaris_Tram_Poznań_2


Solaris_Tram_Środa_Wlkp_1


Solaris_Tram_Środa_Wlkp_2


Solaris_Tram_Środa_Wlkp_3