

## Quantum Marine Engineering

*With Quantum's ZeroSpeed™ stabilization, your superyacht will rock but it won't roll!*

Quantum Marine Engineering of Florida, Inc., has raised the standard in the marine industry with regards to roll stabilization, eliminating up to 80 to 90 percent of the roll under most conditions. Quantum focuses on new installations, retrofits and service repair.

Perfect luxury is now simply being able to anchor in some picturesque bay, beam on to a ground swell, without tall crystal flutes of vintage champagne crashing to the deck, along with the guests. In fact, because they can eliminate up to 90 percent of a yacht's roll and cost less than two week's charter, many builders now don't build superyachts without using Quantum's ZeroSpeed™ stabilization.

Increasingly charterers in-the-know are telling brokers, "Nice yacht, too bad no ZeroSpeed stabilizers, what else do you have?"

However, ZeroSpeed fin stabilization should not be confused with ordinary fin stabilization which is effective only when the vessel is moving. Once anchored or drifting, say to watch a whale, a vessel with regular fins begins to roll, sometimes quite violently, spilling that champagne.

Enter ZeroSpeed™ fins: somewhat larger in surface area but similar in appearance to regular

fins, ZeroSpeed™ fins usually occupy the same "footprint" within the vessel. Under way, both types function in much the same way.

The principle is like a canoe paddle held flat, with its blade a foot or so underwater and the shaft balanced on gunwale. If you're sitting in the canoe, a sharp push down on the handle of the paddle causes the blade to rise, thus heeling the canoe (or capsizing it, if you're having a particularly bad day).

On a much grander scale, flipping a ZeroSpeed™ fin up on one side of a yacht has the same effect. And if you flip the fin on the other side down at the precise same moment, you double the effect. That's why ZeroSpeed™ fins are larger than regular fins.

Simple, right? Well it turns out, like everything these days, the secret is in the software, and timing is everything. The software is adaptive logic based, and the system is designed to constantly monitor and adjust the fin response to meet the ambient conditions.

To be really effective, the fins have to accelerate at the precise moment. That's the really hard bit; it's not good enough to be reactive, but it is here especially where Quantum's technology and experience excels. The latest generation of

software and control algorithms are fully proportional, and the fins respond to the sensor input to deliver the precise fin deflections to correct the roll motion.

The hydraulics associated with the flipping motion is managed by an electronic controller that is receiving input from a roll sensor, which in turn monitors continuously the roll.

Systems like ZeroSpeed™, OnAnchor™, XT™ fin and MagLift™ have provided the marine industry with a variety of solutions for unstable water conditions. Quantum also provides a wide variety of other products: Hydraulic Power Units, Integrated Hydraulic Systems, bow and stern thrusters, alignment and service repair. Its service repair technicians are not limited to local waters—wherever in the world—Quantum superb service and technical support is only a phone call away! ■

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