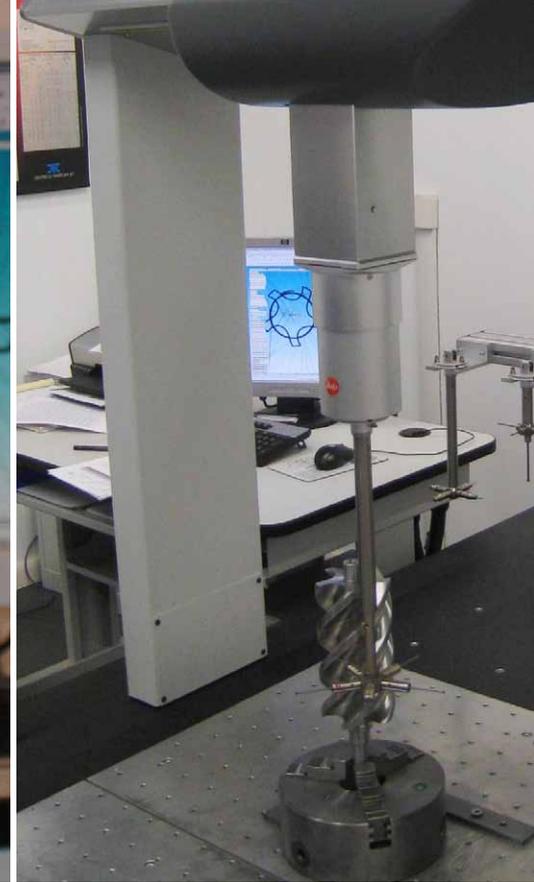
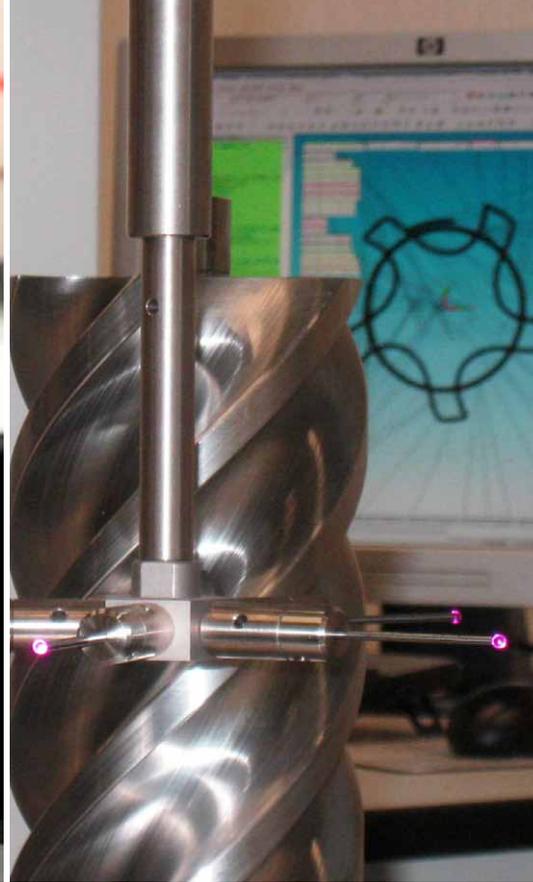




Case Study VMC – Vicenza
Fluid Compression Technologies





The air surrounding us was imperceptible but always present, captured and compressed by high-precision high-technology mechanical devices that generate powerful concentrated efficient effective flows.

This is the feeling we had when talking with Virgilio Mietto, President and founder of VMC Italia: a relaxed laid-back voice, calm like the air. Behind this voice, over 30 years of entrepreneurial activity. Throughout these years, he has gained experience and given life to ideas focusing on projects and products that have fully revolutionised the technology, efficiency, effectiveness and costs of implementation of air compressors of all major manufacturers of this industry worldwide.

Over 30% of the screws for piston and rotary compressors manufactured throughout the world come from this company of Creazzo, in the province of Vicenza, in the hard-working north-eastern region of Italy.

Innovation is the word! Innovation is also the basic principle of every step in VMC's activity as it's proven by 15 international patents, a team of designers that are constantly seeking new solutions, as well as the opening of new company sites in the world to better serve local markets.

Virgilio Mietto tells us: "VMC was established in 1980 as a small machine shop for contract machining of mechanical details for air compressors. It was an excellent way to start a long and demanding path. This gave me the possibility to gain experience in this

field, and understand the evolution prospects for this technology. I aimed at becoming a technology partner for the compressed air industry, not just a manufacturer of large-scale workpieces. Our design efforts focused primarily on regulating valves, separating valves and thermostatic circulation valves. Compressors require three to four distinct valves to perform all necessary tasks. These valves used to be separate components – located in different areas and assembled at different times. We introduced an innovative solution: we integrated these valves in a single unit, thus dramatically reducing assembly, manufacturing and maintenance costs. Simple and elementary as it may seem, extremely complex design features are behind this lucky insight. Our product has become a unique solution that all major world manufacturers have gradually adopted."

VMC has approximately 50 staff. Despite the relatively small size of the company, Virgilio Mietto wanted to give it a complete, self-sufficient structure: research and development, bookkeeping, sales, technical-commercial subsidiaries, manufacturing, quality. 90% of the components used for manufacturing the VMC regulating valves are produced by highly specialized suppliers, that are in line with the quality standards of VMC, according to the ISO 9001 standards. Suppliers are selected by criteria that guarantee the customer the comfort of the right choice. The remaining 10% of valve production, as well as full assembly and inspection, are performed by internal personnel to guarantee the highest quality level.

