

Our **MAGIC** Below The Waterline



**Helps You
Balance Above**



The World's Most Advanced Stabilizer System
#zerospeed #underway #electrichydraulic
quantumstabilizers.com

New Innovations at Quantum **REDEFINING** the Future

With innovation and “fun” woven into the culture, Quantum will continue to challenge the status quo, while ensuring the comfort and safety of passengers for generations to come.

For almost 40 years, Quantum has perfected the art of stabilization, offering patented, roll reduction systems that have become synonymous with safety and onboard comfort. With three international patents and two others soon to finalize, Quantum continues to challenge the status quo, while keeping “clean and green” solutions at the forefront of new innovations.

The latest sustainable innovation from Quantum is the new F45 Integrated Hybrid Power System for the 50m+ market. It is best described as revolutionary and technologically ahead of its time. This advanced electro/hydraulic power source uses the best attributes of both hydraulic and electric power systems.

CHALLENGES WITH ELECTRIC

While electric stabilizers have been well received in the smaller boat market (below 50m), the power required to push fins or rotors through the water on a large scale (50m+) is not practical or sometimes not possible.

CHALLENGES WITH HYDRAULIC

Traditional hydraulic systems will continue to draw up to 40% of the maximum power to be “at-the-ready,” even when at idle. This represents a lot of wasted energy. In contrast, the new F45 drops to less than 1 kW at idle or in a standby mode. Unfortunately, managing the power fluctuations can pose a challenge for the generators and the overall grid.

MANAGING FLUCTUATIONS & COMPATIBILITY

To overcome the power fluctuation challenge, Quantum has developed two, very unique, methods of storing and recovering power for future use. This new solution is called MESS—Mass Energy Storage System, has the ability to outstrip a traditional capacitor bank by a power density factor of 8 times at less than half the cost. MESS is 100% compatible with the F45 System.

HOW DOES IT WORK?

The new F45 uses a servo motor, coupled with a low inertia hydraulic pump mechanism that proportionately moves the hydraulic fluid in a closed loop, to sweep the fins. This greatly simplifies the overall system and removes all the components that make hydraulics inefficient.

ADDITIONAL BENEFITS:

- simplified maintenance requirements
- high-dynamic control
- a smaller system footprint
- reduced heat generation, due to improved efficiencies
- reduction in noise / improved sound isolation
- improved vibration isolation

The F45 meets both long-term energy efficiency requirements as well as the peak energy needs of the closed marine electrical system. The first prototype will be delivered and installed on a 46m Feadship refit during the first quarter of 2024. Quantum is prepared to change the “superyachting” world!



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