



PRESS RELEASE

Technical novelties from Solaris

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The Solaris Bus & Coach company Research and Development Department, which currently employs nearly 150 engineers, not only develops new constructions of complete vehicles, but also introduces innovative components and systems used in buses and trolleybuses for serial production. One of the areas that Solaris engineers have recently worked on were air conditioning and heating as well as an electric power steering system.

Most of the effort devoted to the development of a heating system in electric buses is related to the limitation of energy use and thus they allow for an extension of the driving range of the vehicle. For this purpose producers often go for a diesel-fuel-powered heater rather than other solutions; this one, though effective when temperatures are very low, is far from emission-free. Solaris, an advocate of the use of electric heating in buses, has proposed an innovative compromise solution in its Urbino 8.9 LE electric model, devised for RCKiK Katowice - an LPG-fuelled heating system. This solution guarantees low emission and is much cheaper than a standard heater. What is more, LPG tanks are smaller than those for the previously applied CNG, which means their installation is less complicated.

The hydrogen vehicle currently under construction in the Bolechowo-based factory will feature a heating and air-conditioning system where the refrigerant will be CO₂ recuperated from the waste energy of the cooling system of the hydrogen drivetrain. The use of the electric heat pump enables a considerable reduction of the battery energy use and an extension of the maximum range of the vehicle, but it also guarantees more efficient work in low temperatures, all in an emission-free drive mode.

Another change the engineers of Solaris are already bracing for is the gradual limitation of the use of refrigerant R134a used in current air-conditioning systems. Pursuant to EU decisions, by 2030 this substance is to be completely replaced by the much more environment-friendly R513a. Thanks to the efforts of the Polish producer and one of its suppliers, the air conditioning of vehicles from Bolechowo can already be supplemented with the cleaner agent.

Changes have also been applied to the power steering system. For quite some time, this novel solution has been a staple in all electric and hybrid buses rolling out from the Bolechowo factory. It can also be a viable option for trolleybuses. The subject matter is the electric power steering pump, powered with standard 24V batteries. This solution results in the reduction of energy use - the pump does not burden the main engine and, hence, it also increases the vehicle range. Another argument in favour of this design is the variable pump speed thanks to which the force of the power steering is greater for lower speed levels and falls with the rising speed. First and foremost, however, this solution entails a significant improvement of security, since the electric power steering pump is not dependent on other devices the malfunctioning of which could lead to loss of control over the vehicle in extreme cases.

In the past four years Solaris spent 145 million PLN on research and development. These outlays translate directly to the safety and technological advancement of its vehicles. Thanks to, among others, these features the Solaris Urbino 12 electric was elected best city bus of the year in the prestigious

'Bus of the Year 2017' competition.

Additional information

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About our company

Solaris Bus & Coach sp. z o.o. is one of the leading producers of city and intercity buses in Europe. It focuses in particular on the development of zero-emission vehicles, i. e. electric and hydrogen buses as well as trolleybuses. This has resulted in the widest zero-emission product range in the European market and a leading position in this segment with a market share of 15.2%. Nearly 25,000 Solaris vehicles have been delivered so far and they ply the streets in 850 towns and cities across 33 countries located throughout Europe as well as beyond it. Solaris is part of the Spanish CAF Group (Construcciones y Auxiliar de Ferrocarriles) S.A. From conception, to the design and manufacturing phases, all Solaris buses are produced in Poland. Moreover, all activities undertaken by the manufacturer are in line with the brand's mission, which is reflected in the motto "We are changing the image of public transport". Solaris also actively partners with public transport operators and provides them with comprehensive support in their transition to zero-emission mobility.