

# Project 2000 launches a new generation of RV steps

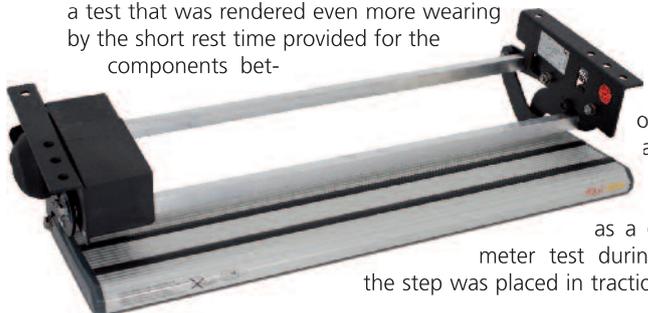
Ten years after its invention and market launch, the 10750 RV step is being retired to allow for a second generation of products with some important improvements, thanks to the use of new materials and modern building technologies

**F**or Project 2000, launching a new range of RV steps to replace the 10750 line, which has provided so many rewards for Davide Nardini and his family's business venture, turned out to be a real revolution. The 10750 RV step has been assembled onto campers around the world for over ten years. A system based on a mechanism that allows for the step's transfer and electrical closing under the body of the camper. Over the years, technical evolutions have resulted in the introduction of anodized aluminium non-slip mats, a cold galvanizing and paint process, providing a high degree of resistance even to salt spray, with a coefficient equal to that of hot-dip galvanizing. Today, this step is being sold to RV manufacturers in Europe, the U.S., Australia, Canada, China, Thailand and Saudi Arabia. However, the original project no longer allows for

improvements. "We had nowhere to go with the 10750 step, in terms of developing improvements, without essentially having to intervene on the entire design," states Project 2000 founder Davide Nardini, "and so we decided to create a new generation of steps, trusting in our cumulative experience on the current series spanning over fifteen years. Our mission was to improve quality, drastically reduce the weight and contain costs, yet maintain unaltered the excellence that typically characterizes our products." Compared to the first generation, which ranked very high from a qualitative standpoint, additional safety features were introduced, redesigning the gear mechanism in order to absorb shocks and thus avoid damage, in the event that the user steps onto the platform



before it is perfectly open. A sturdier mechanical design was provided, both while moving and static. In addition, detail is that the new step is 30% lighter compared to its predecessor. The new 10750 steps will make their world premiere showing at the Düsseldorf 2014 Caravan Salon, and are already ready to hit the market. In fact, they've successfully passed the structural stress tests. Specifically, the definitive version of the 10750 has been subjected to 85,000 opening and closing cycles – a test that was rendered even more wearing by the short rest time provided for the components bet-



ween one cycle and the next – as well as a dynamometer test during which the step was placed in traction for 40

minutes – compared to the 5 minutes stipulated by regulatory standards – with a force of 250 Kg. In this type of test, problems tend to arise during the first 15 minutes, when materials that are not sturdy enough will enervate, give in, or stretch out. The 10750 remained perfectly within the acceptable range limits, i.e. a maximum stretching of 5 mm once the traction was released. "Our technical department produced some noteworthy results. We introduced new materials to lighten the system, but we wanted to keep using steel for parts with greater exposure to loads, especially those subject to major stress generated when the foot is placed firmly on the step," continues Nardini, "and that was only the beginning. We've already engineered the new 10856 step, and it is expected to become a major player for our future production. Our outlook tends toward a long term vision, with additional investments in development and manufacturing processes. In fact, our newest products have been designed to be built with a high degree of automation, using constant manufacturing standards, reduced assembly times and consequently cost savings."

## Special Preview

### the new 10856

The all-new 10856 will also be making its world premiere appearance at the Düsseldorf Caravan Salon, a horizontal sliding electric retractable step. A totally new design that makes use of a variety of materials: the required task. The 10856 is a complex RV step that features a casing into which the whole system is enclosed, and a footrest that moves in and out of the casing by sliding on two lateral runners. The new step design had to take into account problem issues with dirt accumulating in the casing – albeit already reduced to a minimum with the old generation of steps. In addition, the primary goal was to lighten the system. “The current 10856 is a perfectly desi-

gned product, which has never created any problems,” continues Davide Nardini. “For the second generation, we worked on lightening the design and reducing costs, introducing numerous plastic parts. Plastic is a robust, lightweight material, and even though initial investments can be substantial because moulds have to be created, it ultimately allows for contained costs and the adoption of solutions that result in quicker assembly times, right from the moulding phase.”

Tests were conducted with consulting provided by a qualified engineering firm, which created a series of tests on materials relative to temperature and mechanical resistance factors. ANSYS was used as a software application to

provide simulations for a wide range of different physical scenarios relating to structural and thermal behaviour: specifically, steady-state and transient thermal analyses; static structural analyses, both linear and non-linear; a modal analysis to calculate the natural frequencies and of structural vibration modes; and transient tests assessing the dynamic effects associated with time-varying loads. One of the parameters set stipulated that when open the step had to resist to a front-end force of 80 Kg without sustaining any damage, and that each of the two platform support arms resist up to a weight of 250 Kg, with a safety ratio of 1:3; i.e. supporting a weight of up to 750 Kg.

## The model 12673 in an automatic version too



The design for the 12673 retractable bed was born with the layouts of a rear queen bed, and independent toilet and shower areas. To allow the crew members to move about with ease in the rear area, lengthy vehicles had to be built. With the 12658 bed, Project 2000 introduced a retractable system that allowed for a shortened rear wall design, by up to 220 mm.

When the bed frame moves back, the back tilts to a maximum angle of 114°. In 2014, this mechanism was further improved with the development of the Easy Lift Project, a system that facilitates the pushing of the retractable frame and requires only minimum effort by the user. The innovation presented at the Düsseldorf Caravan Salon is the electrical version of the 12673, with the motor and components perfectly integrated in the frame. The electrically powered handling system also features a lightweight design. The frame has a collapsible front opening movement and can remain open even during the retraction process.

## A low lying bed slat design

Yet another technical innovation is the low lying bed slat design, which was born out of the need to have the bed rise as high as possible, especially where limitations exist in relation to internal height. The race to contain the external height of many vehicles has created problems in the positioning of the variable height front bed. In order to not have to reduce the thickness of the mattresses to a minimum, thereby affecting the comfort of users, Project 2000 presents a solution that allows for an extra 40 mm in height, and up to 60 mm more using flat slats instead of curved slats. The mattress takes up 6 cm in the 9.8 cm profile, leaving only 4 cm uncovered. Normally, the profile's outside thickness is 8 cm. The mechanical components can be installed in the retractable roof, just like the standard version.

