Bellissimo BENETTI

To get the boat to plane – weight is crucial... and technology is key.

"Ours is a really unique luxury product, probably the most expensive one in the world," so says Vincenzo Poerio, CEO of Italian yacht makers Benetti.

"We build a very special product and for us, quality and innovation are important. Our clients are demanding, always pushing us to do better. We have to give them the best, it's the only way to stay in this market.

Such luxury comes at a price. A basic vessel can cost from about €9 million and can rise to over €200m for a completely bespoke vessel. As a consequence there are only about a thousand potential customers in the market worldwide.

Benetti is one part of the Azimut-Benetti Group. Azimut-Benetti is the biggest luxury yacht builder in the world by quantity, with more than 40 models in production. The group have two yacht brands – Azimut and Benetti.

Azimut produces planing and semi displacement yachts up to 35 metres in length. Benetti manufacture semi and full displacement mega yachts from 30, to in excess of 100, metres. Benetti's vessels can be semi-custom, produced on spec ready to be sold, or bespoke; designed from scratch for a specific client.

The group operates six shipyards, five of which are in Italy, the other in Brazil.

In 2010, the company wanted to enter a new market segment and build a faster, quieter, more manoeuvrable and larger (almost 40 metres) planing or 'sporty' yacht. A yacht able to reach a speed of 24 knots.

Technology

To get the boat to plane – lift as much of the boat as possible out of the water and reduce drag – weight is crucial. The company was already using new lightweight composite (carbon fibre) materials for the vessels' superstructure and fibre glass for the hull. But conventional commercial Azipull thrusters (a device which in addition to providing thrust can be used to steer the vessel) which could supply the thrust needed were far too heavy.

According to Poerio, "technology was the key." The company turned to Rolls-Royce to undertake a completely new and challenging task. To build something unique by mechanically connecting a new type of Azipull thruster with an MTU diesel engine to create a propulsion system which would give speed, efficiency, comfort, low noise levels and good manoeuvrability. The use of Azipull technology in conventional vessels and displacement yachts was well established


IRON MAN

RIGHT The Carbon fibre Azipull C65.
BELOW MTU provides the engine power for Iron Man.

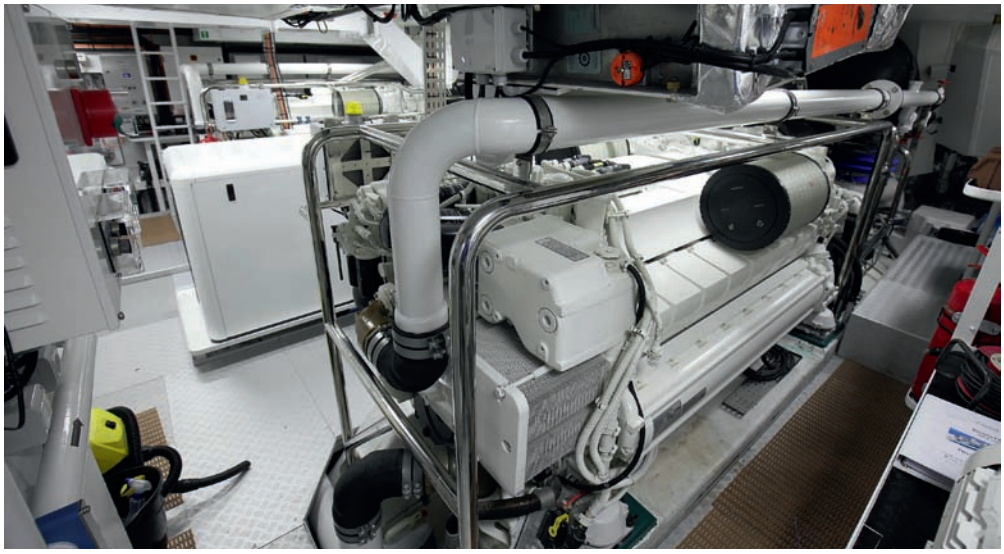
but this was the first time it had been tried in a fast, sporty planing yacht.

The company's response, developed in partnership with Benetti, was the Azipull Carbon 65. The AZP C65 uses carbon fibre material for load carrying parts, for the first time. This results in a substantial reduction of the propulsion system's weight. A traditional Rolls-Royce Azipull thruster would be 20 tonnes. To achieve Benetti's design goals, one at least one seventh of that weight, three tonnes, was needed.

The use of an Azipull thruster allowed other innovative design goals to be met. By incorporating the Azipull into the hull, a new kind of hull design was created increasing overall propulsive efficiency. Benetti's new 'D2P displacement to planing' hull which combines the sportiness and performance of a planing hull with the quiet of a displacement hull.

> *ROLLS-ROYCE GAVE US ACCESS TO TECHNOLOGICAL EXPERTISE AND I BELIEVE WE INTRODUCED THEM TO A NEW KIND OF LUXURY VESSEL.*

Finally, using an Azipull thruster, it is possible to place it in further back in the vessel than a conventional propeller and rudder combination. This allows more space on the lower deck to be assigned to use by the owner. This effectively creates some valuable 'real estate.' As a consequence Benetti has created one of the largest lower deck areas on the market. The volume of the guest area is increased and a larger garage space created across the rear of the vessel. This provides a home for the shuttle boats and recreational craft, such as jet skis, that these vessels tend to carry, plus a wide, comfortable beach area at the most aft.



The product is being improved still further. The behaviour of the boat when sailing at low speed is excellent, according to Benetti. At displacement speed, below 15 knots, the noise and vibration are lower than a displacement boat – a real achievement. Also at planing speed, up to 22 knots, the boat is as comfortable as a displacement boat. Of course a displacement boat, by definition, cannot plane or reach 22 knots.

Despite the fact that the levels of noise,

efficiency and manoeuvrability are better than ever, customers want more. There is still more that can be done. At a certain speed and in certain manoeuvring conditions improvements can still be made; in terms of vibration to get a better result than a traditional displacement boat and make the vessel more comfortable.

Expertise

The first yacht, a 125ft yacht called Iron Man has already been delivered. Boats two and three are under construction. Over the next three years Rolls-Royce will supply thrusters for a number of planned yachts.

"Benetti is the biggest producer of luxury yachts in the world and having Rolls-Royce as a part of that is an ideal partnership for demonstrating the best the market can offer," concludes Poerio. "Rolls-Royce is a world renowned brand; famous for service and excellence in manufacturing. We produce a few very expensive high quality full custom products. Working with Rolls-Royce gave us access to technological expertise and I believe we introduced them to a new kind of luxury vessel. Together we created a fantastic design."

AUTHOR **SIMON KIRBY**

Simon Kirby is External Communications – Marine for Rolls-Royce. His communication experience includes a number of UK universities, HM Prison Service and The Electoral Commission.

ABOVE Extra deck space has been created. BELOW The luxurious interior of the vessel.