

# COMPONENTS AND ACCESSORIES AT BUSWORLD EUROPE

Second part of the report on the specialists in bus components at Kortrijk

## FIRETRACE -

According to the statistics a good portion of fires, more than 70%, originates in the engine compartment. Firetrace, a manufacturer of automatic fire detection and fire suppression systems, offers the Firetrace Detection Tubing. This system is based on a thermosensitive and pressurized polymer tube, which, reacting to the heat and flame radiant energy, bursts releasing the fire suppression agent. In this case the direct release takes place. The release may also be indirect by means of a fixed distribution network (here the tube works only as a detector). Among the advantages of the Firetrace Detection Tubing there is reliability in harsh environments due to tolerance to dirt, debris and extreme temperatures, uninterrupted service requiring no electricity, the alarm availability and the ability to send an alert to the monitoring system, economic installation and maintenance together with recharging. Firetrace also offers a new mounting system for horizontal spaces that do not support a vertically disposed cylinder. Firetrace systems are certified according to the SPCR 183 process.



## TAMWARE

A complete range of bus doors comes from Finland. There are showcased solutions for urban buses fitted with the Polar in-swinging doors especially functional as a front door and the Pallas outswinging doors for assembling in the middle or rear part of the bus. The opening system can be unique or separate for each door in both cases.



## DAF

It presented the full range of Euro VI bus engines: the Paccard MX 11 with an output of 210, 240, 271, 291 and 320 kW and the Paccard MX 13 with an output of 303, 340 and 375 kW.



All of them are characterized by low fuel consumption, maximum reliability and maintenance intervals superior to 150,000 kilometres. The DAF LF truck-chassis in increments of 4.3 or 5.4 metres and PX-7 engine delivering from 112 to 231 kW for compact buses was also presented. The engine has already been used to power the Solaris Concept Bus unveiled at Busworld.

## AUTOCLIMA

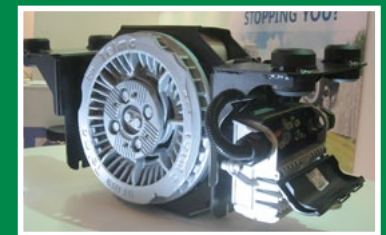


The Modula RT group with cooling capacity of 3 kW is suitable for conditioning the driving seat of the electric minibuses. An electric engine powers all the parts of the group: a compressor, a condenser, a drier filter, an expansion valve

and an evaporator. The power supply is 12 or 24 volts.

## TELMA

An easy installation with a single module that integrates control and power functions. These are the requirements of the electronic control unit iRCS (integrated Retarder Control System), produced



by Telma that is a world leader in friction free braking systems based on the physical principle of electromagnetic induction. The innovative electronic design of the iRCS's power function significantly reduces the retarder's energy consumption and preserves its electric circuits of slow motion, while preserving at the same time the electrical circuits.

The modernity and flexibility of the control part of the iRCS allow for seamless integration of Telma retarders in all vehicles equipped with electronic braking assistance systems such as ABS, ESP, EBS, Cruise control or automatic transmission control. The iRCS complies with CANBUS networks and with the ISO 26262 ASIL automobile standard.

## FRENZEL

The Italian coffee pleasure is available with the Nespresso FOB 822 mini kitchen. Elegant lines, high-quality materials, practical storage compartments for the capsules and LED interior lighting. The capacity is over 20 cups. The cups for coffee and cappuccino, and all types of capsules are provided for the initial order.



## SEGE

The model 3040 with a width of only 400 mm has been added to Smart Line range of passenger seats. When mounted in pairs, the total size reaches 849 mm, including the hinged armrest on aisle side.



**VOITH** - At the Kortrijk Busworld, Voith presented the DIWA.6 automatic transmission, the multi-awarded braking system Aquatarder SWR (Secondary Water Retarder), the telemetric system DIWA SmartNet and the air compressors.



