

PUNCH GROUP AND GM

BOTH DIESEL AND HYDROGEN



THE BEAUTY OF DIESEL

Massimo Giraud, OEM Sales Key Account Manager, focuses on endothermic engines for marine applications. «With GM's former colleagues the goal was to develop diesel engines for highly efficient marine applications, with the ability to manage them through an effective control system. We used automotive control units, making them user-friendly, removing a part of unnecessary software for marine engines and adding another one that allows the calibration of some engine parameters and communication with the boat SW. Then, the engine is born with a basic calibration to be then refined on the basis of the characteristics of the propeller and the boat. The V8 Duramax 6.6, our most powerful engine, revised in architecture by Automac Engineering, will soon be available for boats. Considering a 6-cylinder, we find the SCR integrated into a very compact aftertreatment system. Unlike the under floor solution, this is already mounted on the engine, thus making its integration much easier. There is also a low-pressure EGR system that is not required for a marine engine».

Doug Parks, GM executive vice president: «We wanted the best solution for our employees and our company – the transfer of ownership to Punch Group, in addition to an engineering services agreement, does just that.»

GM initials are strongly evocative of endothermic suggestions. The origins of marine propulsion are on the road, and General Motors' tradition in this area is definitely a long one. GM Marine attended last year the Genoa Boat Show for the first time and did not miss the 60th edition, boasting the new brand 'Punch Torino'. In Genoa, we met the company's CEO, **Pierpaolo Antonioli**, and talked about several hot topics.

«If you think about what is happening today, including the war on diesel and the total transition to electric», says Antonioli, «you easily realize that electricity is not always economically sustainable. In addition, it involves a number of problems, from battery

GM Marine is distributed in Italy by Punch Torino. The company attended the Genoa Boat Show, last October, for the second year in a row. We interviewed Pierpaolo Antonioli, CEO of Punch Torino, who told us about the company's point of view. From diesel engines to future hydrogen options

recycling to infrastructure availability, which limit its application and beyond. Engineering today suggests that diesel engines are very efficient: focusing on nitrogen oxide levels, they are so low that we have been forced to change the measurement systems. The fact that the diesel has been accused of being highly polluting for well-known reasons is not entirely correct. The sore point, and we are all aware of this, regards all those fleets equipped with obsolete and really polluting engines. What is more, there's a problem of social responsibility: in Europe in particular, massive investments have been made in factories, technical development, jobs and culture, which are a heritage to be preserved». Hence the digression on a topic on which we have focused on, hydrogen.

«The Punch Group firmly believes in diesel, to the point of proposing it also in the marine field. However, we have also invested in the hydrogenisation of diesel engines», adds Antonioli. «That's because the diesel cycle can be converted for use with biofuels, which means diesel plus hydrogen for Punch. The type of development we pursue (and consequently our investment) is the production of engines that work with both diesel and hydrogen. This is for two reasons: because of the investments made by us and our customers and to stay competitive with industries such as those in Asia, which are taking advantage of the questioning of the internal combustion engine. Other brands carried out similar experiments in the past, using hydrogen – be it blue or green

– with a diesel engine but with no success due to the efficiency loss. In order to maintain the same level, certain parameters have to be changed, among which adapting the combustion chamber is essential». «Another project we are working on is that of fuel cells», continues Antonioli. «In a nutshell, we believe that the diesel engine has a future, including in the marine sector; Punch is the official dealer of GM Group diesel engines; in addition, we will add a product line featuring diesel and hydrogen branded Punch. It is therefore clear that diesel is by no means dead. It's still one of the most efficient and low-cost engines. An example is the 6-cylinder we developed last year in the US, which is one of the most efficient onroad engines even compa-

red to gasoline hybrids», says Pierpaolo Antonioli, who talked also about hybridization in the marine field. «Finally, in the marine field we are developing patents focused on parallel hybrid: the electric part, which operates in parallel with engine propulsion, can be used in specific contexts such as in port or in marine protected areas, while in all others situations the diesel is used both for propulsion and as a generator for batteries». In the end, the manufacturing map in a nutshell. The 6-cylinder is manufactured in the United States, in Flint, Michigan. The 2.8-liter 4-cylinder version was produced until June 2020 also in Thailand, as well as Brazil, where it is still in production. The V8 diesel engine is made in Ohio (USA).