

CLUBSWAN 50







**NAUTOR
SWAN**

HERITAGE

Nautor Swan has always offered high performance racing yachts to complement its classic range of cruising Swans, yachts such as the 39 and the 441 in Racing version. Today the yard uses its new ClubSwan models to test the most modern trends in design, materials and solutions, refining technologies that will then be used to the benefit of the cruising models. Like the Swan 45 and ClubSwan 42, successful one designs still winning in top level races. But with the ClubSwan 50 Nautor has pushed the limits, proposing a yacht that is a small revolution in performance and pure sailing pleasure.

Counterclockwise from top left: the Swan 39 Race version from 1978 designed by Ron Holland, the Swan 45 from 2002 and the ClubSwan 42 from 2006 both disgned by Germán Frers

CLUBSWAN 50



Swiss flag icon Morten Kielland





DESIGN

Juan Kouyoumdjian



Performance comes from two main areas: the first one is optimising the relationship between key parameters such as length, displacement, sail area and righting moment; the second is a specific refinement of these parameters within themselves. Designing the ClubSwan 50, the hull shape and appendages were refined using our CFD (Computational Fluid Dynamics) setup based on Star CCM+. At the beginning we use 0 DOF (degrees of freedom) calculations since we didn't know the weight nor ideal trim of the boat and we analyzed different candidate topologies across a wide matrix of heel, yaw, sink and trim. The next level of refinement is carried out in 6 DOF once we have a good idea of the weight, CG and inertial distribution of the masses. In this case the CFD acts as a VPP, finding an aero-hydro equilibrium between the hydro forces it calculates "live" and an aero model or "aero box" as we call it which is pre-calculated using the same software but with specific aero calculations. The dual rudder configuration was decided very early on in the project since it provides a lot of benefits. To start with the hull shape aft has not had to be conditioned by the rudder position, as in the case of a single rudder,

allowing for a more powerful and optimized shape. From a balance point of view, the dual rudder configuration allows for the keel to be placed further forward on the boat which helps significantly shifting the CG forward and hence allowing for the hull shape to be straighter aft, which has a significant performance impact reaching and downwind sailing. We also featured the tubercles rudder which is a feature that we've developed in recent years that postpones the stalling point of a given rudder. The construction in full pre-preg and Sprint carbon fiber. The structures were designed in complete compliance to ISO Standards. The criteria was to minimize weight while keeping the construction method and procedure in line with that of a serial production setup. I believe we managed to achieve the objective since the weight of all the structural components, including the keel fin, is just over 2'000 Kg. The keel fin itself only being 160 Kg and built mostly of high modulus carbon fiber. The structural criteria for the carbon fin was specifically focused on eliminating flutter as well as satisfying the GL Standard and recommendations, which impose bending and grounding load cases.

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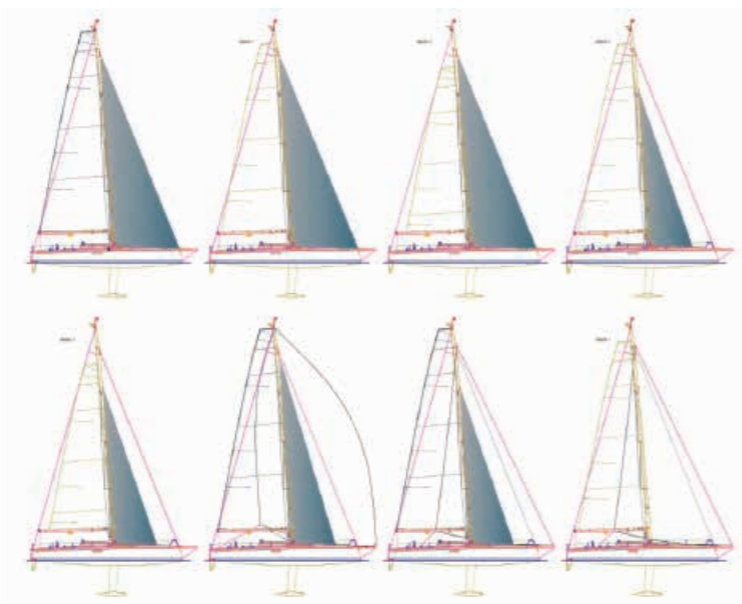


