Racing with...

Supercar & Co.

Luxury cars for the very rich. Race motorcycles - advanced technological machines that challenge the boundaries of physics. Hi-tech bicycles making the most of the extraordinary power of the human body. Each of these objects, made in small numbers are extreme performers, they are made with great precision in great detail and have components of great technological value - these are the outcome of specialist research and of mainly skilled workmanship. Straightaway we think of engines, electronics and computer technology, but we shouldn't forget the other components that are needed to make up the whole product, frames, shells, rims and the chassis. It's to these components that Mr. Pierantozzi started to put his mind to in 1984 and with his expertise in the sector of composite materials (carbon fiber), he personally made some aerodynamic components for Minardi of F2.

Today Umberto Pierantozzi runs a firm, the ATR of Colonnella, in the district of Teramo (Italy), which has about 700 employees, 9 plants, a turnover of 30 million euros in 2002 and is looking to expand further. His customers are for instance the automotive manufacturers Minardi, Audi, Ferrari, Lamborghini, Porsche, the motorcycle manufacturers Ducati, Aprilia, Guzzi, Benelli, Yamaha, Cagiva, and the high-tech bicycle manufacturer Colnago Ferrari. Among these treasures ATR helps to make: the Ferrari 456 GT, F50 and Enzo, the Lamborghini Mucièlago, the Porsche Carrera GT, the Minardi M187 F1, the Audi's that have raced in the 24 Hours of Le Mans and others whose names are restricted. The fiber rims made for Ducati Corse may be even 1 kg lighter than the magnesium rims with same resistance and rigidity. Shaping carbon fiber frames, chassis and structure parts requires great expertise in the treatment of materials and a considerable artisanal experience. Each component is strictly hand made by teams of experts that mould on special templates

