

The motorhome of the future

Roller Team chooses the venue of the Düsseldorf Caravan Salon for the world preview of the Triaca Concept 230, which represents the brand's new challenge in designing an extremely innovative recreational vehicle in terms of functionality and eco-sustainability.

Concept development was made possible thanks to the participation of Roller Team, as promoter of the project, in the "Research & Development" funding program sponsored by the Tuscany Region in 2012 and applied to the sector of recreational vehicles. This is how TRIACA was born, acronym of the Italian "Tecnologia per Ridurre l'Impatto Ambientale in Camper" or Technology for Environmental Impact Reduction in Motorhomes. This project combines the application of innovative technologies in order to reduce the energy consumption of motorhomes and improve their environmental impact during the utilisation phases with an innovative study concerning the optimisation of interior spaces (distribution, ergonomics and mechatronic applications) thanks to the development of a basic design. Again in the area of reduced environmental impact, the project offers new advantageous solutions as concerns the LCA (Life Cycle Assessment), from the pre-production phase to the transport phase, in order to verify the environmental impact of the motorhome, focusing on emissions of KgCO₂ eq and CED (Cumulative Energy Demand). This analysis makes it possible to identify the guidelines for designing the life cycle of the new product (LCD or Life Cycle Design), which will originate a second study on the new industrialised vehicle, in order to quantify the obtained improvements as far as the environment is concerned. The project featured the joint participation of Roller Team and DIDA (Department of Architecture of the University of Florence); CPTM (Magona Technological Hub Consortium); CUBIT (Consortium Ubiquitous Technologies: technical support during development of the executive project); DISCO of the University of Siena (Department of Communication Sciences).

"We set out to create the Motorhome of the Future: innovative, technologically advanced,

extremely functional, but that could immediately be put in production. This means that we did not start with impractical or unfeasible concepts. The basic idea was to re-interpret already known logics and to apply them to the motorhome in order to improve its habitability and the distribution of interior spaces, reduce its environmental impact and test out a few solutions present on other products in order to apply them to future productions", explained Paolo Bicci, Managing Director of Trigano SpA, the company that owns the Roller Team brand. Triaca Concept is less than 6 metres long, easy to manoeuvre and designed to be approved for 2 or 4 people. Thanks to the intense Research & Development effort, it presents itself as an extremely innovative solution for the optimisation of spaces, and for the use of new materials and technologies yet to be tested in the sector of recreational vehicles.

INTERIORS

Functionality of the interiors, living solutions and spaces. The distribution of spaces is based on a careful ergonomics study in terms of safety, usability, transformability, modularity and flexibility. There is a strong reference to the furniture sector as far as the shapes, finishes and materials are concerned. The plan develops over a length of a little less than 6 metres. The layout is apparently the "classic" type and features the arrangement of a living area with dinette, kitchen, bathroom and sleeping areas. Dinette/Living area characterised by functionality and dual usability, in both the daytime and night time version. All the elements can be transformed depending on the needs: innovative mechanisms allow you to

turn sofas into "chaises longues", to electronically move the seats to the relax position or to even convert them into a double bed. Fold-away elements carry out the dual function of a seat and/or support surface. The table features an electric telescopic leg and folding top, made of "soft touch" laminate, with anti-bacterial properties and extremely resistant to collisions and scratches. The extremely comfortable pillows are made of polyurethane foam with low environmental impact, while the "eco-sustainable" fabrics are made using fibres from recycled material, which is in turn recyclable. Thanks to the new remote-controlled electric pop-up roof, it is possible to set up the sleeping area while leaving the dinette untouched, thus increasing the habitability of both spaces. Design and functionality are the distinguishing features of the kitchen. This area features an extremely innovative design in terms of shapes, materials and technological solutions. The Triaca kitchen is characterised by: large stowage capacity, electric induction hob that can be removed to be used outdoors (for a larger



