LIGHTING THE FUTURE

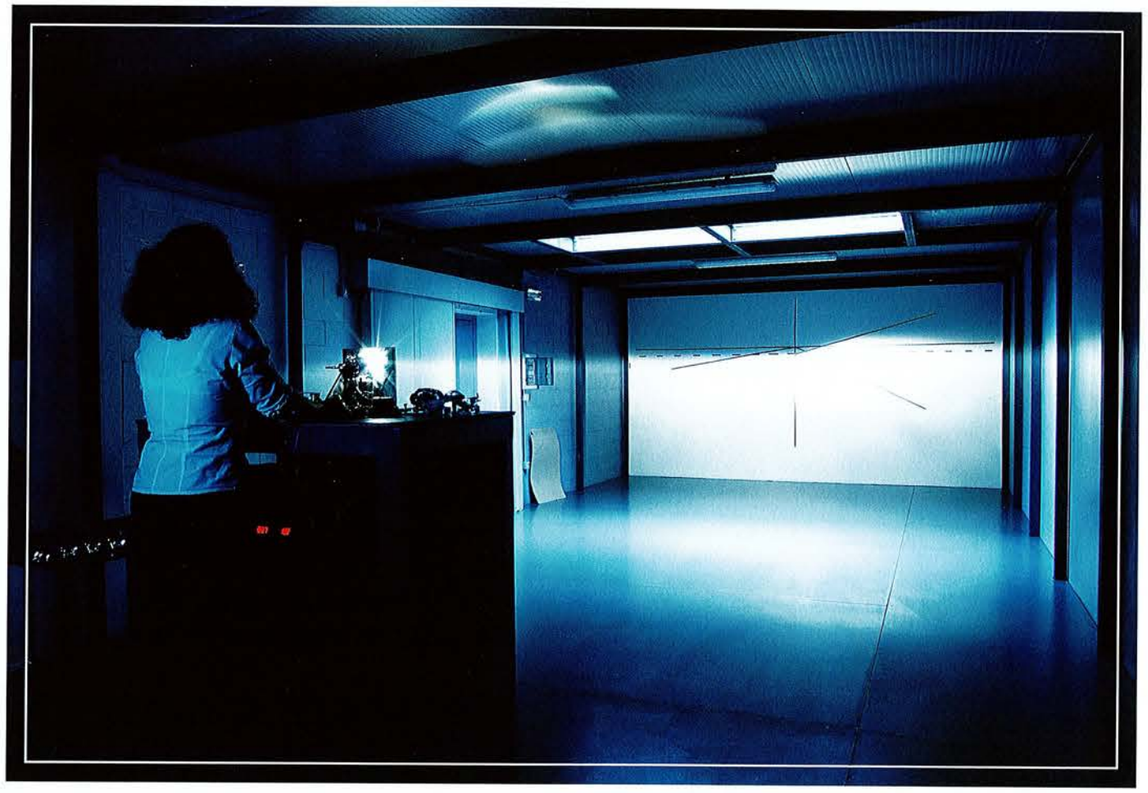
Tecnomeccanica SpA is an Italian manufacturer of high-precision aluminium die-cast components of different shapes and dimensions for the automotive industry. Barbara Rossi talks to Giorgio Valli, the company's plant manager and COO, to find out more about its operations.

Tecnomeccanica, which today employs 110 people, achieved a €13 million turnover in 2010 and exports 85 per cent of the 8 million die-cast components that it produces every year. The company was established in 1945 in Novara, between Milan and Turin, and began by designing and constructing moulds and aluminium die-cast components. There were several developments over the years, with the most significant of these taking place in 1999 when the company, which had already started producing reflectors, began metallising them. In 2003 the company moved to a larger site in Novara, and in 2007 it began producing LED lamps and aluminium heat sinks.

Know-how in one hand

The introduction of metallisation was particularly significant because it has allowed Tecnomeccanica to distinguish itself as an integrated process supplier, from die-casting to metallisation, which is quite rare at the European level. However, the company also continues to supply some non-metallised reflectors to clients who prefer to carry out the metallisation process in-house.

Nowadays Tecnomeccanica provides an entire service, starting with the customer's input, followed by mould design and construction, aluminium die-casting, blanking, tumbling, powder coating, metallisation and quality control, and then completed with shipping. Sophisticated 3D design and test tools, including optical scanning and contact machines, are employed during this process.

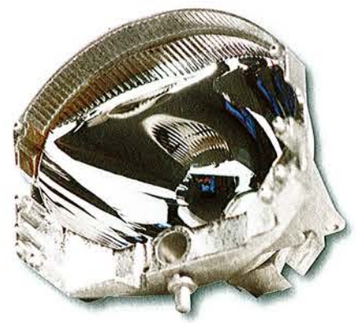


The 2003 move has been very important because, as a result, Tecnomeccanica now operates from a 34,500m² site where production capacity has recently been increased further thanks to investments in the automation of the die-cast and cutting cycles. Mr Valli stressed that his company is interested in pursuing this automation trend. In 2010, for example, it purchased new automated machinery and retrofitted existing equipment, increasing the number of automated production islands.

Benefits of aluminium for headlights and heat sinks

"Our reflectors are targeted at high range cars, because generally for standard halogen headlights reflectors are made in plastic," – Mr Valli explains – "whereas our reflectors are still used for high power halogen headlights and especially for all xenon lamps because they need to dissipate a lot of heat and only aluminium reflectors can keep their complex geometry at these high temperatures." The 2007 innovation has seen the introduction of aluminium heat sinks for LED daytime headlights on high range cars, which also require high heat resistance. "Further benefits offered by aluminium die-cast components for both reflectors and heat sinks include very thin thickness with complex profiles, and these characteristics allow us to keep both cost and weight at low levels – essential for today's automotive sector," adds Mr Valli.

Eighty-five per cent of the high precision aluminium die-cast components produced ▷



by Tecnomeccanica are reflectors, whilst the remaining 15 per cent is made up of heat sinks. This latter area is growing and in fact Mr Valli forecasts that it will soon make up 20 per cent of the company's total output. The outlet for Tecnomeccanica's products is the automotive industry, mainly in terms of pure automotive products such as cars (90 per cent of turnover), lorries and motorbikes (5 per cent), agricultural (tractors) and earth moving vehicles (5 per cent).

Developments in various types of illumination

Tecnomeccanica's new products will concentrate on the growing field of heat sinks and, while up to now metallisation has been exclusive to reflectors, the company is now developing metallised heat sinks for which it has reached the prototype phase. Alongside this development, it is interested in exploring possible applications for its reflectors in the civil lighting sector, for the illumination of facilities such as roads, parks and sport sites. Tecnomeccanica's interest in developing applications for this area is linked to the increasing trend for LED lamp road lighting, due to the considerable environmental and energy saving benefits it can offer.

At present the company's main export market is Europe (mainly in Germany), followed by the NAFTA area, then Italy and, with a small share, Asia. However, geographical sales areas and rankings could change as Tecnomeccanica follows trends in the production of high-range automobiles so any relocation/delocalisation here could mean a shift in the company's geographical sales balance. Talking about future company development, Mr Valli mentions organic growth, which might take place alongside possible joint ventures so as to set up production near important clients' production sites. He also talks about possible future joint ventures to set up production on the American continent.

Tecnomeccanica holds the ISO TS 16949, ISO 9000 and ISO 14000 certificates and was also one of the first companies in Italy to achieve automotive-specific certifications. Its aim for the future is to remain an essential partner for the major automotive lighting manufacturers. □