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HULL

The new ClubSwan 50 is at the cutting edge of contemporary yacht design. The brief was clear and simple: an extremely fast boat that would also be easy to take to the limit, convertible into a sports cruiser with limited crew, with captivating looks and the natural elegance of a Swan. It had to be both competitive in class racing and conceived as a One Design. In one word, this yacht had to be cool. The hull is modern and performing with full sections forward and a beamy transom, reverse bow, reverse sheer, pronounced chines, concave aft sections and reduced freeboards. Appendages are in the same philosophy, with a full carbon blade keel and a lead torpedo, and twin rudders for maximum control at high speeds. Construction is light but structurally robust in full pre-preg carbon as are the mast, boom and fixed bowsprit.

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SAIL PLAN

The sail plan is latest generation: the mast has been positioned slightly aft of centre with a longer J ideal for powerful asymmetricals that can be either full or fractionally rigged. The square top mainsail has a full shape thanks to running backstays: a perfect combination for the racing circuit. But the sail plan has also been designed with easy sailing in mind. A few changes transform the ClubSwan 50 into a docile cruiser, perfect for a couple. In moderate winds the running backstays can be positioned at the mast, whilst in stronger breezes the double reefed mainsail passes easily in front of the backstays that can be fixed in position and need no adjustment. The jib, available with an optional furler, is easily handled in any condition, whilst in strong winds the generous J allows for a convenient staysail.

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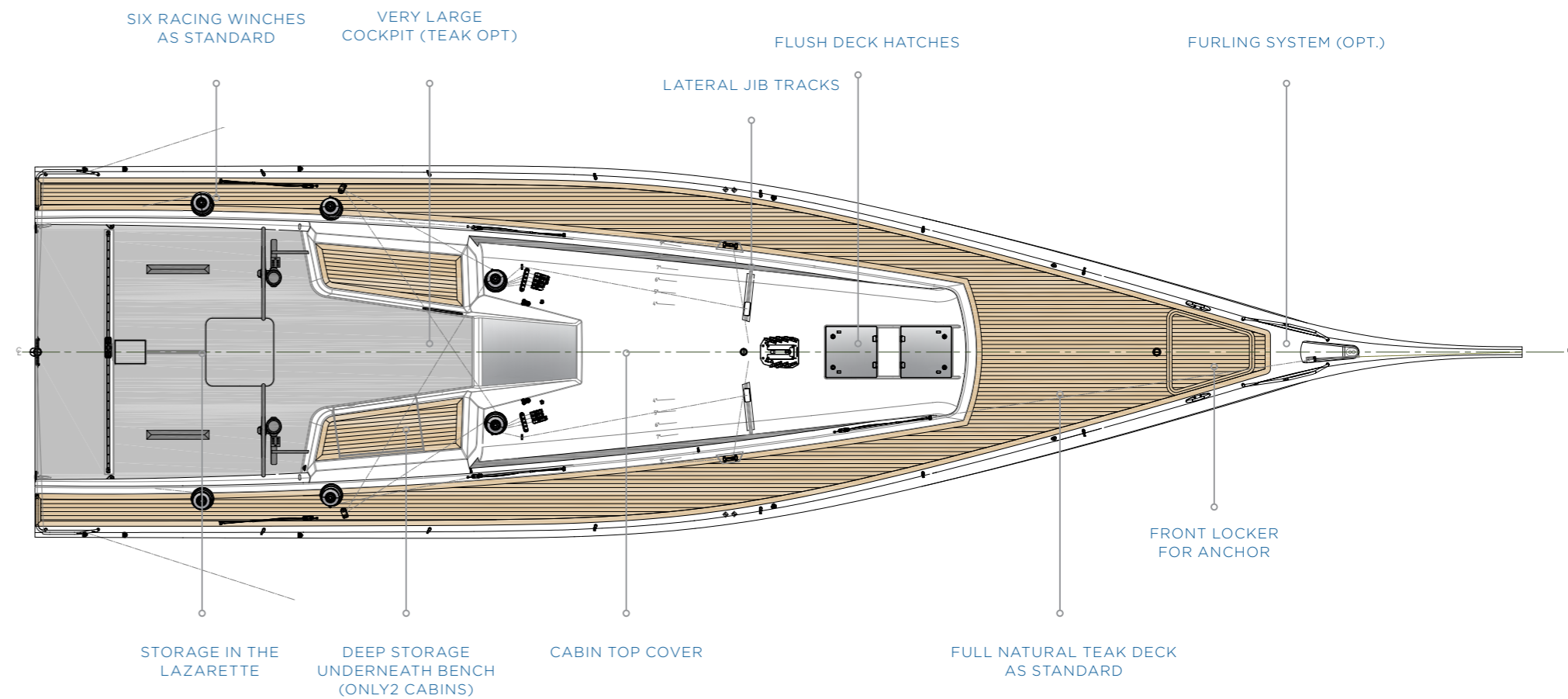
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DECK