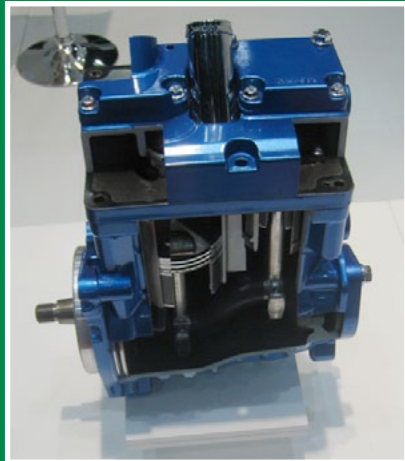
The DIWA automatic transmission was specifically developed for buses. Compared with its predecessor model, the DIWA.6 can save almost another 5% fuel. Apart from utilizing the topography-dependent program SensoTop, this is made possible by the need-based reduction of the operating pressure and an intelligent start-up management.

The Voith Aquatarder SWR is the first secondary retarder to brake with water using the cooling agent of the engine. This means that it does not need an additional operating medium and is able to perform up to 90 percent of all vehicle braking operations wear-free. In addition, it requires only half the installation space and is 35 kg lighter.

The telemetric system DIWA SmartNet is an integrated solution for monitoring the driveline and allows fast and direct access to operating data. With the new generation DIWA SmartNet 2.0, data for transmission diagnosis can now also be transmitted via WiFi.

The Voith air compressors are also suitable for the new EURO-6 engines. Produced with aluminum lightweight design, the two-stage compressors are a series feature of Daimler, MAN and Volvo coaches.

The Voith air compressors can save up to 1 litre of diesel per 100 kilometres.



**LAZZERINI**

The whole range offers high tech solutions with seats that integrate the components necessary for the operation of electronic devices, starting from the sockets for charging mobile phones, computers, tablets and so on.

There are also LED individual reading lights and lighting under the seats (instead of the lights on the aisle). There is a possibility of electric heating and fan cooling, electrical footrest, seat belts with adjustable height, courtesy lights even in the pocket for storage, smartphone support and a 10-inch screen on the back. To get to the table with a glass holder of increased size.



**BRIST** - It presented a solution for the rear axle independent suspension of electric and hybrid buses, as well as airport buses. It includes a central connection from the differential to the wheels with universal joints. The central differential can be controlled by electric motor or internal combustion engine.

The differential is positioned underbody, suspended with brackets. The steering angle with single wheel is 35 degrees.



**FOGMAKER**

There is a fire detection system for a bus engine compartment using high-pressure water mist in combination with special nozzles, so as to create microdrops with an average size of 50 microns. During the evaporation process, the water mist cools the combustion gases and the engine compartment hot parts, rapidly extinguishing the fire and reducing the risk of re-ignition. The created vapor prevents the supply of oxygen to the



fire. The Fogmaker system includes a low concentration of AFFF to create an aqueous insulation film for the effective combustion suppression.

**CUMMINS**

Last October at the Kortrijk Busworld Cummins presented the latest ISB engines with the new SmartEfficiency ratings for 2017, complying with the upcoming Euro VI OBD C requirements. OBD C is the latest step in the Euro VI standard for new vehicle approvals from 31st December 2015 and all vehicles from 31st December 2016.

For 2017 Cummins will offer new ratings specifically developed for bus operation. Substantially it will be improved the torque at low rpm, from 700 rpm/min, so that it will be delivered improved vehicle acceleration across all the rev range.

The ISB4.5 four-cylinder engine moves up to a new peak torque of 850 Nm against the previous one delivering 760 Nm while the ISB6.7 six-cylinder engine moves to a high peak torque of 1,200 Nm from 1,100 Nm along with a new 300 hp/224 kW top bus rating as well as a new 320hp/239kW top rating for coaches. These improvements increase the scope of Cummins product offerings for the bus and coach sectors, being suitable for wider range of applications, vehicle weights and working cycles. "Euro 6 has changed the landscape for engine installation and operation, and the previous rules don't apply any longer. Our objective for 2017 has not just been to meet the regulatory requirements but to improved performance and efficiency with no changes to displacement or hardware", said Claudio Barcena from Cummins.

