


# Innovation for the non-stick valve

INDICATIONS FROM THE MARKET LEAD TO INNOVATION IN COMPONENTS THAT ARE OFTEN CRUCIAL FOR SYSTEMS ON BOARD. WE LOOK AT THE EXAMPLE OF THE ALEX NON-STICK VALVE, THE PROCESS THAT LEADS FROM AN IDEA TO ITS IMPLEMENTATION, IN AN ITALIAN COMPANY OPERATING IN THE YACHTING SECTOR.



Alex, the recent non-stick valve for the yachting sector produced by the Guidi srl company based in Grignasco. Compactness and optimisation of working components are the innovative elements of this product.

**M**eeting the Guidi srl in the Piedmont town of Grignasco gave us the chance to understand how the process of creating a product for yachting is the result not only of precise competences in the sector but above all the ability to interpret customer needs and translate an idea into an innovative product, such as the recent Alex non-stick valve. The development process of the Alex valve was explained by Daniele Guidi who, with his brother Alessandro and under the guidance of his father Bruno, manages the family company. The Alex non-stick valve, designed for the yachting sector, interprets the need to improve the functional characteristics of a component that is crucial for the engine and for systems on board in general. This component which, like many others in the company's catalogue, is designed on the basis of indications from the specific market in which the Guidi company has operated for decades, represents a technological evolution of a consolidated line of company products. Non-stick valves appear in the company catalogue alongside a multitude of accessories in bronze, brass and aluminium, including seacocks, drains, purification filters and joints. These yachting products are obtained through production process consolidated over time in the design office and production departments of the Grignasco headquarters, in close collabora-

tion with external suppliers in the design and production development of raw materials which, in the company departments, undergo specific processes before passing to the assembly, testing and packaging departments.

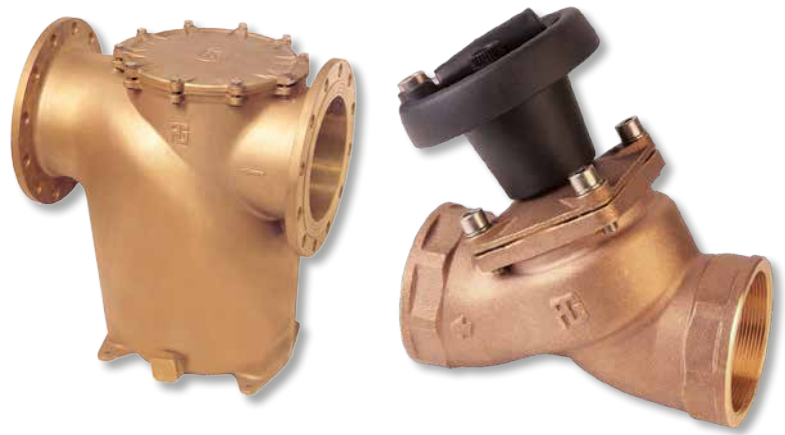
### Guidelines for the Alex project

In line with the criteria that over the years have inspired the creation of the various components today in the Guidi company catalogue, Alex too was inspired by what the company management sees as the real requirements of the yachting market because, as company founder Bruno Guidi underlines, "to innovate you need to accept the demands of the market and imagine appropriate solutions which, thanks to the experience we have built up in design and production, we attempt to translate into innovative objects, with better functions and characteristics than existing products." So it is no accident that the company has 13 patents protecting the thousands of products it offers to the market. Alex too follows these principles of innovation, which suggested the design of a non-stick valve with better performance, that is improved water flow and reduced leakage. Alex is the latest of a series of valves based on recent patents; its design guarantees excellent non-stick performance during use in the hostile marine environment, with its salt water, and greater compactness thanks to a smaller body. Available in a range from half an inch to 5 inches and with an

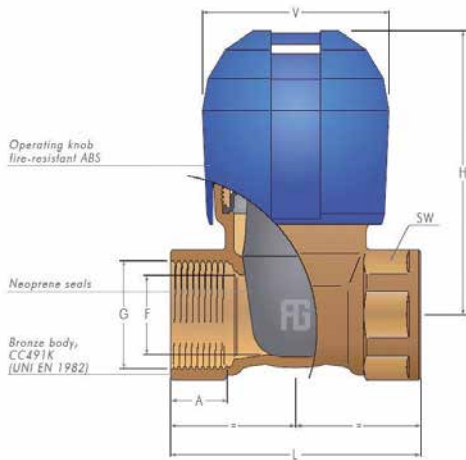


Photo by Jill Mathis

The Guidi family runs the company, managing all activities from the development of an idea to the production of products and their launch in the market. From the left, company founder Bruno Guidi with his sons Daniele and Alessandro.