Efficiency with a large crew and ease of use for a couple: the deck layout has been planned to be ideal in both cases, another revolution offered by the ClubSwan 50. The transverse jib tracks on the coachroof allow pure performance upwind angles and the six powerful racing winches make sail handling during racing fluid and efficient. In an instant the same layout can be adapted for solitary handling: the four winches around the helm can be used to control every function on board and, with the furling headsail configuration, it is easy to achieve top performance with a reduced crew, gybing without adjusting running backstays.

The optional cushions with rigid back supports convert the cockpit into a comfortable lounging area. The generous storage space with large lazarette aft and sail locker forward, together with options such as bow roller and windlass, transform the ClubSwan 50 into a contemporary sport cruising yacht.

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INTERIORS

Designed as a week-end sailer, the ClubSwan 50 offer enough space and accommodation for a short cruises or longer sports cruising.

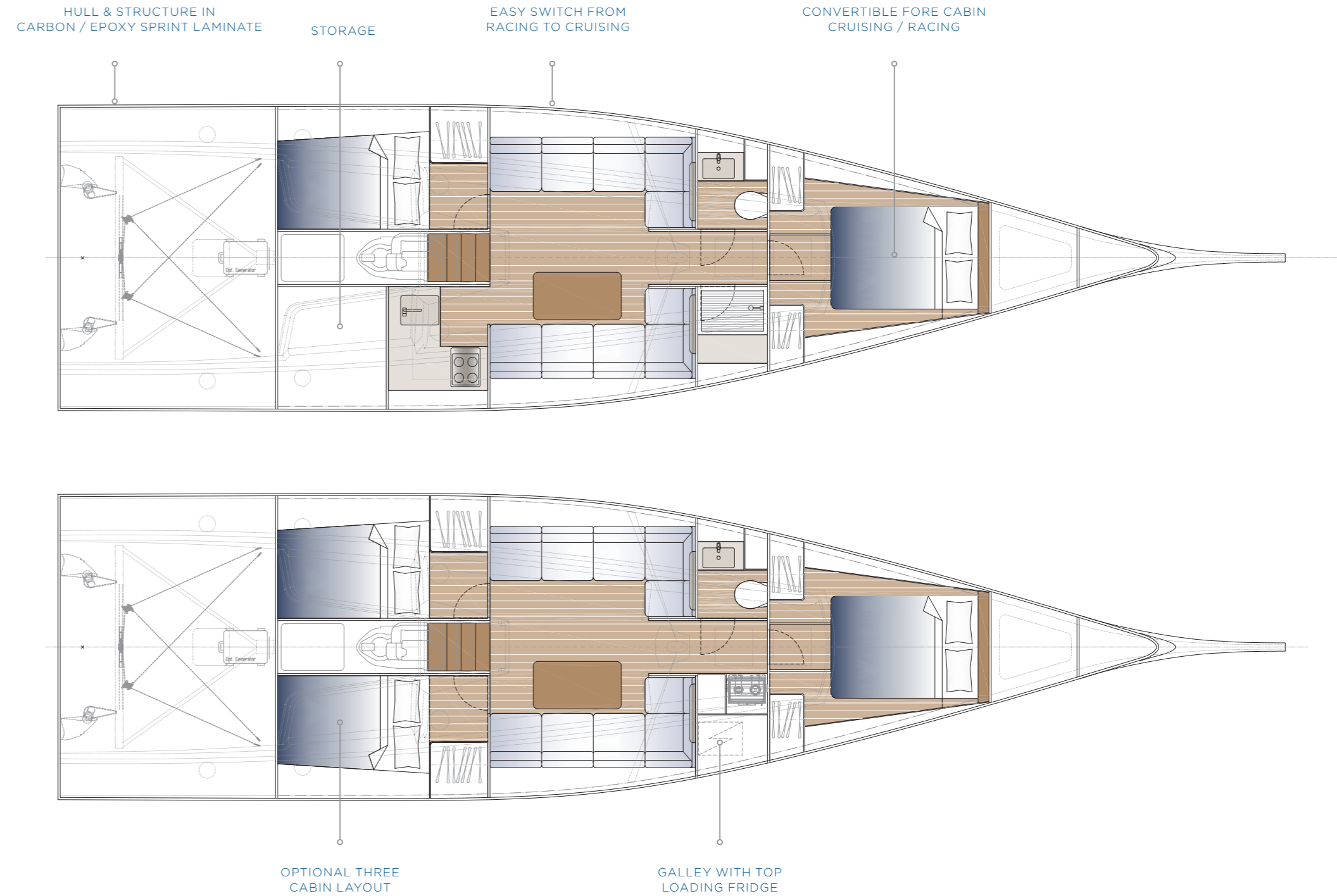
The elegant and stylish interiors designed by the Italian Architect Michel Bönan, feature textiles and leathers surrounded by light composite panels easy to maintenance between races.

The saloon offers spaces typical of larger yachts, with eye-catching twin sofas and an open view forward. The double side mountings create a bridge support for the mast that is deck stepped and creates unencumbered space and allows for unhindered movement below. The large owner's cabin features a double island berth with plenty of locker space made from lightweight, removable components. The heads are separate: one for the WC and one for the shower, and both feature washbasins. Further aft, the full galley is starboard and the double guest cabin is port.

