

NEWTECH

The latest marine engines and innovations



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The new battery powered Seakeeper 3DC has the potential to stabilise boats as small as this Bénéteau Antares 30 with no recourse to a generator

Seakeeper's new stablemate

New battery powered 3DC gyro could revolutionise the market for zero speed stabilisers

Barely a month goes by without some new development in stabilising systems appearing – this is a terrific time for boat owners whose appetite for rock and roll is confined to Led Zepplin and the Rolling Stones. The last time we flagged up Seakeeper was only six months ago in the March issue, shortly after the California based company had released its smallest ever Gyro. Its diminutive Seakeeper 5 was notable for its compact size and a price which made it suitable for boats as small as 30 foot. You can read our first test of it in a Princess 43 overleaf.

However, the US company, whose manufacturing plant in Pennsylvania covers a sprawling 90,000ft² now has a new starter model, the Seakeeper 3DC.

At first glance the spec is perplexing – the 3DC has exactly the same compact dimensions of 30.1 x 29.8 x 24.7 inches (765 x 757 x 628mm) as the preceding 5 model. Also exactly the same starting price of \$29,900. Its weight of 358kg (790lb) is also identical to the 5.

POWER FROM A BATTERY

The big difference, and the reason why the 3DC is such a significant

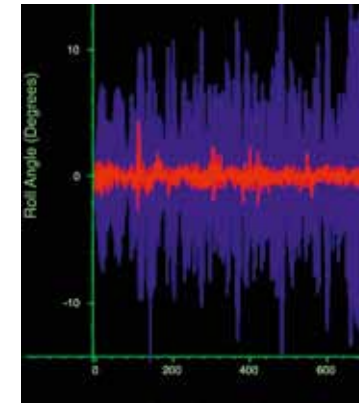
development, is that the new Seakeeper can be battery powered. Okay, the motor itself still needs to draw its 900W maximum via a true sine wave inverter (110-230V, 50/60Hz, single phase) but the 100W Gyro control system is fed from a simple 12V supply. Hey presto, modest boats without generators now have access to stabilisers.

In order to achieve that low power battery operation, the

MY TAKE: The Seakeeper 3DC solves the issues of size, price and power. The big question now is whether yards start to design their boats around it so that it becomes a simple and affordable factory fit option. **Hugo**



new 3DC spins at 6,400rpm instead of the 10,700rpm of the 5. Consequently, its maximum 6,500Nm of anti-rolling torque is almost exactly half that of its rotationally faster sibling. That explains why Seakeeper says it's suitable for boats up to 40 foot, whereas the company states that its 5 model can handle 50 footers. One significant benefit of its slower rotational speed is that the 3DC is noticeably quieter; 62-64dB(C) versus 70-72dB(C) for the 5, measured from a metre away. Bear in mind that 65dB(A) is the generally accepted level of normal human conversation, so completely cloaking the sound of the 3DC should not be difficult provided it lives in a well insulated space.



Blue line shows the roll with Seakeeper 5 switched off, red shows it switched on

In late April this year, Seakeeper conducted initial tests on a 35ft long, 10ft wide, 6 tonne open decked US sportfishing boat with a stepped hull called the Contender 35ST. In conditions that Seakeeper says comprised three foot significant wave height and 15 knot winds with gusts up to 30 knots, the company reported a 94% reduction in roll. According to the graph (see above) with the 3DC engaged, most of the residual rolling was reduced to 1° or less, a level at which Martinis barely get shaken, let alone stirred.

GEARING UP FOR ACTION

Like all gyros, it takes time to spool up to operational speed. In the case of the 3DC that is 27 minutes to the point



Seakeeper claims that the battery powered 3DC can cope with boats up to 40 foot or as small as this 10.2m (33ft) Bénéteau Antares 30

where stabilisation is engaged, and another 11 minutes to full rated rpm. Zero-speed fin devotees like to point out that this waiting time can be a nuisance, but I feel it's really no big deal as long as you switch the 3DC on as soon as you step on board. By the time you have packed away your kit, carried out a safety briefing, and crawled gently out of the marina, few of us get under way in less than half an hour.

And also like all gyros, the 3DC can be sited almost anywhere convenient. For instance, on the Contender 35ST, the 3DC sat directly on deck in a small locker. On small boats, where space is often at a premium, that is

potentially a huge benefit. The only caveat to this freedom of placement is that on boats that regularly experience vertical accelerations greater than +/-1.0g, it needs to live aft of the longitudinal centre of gravity (LCG).

