



advanced materials technology division of CMS Industries

CMS and Bénéteau-Jeanneau group: a partnership for the technological innovation of the boating industry.

CMS – Italian manufacturer of CNC machining centers – has recently disclosed to the press that it has reached an agreement with the French group Bénéteau-Jeanneau – word leader in the production of pleasure boating – for the supply of large-sized Poseidon series machining centers to be employed in the finishing of fiberglass hulls, decks, accessories and components.

The boating industry has gone through a period of technological innovation in these years, due to the industrial restructuring of complete productive cycles, which were once carried out manually and are now performed by CNC machining centers. This leads to a considerable reduction of production times, along with the substantial qualitative improvement of products and work environment.

CMS stands out as a promoter and an active protagonist of this industrial renovation: it manufactures machining centers that combine huge machinable volumes with absolutely outstanding repeatability and accuracy standards, considering the dimensions of such machinery; CMS is also engaged in a constant effort of technological research, by running machining tests in collaboration with the best-known manufacturers of industrial materials. Finally, CMS boasts a first-rate customer service, in a position to offer its Customers the whole body of technical expertise in the field built up in over thirty years' outstanding activity, aimed at optimizing the use of machining centers and facilitating the transition from traditional manufacturing methods to mechanized manufacturing. In collaboration with CMS, world-wide famous shipyards such as Azimut, Ferretti, Intermarine (Rodriguez Group) and Numarine have started out on this innovatory course, which proves absolutely necessary today for the preservation of excellence within a globalized market.

In these years CMS has already been supplying the Bénéteau-Jeanneau group with machining centers for the nesting cut of structural parts and marine multilayer panels for interior fittings: the French group's direct experience of the commitment and the spirit lavished by CMS on the Customers' service was just one of the many important factors that prompted their decision to start this new collaboration.

The technical specifications of CMS products complete the picture: a mobile bridge structure and a machinable cube of 18x6x3 m, so as to enable the easy positioning and the uninterrupted machining of large-sized work pieces; a telescopic Z carriage, that guarantees great rigidity also in the presence of wide axis strokes and minimizes the overall height dimensions of the machining centre; a 5-axis operating unit equipped with a continuous duty 12 kW electrospindle, in order to provide power and freedom of space movement as required by the work piece materials and geometries; magazines that can house up to 40 tools, with possibility of tool extraction outside the machining area, in order to minimize machine stops due to retooling or tool sharpening.

Fiberglass boat parts to be machined are characterized by large dimensions and irregular high thickness, owing to prior manual rolling. Machining consists of finishing outer edges and drilling hole and windows into other parts before assembly. A 5-axis quality cut requires accuracy and repeatability, which can be obtained thanks to the rigidity of the machining centre structural parts, combined with spindle power, which must be available over a wide rotation speed range, in order to optimise the use of blades and small-diameter tools. We can proudly state that CMS Poseidon – a 5-axis machining centre especially designed for High Speed Cutting of large-sized work pieces – fully satisfies all necessary requirements. An unforeseeable variable, which the system must be able to cope with, is represented by the random deformation of work pieces due to the material dimensions and nature, which make the actual geometry of the machinable work piece different from the nominal geometry. The solution adopted by CMS considers a laser examination of the work piece, therefore involving the use of intelligent algorithms for the recognition of the geometric variations and the ensuing self-adjustment of machining programs.

Finally, for ensuring the best utilization of the software – realized in collaboration with DELCAM, an English multinational corporation – and the optimisation of the whole process, CMS has provided instructions and support in order to perfect the ideal systems for locking and centering the work pieces on the machining carriages. The astounding mix of technology, skills and experience offered by CMS has turned out to be winning once again, while the partnership with Bénéteau-Jeanneau is bound to go a long way: the consignment of other large-sized machining centers to the French group is under consideration for the machining of boat hulls, decks and accessories. – May 2005

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