Converting the layout for racing is easy: the forward berth can be removed to make room for sails. Particular attention has been given to the choice of materials, refined and elegant but also light weight and resistant for serious racing. All with the same care and attention for reliability, style and finish that has made Swans the most desired yachts in the world.

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HULL & STRUCTURE IN CARBON / EPOXY SPRINT LAMINATE

STORAGE

EASY SWITCH FROM RACING TO CRUISING

CONVERTIBLE FORE CABIN CRUISING / RACING

OPTIONAL THREE CABIN LAYOUT

GALLEY WITH TOP LOADING FRIDGE



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UNDER SAIL

Stepping onboard, the first impression upon sailing is that this is something extremely special. Leaving the dock under engine, in economic cruise mode she makes easily 9 knots, thanks to her light displacement.

In light winds, the square top mainsail coupled with the generous foretriangle are able to produce plenty of power.

The hull shape is designed to reach optimum performance at 22 degrees of heel angle sailing upwind and the Clubswan 50 quickly settles into the groove, boat speed building impressively. In light wind conditions, the stern has only minimal sections touching the water but when the wind increases, the hull shape improves dynamically offering maximum power without changing longitudinal balance.

The specific design of the rudders featuring unique on their trailing edges, means

that stalling tendency is reduced as well as surface friction. The result is greater control and sensitivity in all conditions, also thanks to the centralised helm positions. If upwind the ClubSwan50 utilises all her hull shape to maximise power, it is down wind that she demonstrate her real DNA, thanks to the 235 m² asymmetric spinnaker flown from the fixed bowsprit. Even in light wind conditions the yacht surfs readily, easily displaying double digit boat speeds.

