Parasail

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The principle

ISTEC's redeveloped para sailor ² is a breakthrough in sail design and will set a new standard in sailing.

The special features of the para sailor ² mean that it is a replacement for both traditional spinnakers and also gennakers.

The sail is divided into an upper and a lower section. This allows a profiled, three-dimensional, pressure–filled wing to be positioned into the air current of the opening between the two sections. This wing was developed in a similar way to a paraglider or kite surfer ram air kite using a special profile and it creates considerable forward motion (1) and lift (2) . This decreases the horizontal force (3) on the spinnaker head and the resulting moment, and relieves considerably the pressure on the bow. Because of the internal force, the wing part of the para sailor ² acts as lateral support and stabilizes the sides. Safety

Rolling, yawing, pitching and broaching have been the main risks in sailing under spinnaker. Heavy seas and squally winds can result in even an experienced crew losing the spinnaker or, in the worst case, the whole rigging. The para sailor ² uses intelligent, patented technology to shift the sail's centre of pressure, which reduces this problem considerably. The valve function of the opening in the para sailor ² dampens gusts as surplus air can quickly escape but at the same time it creates buoyancy . Sailing comfort

The lift of the wing relieves the pressure on the bow considerably and reduces rolling, yawing and pitching. Despite higher speeds, this allows much more balanced steering and greater sailing comfort. The ISTEC – sock with the newly developed oval carbon fibre funnel makes it considerably easier to hoist and lower the sail . Performance

The ISTEC para sailor ² makes it possible for the first time to use one sail as spinnaker and gennaker, while at the same time improving performance. It can be used between 70 and 180 degrees to the wind. By relieving the pressure on the bow, and through the stabilising effect of the para sailor ², the effectiveness of the rudder is increased and fewer rudder adjustments are needed.

Sail shape

Above-average durability is ensured by the optimised sail shape, innovative force-oriented and optimised reinforcement, not to mention use of manufacturing standards applied in the aviation industry, and materials specially designed for ISTEC and the para sailor ². T he para sailor ² spinnaker is fully computer-designed. Complex design of this kind would not be possible without the latest development techniques. A 140m² spinnaker is made up of approx. 650 individual parts, which is about 4 times as many as a traditional spinnaker.

The wing

The main and highly visible difference from a traditional spinnaker is the opening in the spinnaker of the ISTEC para sailor ² and the pressure-inflated wing.

The wing has basically two purposes:

1. The flow of air over the wing produces upwards directed lift. Absolute force directed upwards and forwards results from the increased angle of attack. The forward motion and lift produced by the three-dimensional wing more than offsets the loss in surface area which necessarily results from the opening. This prevents a loss of forward motion.

2. The air-filled wing provides considerable horizontal strengthening. The sides are actively prevented from collapsing but, if they should nevertheless do so, e.g. because the wind turns, the shock on re-inflation typical for a spinnaker does not occur. This is achieved by a complex arrangement of “cross-ports” in the wing which balance the air pressure, allowing air to flow from one part of the wing to another, making a smooth re-opening possible.

The opening

A further important feature of our sail is the opening. Firstly, it ensures that air flows over the wing and secondly it functions as a pressure-relief valve. Any gusts which occur are diverted by it and hit the wing. More lift is produced temporarily by the increased current. This significantly relieves the pressure on the bow and rolling and pitching motions are also reduced markedly. Furthermore, this unique structure increases the wind's range of use. The para sailor ² can thus be used in a much greater wind range than other spinnakers on the market.

Regatta

The para sailor ² has been cleared for use in regattas since November 2002, particularly all “open classes” and divisions which sail time-on-time against each other under the IRC/UNCL-regulations. The German Sailing Association (DSV) allows the sail according to the yardstick system. We use particularly stiff fabric with a very hard finish for the regatta version of the para sailor ² . This means we can guarantee a perfect profile even in strong winds with an only slightly shorter life for the sail .

The para sailor ² is particularly recommended as a storm spinnaker. Our sail is unbeatable in extreme wind conditions!

Cruising

Bobby Schenk, Germany's most famous blue-water sailor, sailed half-way around the world with the Parasailor, and he used only the Parasailor for the classic week-long Passat stretch. He said afterwards that he believes that the para sailor ² is part of the basic equipment which any yacht should have.

The para sailor ² was optimised aerodynamically and is now even easier to handle with its reworked sock. A gauze strip going the length of the trailing edge of the wing quickly and evenly deflates the cells of the wing when the sail is lowered.

The relaxed sailing and the possibility of using the para sailor ² instead of both the traditional spinnaker and the gennaker mean that the para sailor ² is used on more and more cruising boats as multi-purpose reacher.