All told then, I feel that Seakeeper's modest claim of a starting point of 30ft does not reflect the 3DC's full potential. Assuming that shouldering an extra 358kg is not going to trouble your boat (and that is only about four



On the Contender 35ST, the 3DC simply sits directly on deck in a small locker



adults' worth of weight, or a typical PWC) then its compact dimensions, battery power, and ability to be mounted high on anywhere aft of the LCG, should in theory allow it to be installed on almost any size of boat whose owner can afford its \$29,000 – roughly £18,600 (plus fitting costs) as of mid July. And given how on-board comfort is becoming an ever more appreciated aspect of boating, even on a small and inexpensive boat that seemingly extravagant £19k may feel like money well spent. **MBY**

Contact www.seakeeper.com

30 SECOND BRIEFING:

STABILISERS AND SMALL DISPLACEMENT BOATS

Recent advances in stabilising systems have the potential to fundamentally change and extend the way we use a particular genre of boat – the small displacement cruiser. Here's why:

- The leviathans of the displacing boating world, such as Nordhavn's towering cruisers, are considered to be ocean going craft, yet far smaller displacement boats, such as the Linssen Classic Sturdy 32 AC, pictured below, are generally perceived as inland waterways boats, even though both of these examples are extremely tough and strongly built.

- Both are limited to a top speed of around 8 to 10 knots, a speed at which neither generate sufficient dynamic stability to stop them rolling around in challenging seas. So all in all, the underlying seakeeping ability of the two types is not fundamentally different.

- If you eliminate seakeeping, speed, build strength, and dynamic stability from the comparison, the most pertinent difference between the two in terms of the ability to undertake offshore passages is that the ocean crossers are invariably fully stabilised, whereas the relatively tiny Linssens and their ilk are generally not.

- Now though, the new breed of small-boat stabilisers, such as the Gyros from Seakeeper and the AntiRoll from DMS, have removed the principal impediment to small displacement boats heading offshore and undertaking more intrepid passages. What's more, these two systems work well on slow boats. Suddenly, cross channel trips on 30ft displacement boats have become something to be enjoyed, not endured.



Seakeeper test

Sea trialling the Seakeeper 5 in a Princess 43

A flat calm day, devoid even of a suitable wake to induce some rolling – the worst possible test conditions for a product designed specifically to reduce rock and roll. Or so I thought until I spent a few hours testing a Princess 43 fitted with a Seakeeper 5 gyro stabiliser during a tranquil day in July. What I discovered is that a gyro has several hidden talents over and above its ability to substantially reduce roll at anchor and under way.

Joystick control is becoming ever more popular, especially with pod drive installations such as Zeus and Volvo's IPS. However, complex or rapid joystick manoeuvring can induce surprisingly fierce side-to-side swaying when the skipper gets it wrong and repeatedly overcompensates, especially on IPS boats where the pods are angled at right angles to the hull bottom.

Although the Princess 43's joystick system uses simple shafts and bow thrusters rather than pods, that swaying was reduced but still evident. Engaging the Seakeeper 5 eliminated it entirely. The result is that it made me feel more in control of the boat because it became more steadfast.

There's another aspect of docking which benefits. With the gyro engaged, the boat becomes rock solid – completely resistant to crew hopping on and off the platform or the side decks. In calm conditions on our 43 footer, that was no big deal. However, on the 30 footers that Seakeeper's new generation compact 3DC and 5 model could be fitted to, it is going to be a significant benefit.

The final bonus is a dynamic one that can be felt under way even in flat water. One of the principal joys of Bernard Olesinski designed hulls is their remarkable agility, and it is a characteristic you would never want to lose or even subdue. So I was surprised to find that I slightly preferred the overall feel of the Princess 43 with the gyro engaged. The great thing is that nothing has been taken away, it simply firms things up a little. The closest analogy I can think of is the difference between a family saloon and a sports car with a stiff chassis and more finely tuned suspension. The sporty one will still carve exactly the same line around the bend, but it feels more taut and resolute. It's quite a

Osmotech retro-fitted a Seakeeper to our Princess 43 test boat but it is likely to become a factory fit option



subtle effect – nowhere as great as the family saloon vs sports car analogy – but it is perceptible and in my opinion, it's a good effect too.

It was a pity we didn't get the chance to test the Seakeeper 5 in more challenging conditions but from previous experience of its larger units and the taut feeling of this boat, we are confident that it will make a big difference to comfort at anchor and when cruising at displacement speeds in a beam-on sea. That effect dissipates at around 15 knots when the hull's dynamic stability starts to take over.

The noise of the unit is imperceptible under way and even at anchor it's the

genset rather than the gyro that is the limiting factor. It also fits comfortably into the engineroom of the 43 without sacrificing valuable storage space in more accessible areas of the boat.

The unit itself costs \$29,000 (£18,600) in the US but retrofitting it to this boat took Osmotech (Seakeeper's UK agents for the South Coast) around 250 hours, pushing the final cost up to £42,000 inc VAT. Installing it during the build should be considerably quicker and cheaper but even at this price, we would have no hesitation in recommending it.

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The control panel is simplicity personified

The Cummins generator, the steps and the battery box provide a good idea of just how compact the latest Seakeeper 5 is (centre)



These are the roughest conditions we had during our Seakeeper 5 sea trial!