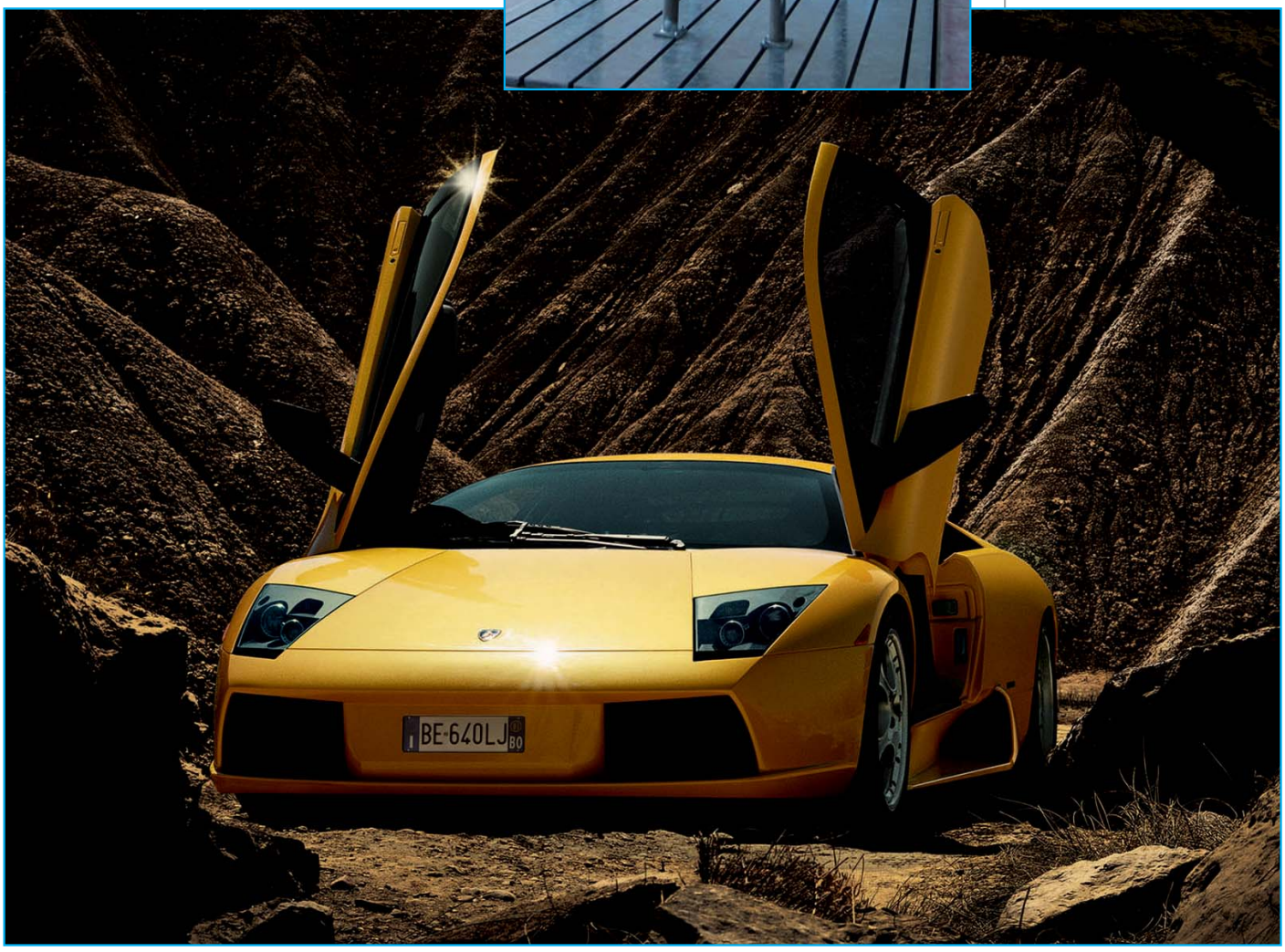
HEXAGON
METROLOGY

Structural and dimensional quality are top priority at ATR...

layers of monodirectional carbon fiber ensuring higher rigidity and resistance as compared to other methods of fiber processing. The technology used by ATR derives from aeronautics and allows to make components in three stages only: fiber modelling, high-pressure high-temperature firing in giant autoclaves of all chassis components so as to make the structure smooth, continuous and even, and additional machining when needed (boring and trimming). The chassis is now ready to move to the painting and assembly line thanks to an efficient, high quality and reliability process.

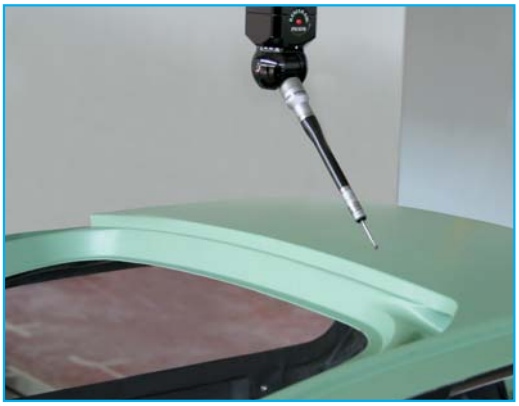
Structural and dimensional quality are top priority at ATR. They run not only resistance tests on materials but also dimensional tests - sometimes on every component made. This is done by using two gantry-type DEA measuring machines equipped with PC-DMIS CAD++: a Beta CMM since

1999 and a brand new Alpha, installed last October to meet growing manufacturing volumes. The two machines inspect the models on which the moulds - in carbon fiber as well - will be shaped, the moulds in various processing stages and at last the final components of which the surface and machining is inspected. 100% sampling on start of production may drop to 20% when on steady state, depending on the specifications to be met. Some customers



request even a 100% dimensional inspection.

From 1997 to 2002, ATR has invested over 26 million euros in new equipment, research and development. To ensure future competitiveness on the market, in 2000 they set up a strategic business unit, the ATR R&D, entirely focused on research and development. 30 highly skilled technicians and engineers study new technologies that will allow ATR to draw up beside their customers at the same speed of their supercars. ■ (01/18)



Hexagon Metrology

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