

Lightweight lubrication-free iglidur plain bearings make catamarans fly

The manus award. igus's awards programme for polymer bearing applications, received 582 entries in 2021. Back in 2019, The iFLY15 catamaran won silver in the manus awards and is now attempting to break a world record.

Twin-hulled catamarans are designed to lift out of the water on hydrofoils, and the iFLY15 sports catamaran from CEC Catamarans GmbH – which will attempt to set a new record for crossing the English Channel in July – really flies across the water. For the automatic “flight control” system, the developers relied on lubrication-free, lightweight and corrosion-free igus plain bearing technology, an innovative project that won silver in igus' bi-annual manus awards in 2019. The winners of this year's award for the best plain bearing technology application were chosen by the jury on 9 March 2021.

Eco-friendly and powered only by the wind, the iFLY15 flying catamaran reaches speeds over 50 km/h, making it faster than many motorboats. To achieve these speeds, the boat needed lightweight durable components, which must be able to withstand a wide range of environmental conditions, such as humidity, temperature changes, impact loads from flotsam and operate well in sea water which corrodes many materials.

The absence of lubricants in these moving components is important. The bearings should be maintenance-free, because people demand continual use rather than regular maintenance intervals. In addition, lubrication would bind dust and sand and damage the guide shaft over time, so CEC Catamarans uses several lubrication-free igus components in the design. For the sophisticated flight control system, igubal pillow block bearings are used in the mechanical scanners. Maintenance-free drylin W linear guides are used for the sliding bearing of the flight control system. All axle bearings in the mechanism are cylindrical iglidur J plain bearings, which are corrosion-free and also don't collect dirt and dust, thanks to the absence of lubrication.

In July 2021, the iFLY15 is poised to attempt a new world record: the fastest crossing of the English Channel. The distance was covered successfully in its first attempt in September 2019, but very little wind during the last few miles thwarted a new record.



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To make catamarans lift above the water, engineers at CEC Catamarans relied on the lubrication-free, lightweight and corrosion-free iglidur plain bearing technology.

The terms "igus", "Apiro", "chainflex", "CFRIP", "conprotect", "CTD", "drygear", "drylin", "dry-tech", "dryspin", "easy chain", "e-chain", "e-chain systems", "e-ketten", "e-kettensysteme", "e-skin", "e-spool", "flizz", "ibow", "igear", "igidur", "igubal", "kineKIT", "manus", "motion plastics", "pikchain", "plastics for longer life", "readychain", "readycable", "ReBeL", "speedigus", "tribofilament", "triflex", "robotlink", "xirodur", and "xiros" are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.