But it doesn't need a professional sailor to get the best from the ClubSwan 50, because her design has been developed in order to be easily handled in all conditions, even with a limited crew, reaching high levels of performance with ease and in total safety.

Sailing to the limit in a high performance yacht has never been so much fun.

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CONSTRUCTION

Hull structure including keel box reinforcements is a carbon epoxy sprint moulded part cured together with the hull to create a uniform structural unit. • Structural bulkheads in composite carbon epoxy sandwich sprint, bonded to the hull with structural epoxy adhesive. • Two rudders with carbon/epoxy composite stock and shells, foam filled. • Carbon/epoxy sprint laminate, vacuum bagged and cured in the oven at elevated temperature. Sandwich construction with a high performance foam Corecell core • Structural bulkheads are bonded to the deck with structural epoxy adhesive • Teak on the deck • Six Harken winches • Mainsheet track with a roller bearing car on the stern cockpit area controlled with manual purchase system • A fixed bowsprit made in composite and fix bobstay • Bulb in antimony alloyed lead, bolted to short-cord fin • Fin is made of high modulus carbon-epoxy cured in autoclave and oven • Keel is mounted into a hull recessed keel box and fixed with bolts • Keel is designed to be conveniently taken off for easier transportation.

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DETAILS

The quality that has made Swans so famous during the years can be seen in the obsessive attention to detail that can be found throughout the yacht. Technologies have evolved but the spirit with which a Swan is designed and built remains the same: seaworthiness, reliability and style are and always have been our main drivers. That is why on our yachts we use only the best materials and the technologies that have proved their worth and durability in prolonged and severe conditions.



STANDARD SPECIFICATIONS

General

Hull LOA (incl. bowsprit and boom)	16.74 m	54.9 ft
Hull construction length	15.24 m	50.0 ft
Hull LWL	14.00 m	45.9 ft
Beam max	4.20 m	13.8 ft
Draught (empty)	3.50 m	11.5 ft
Shallow draught keel (optional)	2.20 m	7.2 ft
Displacement (empty)	8,250 kg	18,188 lbs
Ballast (approx.)	3,450 kg	7,605 lbs
Engine Volvo D2-40	29 kW	40 Hp

Rig and Sail Dimensions

I	19.88 m	65.22 ft
J	6.30 m	20.67 ft
P	20.04 m	65.75 ft
E	7.23 m	23.72 ft

Sail Areas

Fore triangle (indicative)	65 m ²	699 sq.ft
Main sail (indicative)	93 m ²	1001 sq.ft
Asymmetric Spinnaker (indicative)	235 m ²	2530 sq.ft

Tank Capacity

Fuel	170 l	44,9 USg
Fresh Water	240 l	63,4 USg
Black water	40 l	10 USg

Battery & Power Sources

Engine starting battery	23 Ah 12V
Shore power	230 V 30 A
Service battery	100 Ah 12 V