From left: Albert Colom (Sales Manager Export), Paolo Pisani (Sales & Marketing Director), Giorgio Calderoni (Product Manager), Andrea Martelli (Designer), Paolo Bicci (CEO Trigano SpA)





work surface), worktop and sink made of PRAL (anti-bacterial material) equipped with sink lids that can turn into dish racks/cutting boards and with an electronically-controlled mixer tap (with air mixing, that allows you to save 70% of water). The refrigerator consists of two distinct compressors that can also be used separately by means of the SEC (Smart Energy Control) system, for lower energy consumption. The tight spaces of the bathroom underwent ergonomics studies in order to achieve maximum freedom of movement in less than 1 square metre. The washbasin and fold-away modular containers, such as the shoe rack and a small cabinet that can be used to hang clothes or store other objects, make the most of the available space. The innovative single-piece tap that separately controls the ceiling shower, the washbasin mixer tap and the independent shower head ensures, thanks to air mixing, significant savings in terms of water consumption (20%). Lastly, the minimal and modern design makes the motorhome very elegant and pleasant to use.

TECHNOLOGY

The applied technological solutions are known and commonly used in other manufacturing sectors. Roller Team is applying them for the first time to motorhomes through the Triaca Concept, offering the ability to transform interior spaces through the use of electric or manual mechanisms. On the left side of the Dinette, there is a relaxation-reading seat, equipped with an electrical remote control, and the fold-away bed, which is light and easy to position. On the right side, the sofa can turn into a chaise longue thanks to the manual movement of part of the seat that, through a friction hinge connected to an aluminium frame, becomes a backrest and is completed by the electrical footrest movement. A particular innovation is a lifting system for the roof above the Dinette. The roof can be popped up by means of an electrical remote control to expand the habitability of the Dinette. In addition, the large space created in height allows the positioning of an elevating bed, thus ensuring maximum habitability of both the day and night living quar-

ters. Control Panel – The touch-screen control unit with Wi-Fi system can be remote-controlled from smartphone or tablet through the special App developed on Android operating system. The control unit allows constant monitoring of consumptions, optimising the available resources and the residual autonomy thanks to settings that can be updated based on the number of users or on how long the motorhome will be used. In order to optimise energy consumption even further, the interior lights can be set by selecting one of the pre-defined scenarios from the control unit, such as sunset, dawn, dinner and relaxation. Research & Development activities also focused on the search for new materials able to comply with eco-sustainability requirements. Consequently, environmentally-friendly proposals were developed pertaining to both the materials used and for their processing, from the pre-production phase to the transport phase (LCA – Product Life Cycle Assessment). The innovative materials applied for the first time to the motorhome sector and which are undergoing at present a thorough study so that they can be industrialised, are listed here below:

-Polypropylene honeycomb panel for the interiors and exterior shells made of composite, without using wood for external elements, guaranteeing lighter living quarters.

-Film photovoltaic panel with lithium-ion batteries. It guarantees self-production of electricity and it is characterised by: lightness, quick recharge times and long-lasting autonomy thanks to the set of lithium batteries.

-PRAL -material used for the kitchen top/sink and bathroom. It is anti-bacterial, easy to repair, waterproof and resistant to collisions.

-Marine wood – used for certain bathroom elements (furniture and shower plate cover); it is extremely resistant to water.

-Ecomalta – the floor features an internal layer of Ecomalta, a material that is already being used in the construction sector and is known for its high structural resistance to collisions, for its anti-stain properties and for the fact that it is easy to repair. Last, but not least, it is an extremely eco-friendly material.

-Basalt fibre – the external structure of the motorhome is made of a resin with basalt fibres, a material that is fully recycled and totally harmless, both to the touch and during the processing phases. Compared to the regular fibreglass, basalt fibre is 30% more resistant and lighter, thus resulting in lower energy consumption and reduced CO2 emissions.

-Upholstery/Padding – the upholstery used for the pillows is obtained from processing recycled material, specifically plastic bottles. Its main property is its high breathability since it is made using materials of vegetable origin.

