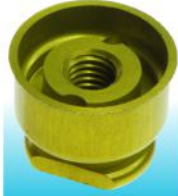


SECAMnida®

Innovative Potted Insert for Sandwich Panels



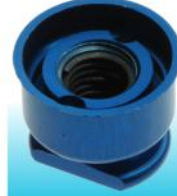
06-32 UNC



08-32 UNC



10-32 UNF



1/4-28 UNF



Floating
+/-1mm in x/y

Revolutionizing sandwich panel fastening is the challenge successfully accomplished by the Haut-Savoiebased company SECAM with its SECAMnida® insert.

In addition to its obvious qualities in terms of reliability and time saved during manual installation, it is easy to automate thanks to the effector developed by GEBE2.

HOW THE PROJECT STARTED

Innovation is the trademark of SECAM Fixing Solutions, the screws and inserts specialist for plastics, light alloys and composites in the HBP Group.

«Innovation is part of our corporate culture. We work hand-in-hand with our customers to develop bespoke solutions adapted to their needs,» says David Rigal, Director of SECAM.

In 2012, this agility and openness led the SECAM teams to focus on finding a more practical, less costly solution than the existing NAS inserts. The request came from a major operator in the high-performance composite materials market. After prototyping and testing, the SECAMnida® insert was finally patented in 2016.

WE TAKE A CLOSER LOOK AT THE MOST OPTIMISED POTTED INSERT FOR SANDWICH MATERIALS ON THE MARKET

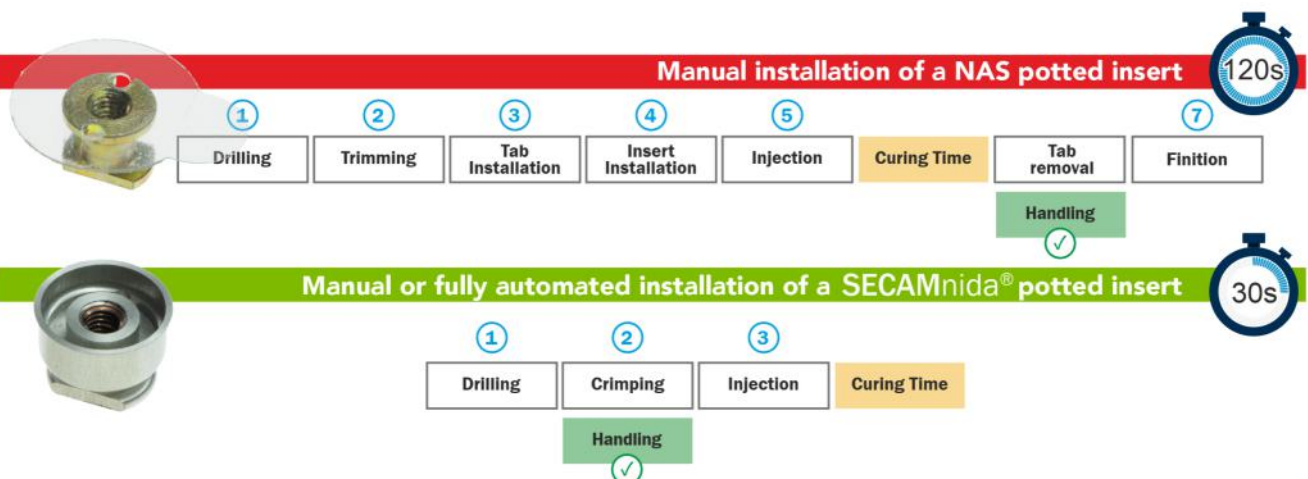
SECAMnida® is not just a potted insert for honeycomb sandwich panels. Its highly reliable technology revolutionizes installation.

This fastening has a reinforced locking thread and is crimped onto the upper skin of the sandwich panel by deformation of the part. This effective anchoring permanently holds the insert in position and means the panel can be handled without risk, unlike the current inserts which are held in place simply by a self-adhesive “positioning” tab and which can tip in their hole before or during the potting operation.

After crimping, the two-component potting compound can then be injected, and filling is accurately controlled by the filling indicator.

Whereas the current NAS inserts require seven operations to install them (drilling, trimming, etc.) and immobilisation of almost 24 hours for full curing, the

SECAMnida® insert offers unrivalled efficiency. It is fitted in only three steps, reducing the installation time from two minutes to thirty seconds, and the panel can be handled immediately to continue its manufacturing process.



From the point of view of reducing non-quality costs, the savings generated by our technology are extremely significant: if a geometric defect due to non-compliant installation is detected after potting traditional NAS inserts, a complex, costly repair is required. Using the crimping tool specially developed for **the SECAMnida® insert guarantees a high level of repeatability and positioning** (flushness, coaxiality).



Another advantage of the **SECAMnida®**: its weight. The insert is made of an aluminium alloy combining strength and cold forming properties for crimping, with reinforcement of the interior threads and the addition of a stainless-steel threaded insert to achieve the best mechanical strength/weight ratio.

This quality makes it a real answer to the challenge facing the transport industry of designing lighter parts. This challenge has become even more pressing in the current context of reducing energy consumption.

With time saved on the assembly lines, weight saved on the final object and reduced non-quality costs, **SECAMnida®** meets manufacturers' search for innovation.

AUTOMATION A SURE BET WITH GEBE2

The two industrialists began working together at the Paris-Le Bourget Air Show in 2019. Aware of the difficulties and costs linked to automating the installation of NAS-type potted inserts, GEBE2 was seeking a reliable, economical solution.

An exclusive partnership agreement was signed to progress beyond the idea stage and produce a demonstrator. **The study was launched and GEBE2 developed an all-in-one robotised effector able to drill, crimp, inject the potting compound and perform a fully automated final inspection.**

The alliance between the two industrialists has led to a fully robotised solution for the installation of fastenings in all types of sandwich panel, both honeycomb and other.

It offers numerous advantages:

- **Improved repeatability** of the insert installation operation
- **Automation of quality control**
- Possibility to provide **traceability of all the operations**
- **Versatility and adaptability** of the system to the geometries of complex parts

TODAY AERONAUTICS AND TOMORROW...

The disruptive innovation of this new automatable insert immediately attracted the interest of one of the world's largest aeronautical equipment manufacturers.

After four years of an enriching collaboration and numerous laboratory tests, all the milestones were successfully passed. **Today the SECAMnida® is qualified and is an integral part of the current production of first-class and business-class seats.** The volumes used already represent several hundreds of thousands of inserts.

This collaboration opens up new prospects for the two partners, particularly with the needs of the aerospace market where the standards for installation of inserts are much more stringent and automation could make all the difference.

The adventure has only just begun. SECAM is now focusing on extending the range with new innovations.

