GUIDI since1968

WATER INLET “GOCCIA” SERIES

• ITEM 1262 •

inspired by nature

EVERY DROP COUNTS
ALWAYS
goccia

GUIDI since1968 MARINE ACCESSORIES
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EUROPEAN UNION INTELLECTUAL PROPERTY OFFICE CERTIFICATE OF REGISTRATION

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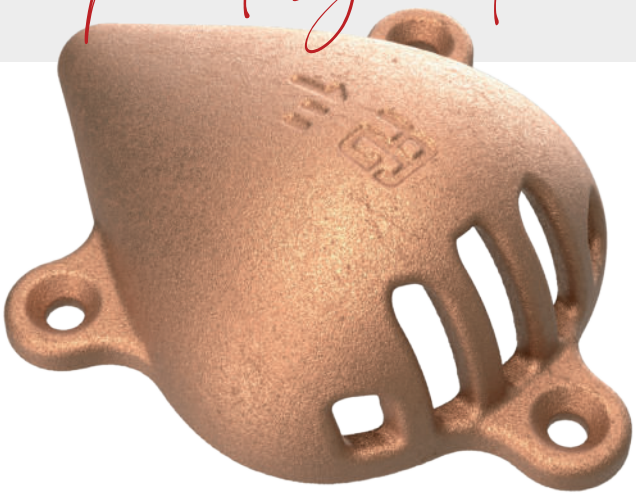


Guidi's latest patented product, the "Goccia" bronze water inlet (art. 1262), has a special story, as well as a catchy name. Its prototype was previewed at METS 2024 in Amsterdam, and it is now ready for the market.

The drop-profile, known as "Goccia" in Italian, is striking in design.
It ensures **perfect hydrodynamics and effectively conveys water without creating turbulence or depressions**.

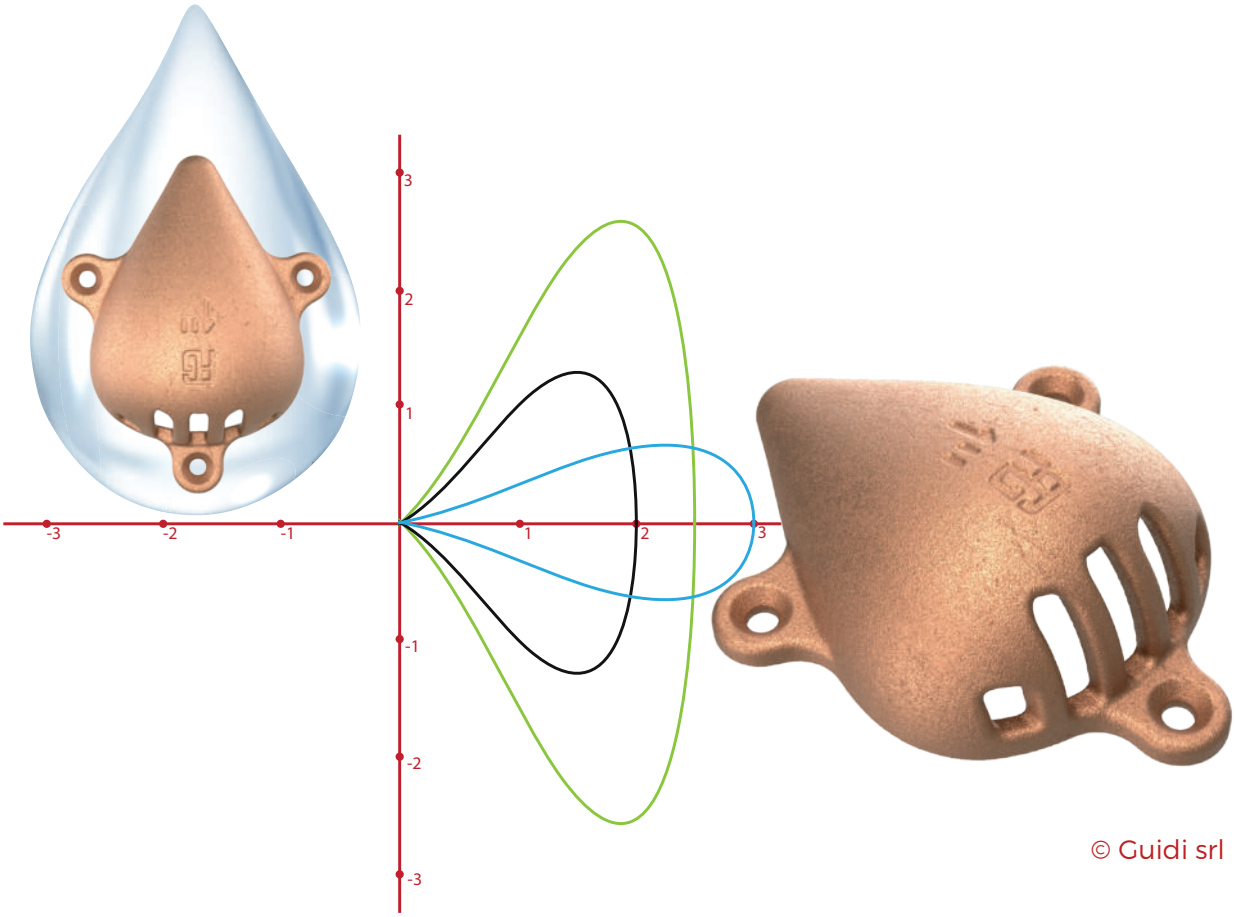
The design was developed by Guidi and verified through a side-by-side collaboration with the DITEN-Department of Naval, Electrical, Electronic and Telecommunications Engineering at the University of Genoa.
The collaboration developed with an existing internal contact at the university, already having a well-established relationship since 2019 for past projects, such as tests performed on "non-stick" and ball valves, as well as marine corrosion resistance of materials, especially bronze.

