

Product Engineering

What lies behind research and development We are innovative because we listen to the market

Each year, Metal Work releases a huge number of new products onto the market. In the last three years, the design rate has been particularly accelerated. A quick look at the 2001 catalogue provides proof. It is more than 700 pages long, whereas, two years ago, it consisted of only 400 pages. But a large number of products is not in and of itself enough to establish a company solidly in the market. "A company's success depends on the quality of the products offered, on how it is able to produce them, on their features", underlines Giorgio Guzzoni, manager of Metal Work product engineering. "In fact, there is only one yardstick for the company to use: what the market wants". "An innovative product that does not meet a real demand is destined to fail", Guzzoni points out. "The same is

true of a new product conceived in a more traditional way, 'copied' from something others have done, but not responding to new needs. For this reason, the development phase that is the key to success during product design is the identification of the basic requirements. By interweaving the various services, functions, demands and roles that each element plays in satisfying market demands, one arrives at a definition of the requirements that need to be met". And there is still another significant fact, according to Guzzoni. If those responsible for design only focussed on market analyses, they would run the risk of producing traditional, non-innovative,

“ Our skill lies in picking up on signals and trends, ahead of our competitors ”

and sometimes obsolete, objects. "The skill lies in perceiving the signals, often latent, and the trends, thus managing to intuit what no



one else has yet done but which will soon be demanded", he maintains. "In our sector, we believe that we at Metal Work have identified a number of trends, common to several products, and we have summarised them in a slogan: 'miniaturisation, integration, black box". Application of these principles has led the company to launch products such as Multimach and Line-on-line, absolutely new products that the market immediately appreciated. The advertising for Multimach, for example, said: "The missing island now arrived! ".

NEW 2002 Line-on-line, a line of products for pneumatic circuits

Metal Work has launched a new line of products onto the market, products that are absolutely innovative, based on a simple but revolutionary idea: to combine, within a single unit, a polymer "fitting", all the components necessary for all pneumatic functions. And so, Line-on-line was created, a line of products for assembly on pneumatic circuits that responds to market demands with respect to greatly reduced sizes, minimum weight, integration of several components in a single unit, modularity and aesthetics. In fact, Line-on-line incorporates several functions. A

unit like this one has never been seen before: one part resembles a tube-tube fitting but is a pressure regulator; a second component seems to be the same as the first but is actually a flow regulator; a third piece resembles the others but is in fact a high-performance valve. Metal Work has actually been able to incorporate, within a single unit, all the principal pneumatic functions. With Line-on-line, all of the products may be connected together, either in series or in parallel, or in series-parallel. In this way, it is possible to construct pneumatic systems with enormous flexibility.

“ Five strong points: greatly reduced sizes, minimum weight, integration, modularity, aesthetics. ”



People at work

The secret? Teamwork

The research and development section of the design department is involved in all the production phases.



At Metal Work, design is entrusted to a smoothly-running group of technicians who, for several years, have been working together to improve existing products and to develop new ones. The product manager must think of the object created as a child: responsibility does not end when the drawings are completed, but is ongoing. In fact, the designer is also involved during the production-, assembly- and inspection phases. When the product is then introduced to

the market and application requirements or operational problems arise, the designer returns to the project. Solving the customer's problem takes priority over any other commitment. The Metal Work

design department consists of various functions, ranging from the product managers, one for each type (cylinders, valves, FRL, fittings), to the assistant designers, from specialists in experimentation and in the

technical examination of customer returns to those responsible for documentation and classifying. But this operational subdivision does not result in stagnant compartments. Knowledge is exchanged, leading to professional growth for the entire group. If Metal Work's objective is to reduce inefficiency and waste and to minimise, to the greatest degree possible, the time to market, Guzzoni says, "then we have to go further, extend the teamwork to technicians in other areas, from industrialisation to production, from purchasing to assembly".

Dates and projections

In order to increase product quality, it is also important to work thoroughly on the design method. Improvements must be continual, thereby increasing efficiency, reducing the time to market and offering customers clear, well-reasoned technical services. A few numbers give an immediate idea of the activity carried out by the Metal Work product office.

- In 2001, replies were written to 551 requests for technical information from customers.
- All of the technical documentation, previously kept in 450 large folders, has recently been computerised. The archives of drawings, on the other hand, have been completely computerised for several years.
- The result is an 85% reduction in the time necessary for preparation of both technical and cost data for the preparation of special-product offers.

- In four years, the efficiency of the technical personnel has increased by 50%. It is in fact this value that has resulted in an increase in the number of drawings, modifications and documents prepared over a four-year period by the same number of people. The next objective? To further reduce the time to market, an area in which there is still much work to be done.

They will be famous

The four newest components in our catalogue

- **Fieldbus for Multimach**
The slave for field bus, manages a Multimach island with 24 pilots.



- **ISO 5599 valves, with M12 connector**
A unique connector in a central position, equipped with LED and manual controls.



- **Cod less cylinders with balls-recirculation guide**
Tempered steel guide for balls-recirculation runners.



- **Pneumobus**
Integrated pneumatic-connection system, connecting FRL, valves and accessories.

