

Flexible friend

QUALITY COMBINED WITH THE ABILITY TO PRODUCE TO CUSTOMERS' EXACT REQUIREMENTS ARE THE HALLMARKS OF THIS SPECIALIST ITALIAN GEAR PUMP AND MOTOR MANUFACTURER

RIGHT: Thorough testing of every product with state-of-the-art equipment ensures superb reliability



Whether producing some of the smallest components, such as bushings, for its seven families of gear pumps and motors, or customising them for some of the most prestigious names in the off-highway industry, Marzocchi Pompe can truly be considered a specialist in this field – from start to finish.

With its strong focus on quality throughout its entire production process, which is based in Bologna, Italy, rather than a low-cost country, the old adage, 'You get what you pay for', certainly rings true. An annual turnover of several hundred thousand pumps and motors means that OEMs who are seeking the cheapest possible parts for high-volume machinery may have to look elsewhere.

This gives a distinct advantage for medium-sized OEMs or perhaps global

producers with low-volume ranges or specialised requests, who need parts tailoring to the precise requirements of their vehicles.

"If an OEM went to one of the biggest hydraulic suppliers and said, 'We produce 20,000 units per year, but we need you to modify the pump design,' it might well get a positive response," says Aldo Toscano, sales and marketing manager at Marzocchi Pompe. "But if you're a 500 machine-per-year customer, and asked for a longer shape, you'd probably be told to make do with the standard design. We are quite different – we make only gear pumps and gear motors and we are very flexible, so it's very difficult for us to say 'No!'"

Of course, not every potential size or flow combination will be immediately available off-the-shelf, so a request will

therefore be met with a feasibility study, and as long as there are no problems in terms of economy or availability, the process can begin. The company's sales and technical departments enjoy a close relationship that can be a great benefit to the customer during these early stages – ensuring that, even in times of high demand when time is scarce, the exact specifications are provided from the outset. This means that development can begin from the correct starting point, without requiring constant, excessive feedback between the supplier and customer that can lead to otherwise avoidable iterations.

As alluded to earlier, having a sister company – Lavin – that specialises in the turning, grinding and super-finishing operation on components such as gears also helps to simplify and speed up the

process of evaluating customer requests and producing prototypes. While most other pump manufacturers buy these crucial parts from an external supplier, quality control can be carried out to Marzocchi's high standards right from this early stage – even down to the choice of materials for the alloy – ensuring high reliability of the end product.

Testing times

Every Marzocchi product undergoes extensive testing in its labs, which have seen heavy investment in recent years, and the results are stored in the test bench. They can then be used to provide a detailed report on a prototype (or retrieved via the serial number in the unlikely event of a claim from the customer months later).

The customer typically then begins internal tests and tests in the field, meaning that the whole development process can take a year or more, so any time saved during these early stages is a welcome benefit. When the prototype is returned to Marzocchi, it undergoes a validation test to compare the initial results with those after one million cycles for evidence of any degradation of performance. Every single component in the pump or motor is then evaluated for wear according to a strict procedure, and a report sent to the customer for comparison with its own analysis.

"We try to supply not only the gear pump itself, but maybe some added value," claims Toscano. "Our joint venture with a die-casting company provides help in integrating the pump into a manifold, so the customer who is buying a pump from us could even end up with some valving on it as well if the quantity makes it worthwhile. So it's very important to us to understand the customer's requirement and to fulfil their request."

Now's the time

The worldwide market may have slowed, but as the move towards Stage IIIB/Tier 4 Interim gathers pace, now is the time for vehicle manufacturers to concentrate their efforts on R&D, and collaborate with suppliers on future projects.

"In the last two years, customers were more concerned with meeting demand and were happy with the components they had," says Toscano. "Now we see a lot of customers that are more interested in discussing alternative sources for their components."

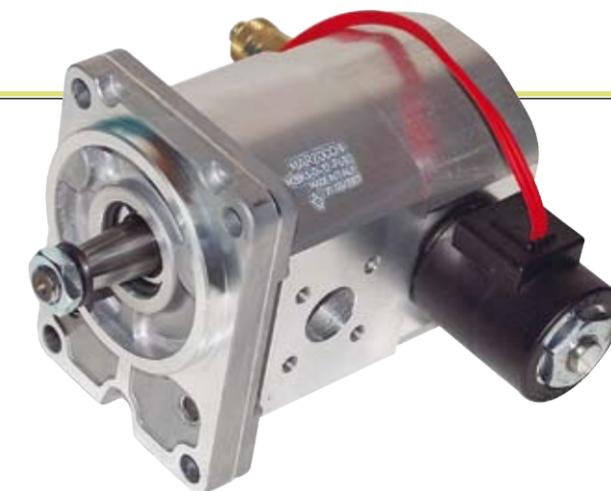
Despite its focus on medium-volume production vehicles, this does not prevent some big names that Marzocchi has served for years staying on the supplier's 500-strong client list. These are manufacturers that view the supplier's focus on gear pumps and motors as a positive, appreciating the extensive range of models and options that such a narrow focus makes available. Besides that, these customers are drawing on Marzocchi's know-how, high quality and performance as well as strong production capacity.

In the materials handling sector, the company has a strong – if often indirect – presence, through the use of its pumps in mini power packs. The forthcoming launch of a new low-noise pump – another fruit born of the long R&D partnership with the University of Bologna – should further boost sales in this market.

At the heart of the range for the mobile market is, of course, the famous ALP/GHP and ALM/GHM aluminium- and cast-iron-flanged pumps and motors. Before 2000, the company was a bigger player in the industrial market, so the momentum created by these four families helped to give Marzocchi a strong foothold in the industry and to extend displacement from 0.19-200.3cc/rev in eight groups according to gear size (0.25, 0.5, 1P, 1, 2, 3, 3.5, 4). Maximum operating pressure varies on average between 230 bar (3,300psi) on aluminium models and 280 bar (4,100psi) for cast-iron versions, creating products that are suitable for perhaps 95% of mobile applications (but stay tuned – an extensive range of new products is due for launch over the next three years).

One-way traffic

Crucially, the OEM can be assured of a relatively small failure rate. In 2007/2008, returns were approximately 900ppm, and are projected to drop even further year on



year. Reliability is practically at automotive levels because some returns can be attributed to errors in order processing – perhaps merely the adding of an extra zero in the quantity box.

The company's standard two-year warranty is therefore a safe bet, while longer guarantees can occasionally be made available to specific customers.

Customer service is one area Marzocchi is targeting for even further improvement. "We have found that OEMs are happy with our customer service but the industry in general is not really delighting its customers," claims Toscano. "The average level of service is still very low so we will invest even further in this area. We need to release customers from their problems, working closely with them – they will increasingly be looking for quick answers, quick deliveries – and we are already making improvements in this area." **IVT**

Ing. Danilo Persici leads FEA and CFD analysis in Marzocchi's R&D department in co-operation with Bologna University

TOP: The ALM2, part of Marzocchi's famous line-up of aluminium-flanged motors

ABOVE: CFD simulation of the interaction between gear and body

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