For the “Goccia,” the focus was on hydrodynamics.
Guidi studied the product’s design and shape, while the university studied its benefits in terms of performance by means of very accurate CFD analyses (Computational Fluid Dynamics) to ensure efficiency and reliability of the product.

The analysis results show key improvements: **enhanced performance, reduced water resistance, increased flow rate, and decreased noise levels** — significantly important in a marine context.

As a rule, noise and efficiency are not compatible; reducing one usually increases the other. However, **the “Goccia” does not present compromises to achieve excellent results on both fronts**.
It is even more interesting to note that as the speed of the boat increases, the positive effects of the new water inlet are amplified.
CFD analysis confirmed the excellent performance of the “Goccia”, demonstrating how inspiration from nature together with the application of numerical simulation tools can lead to innovative solutions in the nautical industry.

The future looks promising for the “Goccia”, as it could become a new benchmark for this type of product.
The “Goccia” exemplifies ‘bio-inspired engineering’ with its stylish design that reflects natural elements.
Its simplicity provides functional advantages, showcasing how nature can inspire innovative solutions.



STYLE

The “Goccia” represents an example of ‘bio-inspired engineering’ for technological solutions that recall natural elements and features a stylish design, typical of the Guidi products.
All our technical products not only offer high performance, but also elegant design with appealing shapes and refined finishes. We create beautiful, long-lasting products that embody the style of our country.

CONSTRUCTION

Our products are designed and manufactured to facilitate production.
The “Goccia” is produced without foundry sand cores. This results in less waste, environmental friendliness and ease of processing and fabrication.

FUNCTIONALITY

The design was developed to solve a specific issue raised by a shipyard that had problems with cavitation and loss of speed caused by traditional water inlet mounted on one of their high-performance boats.
The test results performed on several boats from this shipyard revealed the resolution of the problem, validating the functionality of the design, and moved Guidi to industrialize the design for mass production of the new item “Goccia”.

Reliability is undoubtedly one of our hallmarks. It is a core value that has made our brand one of the best-known and most respected in the Italian boating industry for over half a century.
Like other Guidi products, the “Goccia” is designed to be durable and reliable.

Durability is a product’s ability to perform optimally in the long term under intended usage conditions without requiring expensive or time-consuming maintenance or repairs.