Stefano Ferrarin, Quality Manager, illustrates the path followed by the VMC products: "The metrology inspection of our components is shared by different stages of production. We employ traditional equipment for in-between inspections and also the measuring machine when necessary for specific parts. For many years we have used a manual measuring machine. Then, two years ago, a step up in class. We decided to add the design and manufacture of the screw units in an oil bath. To get the whole production cycle under control, we had to obtain an automatic machine capable to fully and accurately inspect the screws received from our suppliers, and certify dimensional characteristics. We considered the two leading manufacturers on the market and carefully assessed the offer both from a technical and services viewpoint."

A DEA GLOBAL 9.15.8 Advantage CMM equipped with a Leitz LSP-X5 scanning sensor featured all technical characteristics required but we wanted more. The inspection of a screw for a compressor requires an in-depth analysis of profiles on numerous sections. An amazing expertise is necessary to properly process hundreds of measured points, and to extract from them a full, detailed inspection report. The Curve Analyzer software, developed by Hexagon Metrology application engineers, provided an excellent base. Thanks to an additional intense development of this software package, we then obtained a system that fully meets our requirements. Standard programs perform the measurements so that the final inspection report is created automatically, very rapidly. We can therefore produce a dense sampling in a very effective manner."



Until a few years ago, our direct presence was primarily limited to Europe. Currently, we are present in China as well, where we have a sales and service office that since last year is becoming also a manufacturing site for our Asian customers. Since February 2011, we have a facility in the United States, too.

In a few months, the new headquarters in Vicenza will be operational – even more room for design, prototyping and quality control."

Levio Valetti



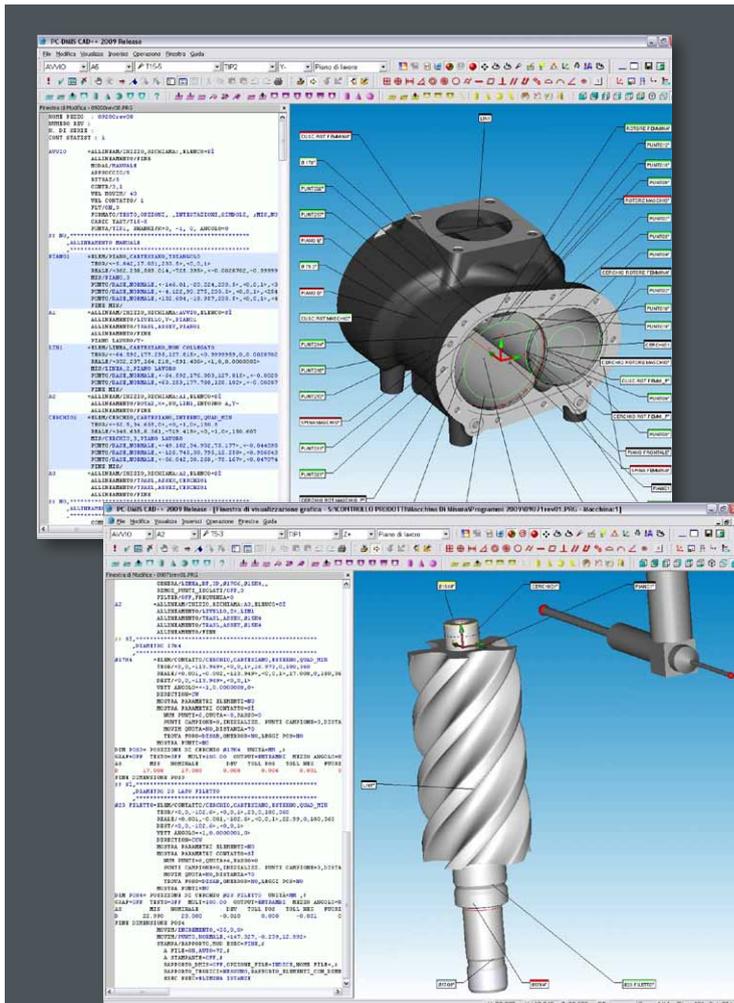
Our visit at the factory ended with the final inspection of the assembled integrated system: a 100% sampling is carried out at this stage. Each assembly is fitted onto a test rig and subjected to compression and tightness testing here, simulating the real operating conditions.

Virgilio Mietto continues: "With the help of our technology, the manufacturers of compressors have been able to significantly streamline their final assembly processes. We supply a compact integrated system which includes all elements required to generate compressed air. They just need to fit our component to the other units (tank, motor, electrical and electronic units) and it's done."

Hexagon Metrology: "How did you cope with the recent economic crisis and what are your projects for the future?"

"We have faced this difficult time with optimism and a future-oriented vision, constantly investing in innovation and quality, and pursuing a development policy with sustainability in mind. Besides the product certifications, our company is certified to UNI EN ISO 14001 and OHSAS 18001.

On the technical side, we have continued the research and improvement of our technology. We are currently considering the possibility to extend the applications to other fluids (water, dry fluid and gas). Thanks to our well-known penchant for innovation, as well as our experience, we have been asked to take part in a research project for creating an "inverted" compressor system: instead of using energy to produce compressed air or gas, our goal is to use compressed gases to produce energy.





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Hexagon Metrology

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