The range of products produced by the Guidi company includes, alongside valves, also filters, joints and traditional yachting products and more. In the photograph a flanged bronze filter for water purification and the 2210 non-stick valve of which Alex inherits the working system. The preferred materials for these products are brass and bronze, which are worked on in internal departments with specific production resources under the guidance of experienced staff.



In the first phase of the Alex product materials and geometry of the body and the various working components of the valve are defined.



The design of Alex involved 3-D CAD modelling to verify the overall structure. The photograph shows the open/close indicator on the cap and its connection to the valve body.

exclusive threaded fixing system, Alex is produced completely in bronze, a material preferred in the yachting sector to brass, because it creates fewer problems in use while offering great reliability and optimal cost for its characteristics. This reliability, extremely necessary in a context where the growing sophistication of systems makes engine and electronic apparatus cooling components critical, is a point of reference and a guideline for the creation of Alex. In this way, with no compromises on the design front, Alex earns its place in top-level solutions for the yachting sector.

### Design and production process

Following the evolution of earlier patented models of non-stick valves and inspired by the idea of greater compactness, the Alex project began in 2013 and was developed in little more than a year, from the design phase to the start of production.

The company design office, which uses external collaborators in the development of design details, drew up the structural scheme of the valve body and the details of the working parts inside.

It is the particular configuration of the internal system, a complex closing mechanism without the traditional ball, that makes the water flow more fluid and avoids any blockage of the valve, while the

external housing ensures the compactness of the finished product. Materials, size and patented structure are the characteristics of Alex which, also in aesthetic terms, has a particular covering and method of manipulation. In line with sector regulations, the system has a knob on the upper part covered by a plastic cap which integrates an important on/off control that is simple to use and ensures correct operation. In executional terms, it was the company design office headed by Alessandro Guidi that started off the Alex project, setting in CAD software the geometric references needed to configure the valve body and the working components inside in the correct way. The choice of material is a key element in the design phase, because the quality of the end product depends on it. The choice of bronze was the key to reaching this objective, as was the optimal definition of the internal components of the valve body. The geometry of the body depends on that of the working components inside it, which are thus computed designed to verify their overall compatibility, also in relation to assembly problems. The design of Alex naturally benefited from the experience the design office has acquired over the years, together with outside suppliers that collaborate constantly with the company, and thus have a correct perception of produc-

## HOW IT'S MADE



Photo by Enrica Pastore

The definitive version of the Alex non-stick valve.

The raw component, moulded in bronze, undergoes accurate mechanical processes in internal company departments. The picture shows the component obtained by moulded bronze and semi-finished with threading, before the final assembly of internal components to make the Alex valve.



Internal departments of the Guidi company, based in Grignasco, where design, mechanical workshop processes, control and management of the production and administrative systems are carried out.

tion problems. After the preliminary geometry a 3-D model is created in a CAD environment to verify accurately the individual components and the valve as a whole. After verifying the virtual model a definitive model of the valve body is defined. The virtual model is then supplied to the modelling department for final modifications and the production of physical models for the external foundry. The raw parts of the valve body, obtained by the fusion of bronze, enter the company workshops for all the mechanical processes needed to transform the raw part into a finished part, ready to be assembled with the working components. Mostly made from bronze, these components too are produced in internal departments by mechanical processes, starting from metal bars purchased from selected external suppliers with which the company has long had continuing relationships that guarantee the quality of the raw material. Specialised work centres cut bars of brass or bronze to obtain the parts of the various working components, and also turn and mill semi-finished elements to complete the valve body and, if necessary, make it compatible with the geometry of the specific system of the end-user. Timing and quality are guaranteed by a production system that uses automatic work centres that can transform the bars of raw material into components ready for final assembly. As mentioned, a particular feature of the Alex valve is the cap which, serving as an operational device, has an aesthetic con-

notation that personalises the valve. The design of this cap required a series of careful checks, not just on geometry, to make possible the correct positioning of the internal components and make operation precise. Its particular shape demanded the perfection of a 3-D CAD model before the production of a prototype, produced with rapid prototyping techniques, for the final tests before the construction of the mould and the moulding process.

### Alex ready for the market

From the project to the production of the first prototypes, the complete development cycle of Alex took just over a year. From the purchase of raw materials to the moulding of the raw components and the moulding of the cap, the entire company process took place on an all-Italian production line, organised with external collaborators that work in harmony with the Guidi company. Once the initial prototypes were obtained and assembled, functional tests were carried out inside the company on the product to verify the quality and reliability demanded by project requirements. After the final results, which confirmed that these objectives had been achieved, came the logistical phase, with packaging and storage in the warehouse to ensure a smooth launch of the new valve into the marketplace which, for the company, is 60% international.