Reliability is supported by quality assurance and the product performance on field that over time maintains the physical and mechanical properties of the materials from which it is made.

These characteristics are ensured by the use of high-quality raw materials, mechanical processing performed with advanced technologies that are constantly evolving, and robust quality controls performed and certified by the appropriate boards.

PROPOSED USE

The water inlet “Goccia” is installed on the hull below the waterline, connected to a through-hull fitting and its mainly function is to convey water inside the hull. This water is used to serve several boat systems: engine, generators, watermakers, toilets, etc.
It works as a first filtering step of the water entering the hydraulic system through the boat hull, and also as a protection.

The “Goccia” design is suitable for all types of boats under its standard purpose.
Compared to the standard water inlets the new design guarantees an increased flow rate of about 35% considering the same size since the external and internal shape does not “brake” the fluid line.

• ENVIRONMENT •

inspired by nature

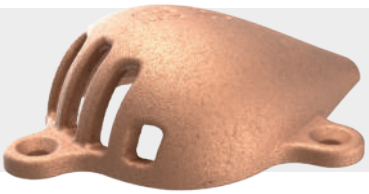
Made entirely of high-quality bronze, it ensures durability and complete recyclability (100% recyclable) at the end of its life cycle.
It also improves navigation efficiency by reducing noise, hydrodynamic resistance, and fuel consumption, contributing to a quieter and more marine-friendly sailing experience.
The “Goccia” water inlet is distinguished by an **optimized manufacturing process** that eliminates the use of sand cores for casting, significantly reducing waste.
This results in less waste, a lower environmental impact, and smoother processing.
These features make the “Goccia” a sustainable, high-performance solution in the nautical world.

Guidi designs by considering the technical, economic, and environmental aspects, **aiming to constantly extend product life**. Product life cycle research is continuous, to identify environmentally critical stages and implement improvements at all levels, from design to sales.

• EASE AND USE OF HUMAN OPERATION •

Cleaning is also simple in the case of debris accumulation.
Simply remove the water inlet and clean the hull and the inlet itself in the area where it is installed. At this stage, it is also easy to clean any fouling or debris from the thru-hull.
The design has no sharp surfaces or edges, so no special attention or PPE is required for installation, removal, cleaning, or maintenance.
These features make the product easy to install, operate, and maintain.

• ORIGINALITY AND INNOVATION •



The “Goccia” features an innovative, functional design inspired by nature that optimizes hydrodynamics.
Its teardrop shape effectively conveys water and optimizes fluid flow adhesion. **This eliminates vortex formation and reduces turbulence**.

The shape is inspired by the pyriform quartic, a type of algebraic curve that looks like a drop. It is characterized by a continuous curve with a distinctive point of maximum curvature.

This design optimizes water flow both inside and outside the water inlet, significantly reducing vortex formation and minimizing turbulence.

Its simple, nature-inspired design offers obvious functional advantages and exemplifies ‘bio-inspired engineering’, which uses natural elements as models for technological solutions.

The use of a drop-profile water inlet brings numerous advantages confirmed and validated by accurate CFD (Computational Fluid Dynamics) analyses carried out in collaboration with the University of Genoa:

- **minimize drag**: turbulence minimization results in a significant reduction in drag induced by the water inlet, resulting in increased propulsive efficiency and reduced fuel consumption.
- **increases the water flow rate**: flow adhesion and geometry optimization allow to increase volumetric flow rate compared to the same size.
- **reduction in cavitation**: the reduction of turbulence exiting the water inlet helps to decrease the risk of cavitation in the propellers.
- **noise reduction**: the reduction in turbulence results in a lower hydrodynamic noise generated by the water inlet, thus improving environmental sustainability.

• PRICE VERSUS PERFORMANCE •

The "Goccia" water inlet offers an excellent price-performance ratio.
Made of high-quality bronze, it ensures greater durability and reliability over time than other materials, reducing the need for replacement.
It also decreases hydrodynamic resistance and fuel consumption, resulting in long-term savings.
Ease of installation and maintenance lowers operating costs, making it a smart investment.
Its longer service life and 100 percent recyclability offer tangible benefits in terms of environmental impact and cost savings.

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