Design

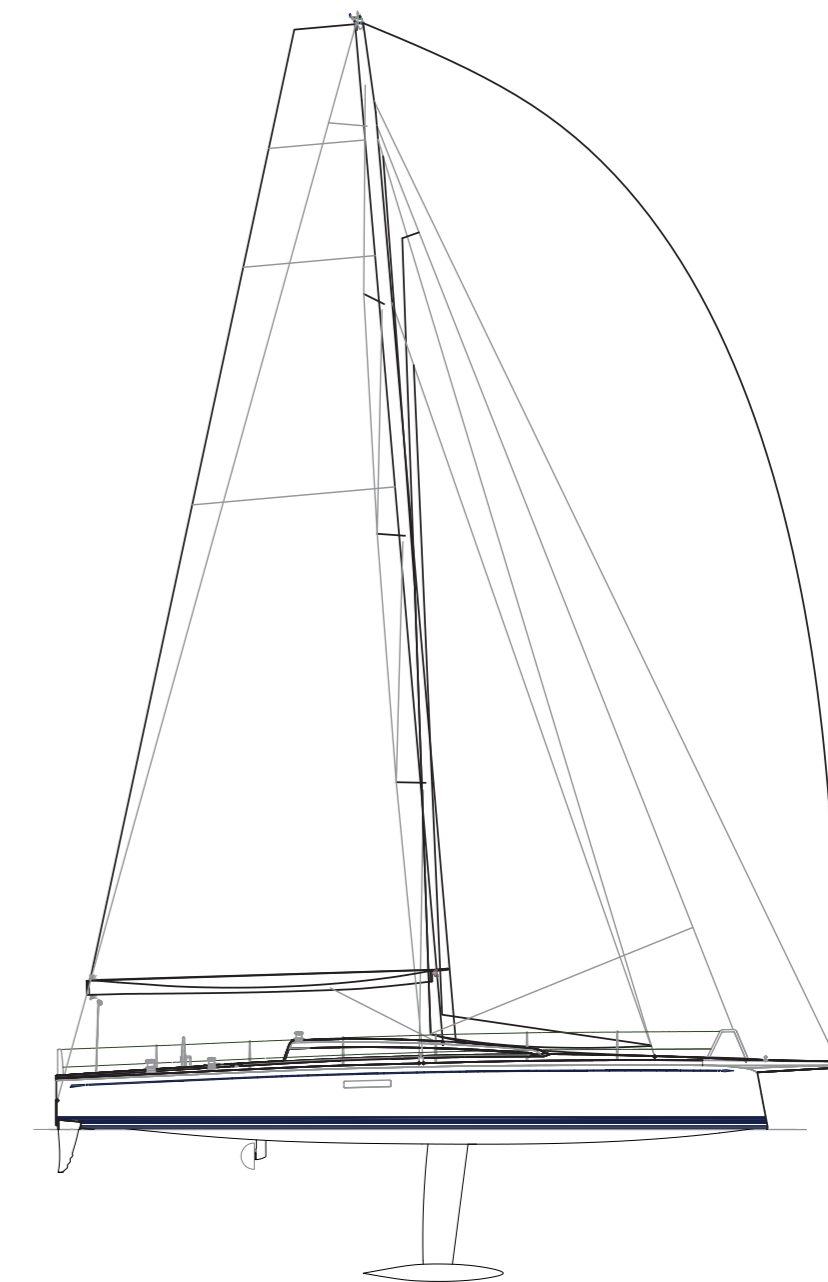
Juan Kouyoumdjian

Engineering

Nautor

Construction Approval

CE-approval: Category A Ocean





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THE CLASS

Nautor Swan has imprinted a strong philosophy within the class to constrain running costs and to reward owners with pleasurable competition. Strictly owner driven, with a limited number of professional sailors onboard and a limited stock of new sails allowed every season, the primary goal is to make racing close and ramp up the excitement. The ClubSwan 50 Class benefits from its own PRO and, at each Class event, will race multiple Windward-Leeward races on dedicated courses.



ANDREW YATES - Class Chief Measurer
Chief Measurer for the Swan 45 & 60 and
ClubSwan 50 Classes.
Class Measurer for the J Class.
RORC Rating Office Technical Consultant.
Naval Architect & Build Project Manager.



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THE NATIONS TROPHY

In 2017, Nautor Swan launched The Nations Trophy as a focal event in the world of Swan One Design activity.

The Nations Trophy is committed to revitalizing the concept of competition between nations. Following the success of the inaugural event, Nautor Swan extended the concept by introducing a season long league in the Mediterranean to maintain the spirit of gentlemanly competition between countries engendered by the original event.

THE NATIONS LEAGUE see INDIVIDUAL CLASS LEAGUE WINNERS and the BEST-PLACED NATION awarded with special prizes.

On the other hand, the SWAN ONE DESIGN WORLDS represent an unique stand-alone event.





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