**Mechatronics and Research**

- **How is your company organised for R&D in mechatronics engineering?**

At Metal Work, the research and development activity does not focus on one direction only, rather it covers different fields of activity. We feel that keeping a watchful eye and an open mind about our future is of paramount importance.

Some activities are geared towards basic research, cutting-edge technologies, in terms of both project and process, others focus on specific applications that are aimed at solving specific issues arising from the market, others again come from our subsidiaries that design and develop machines, equipment and electronic devices for their own customers.

**Have you made or are you planning to make any investments in this regard?**

We are continually investing in R&D. For example, we have recently designed and developed an innovative pick & place robot to be installed on assembly machines. The project is the result of the joint effort of one of our Group companies and a team of researchers. This device is patent pending and will be presented shortly.

**Do you usually allocate a share of your turnover to R&D?**

Investments in R&D are clearly an essential item of our budget, as can be seen in our official financial statements.

In actual fact, we devote much of our daily commitment to finding innovative solutions for products and production processes.

**Have you taken any steps in establishing cooperation agreements with universities and research institutions?**

Our collaboration with universities and technical institutions, namely those operating in our geographical area, has been established for a long time.

Our technical departments host interns on a regular basis; we also organize training courses and open our production sites to students for educational tours.

We have also launched a series of activities in collaboration with national and international select institutions, the aim being to expand our research experience on several topics.

2)

**What are the technological trends your R&D activity in mechatronics is focusing on?**

Our research activity mainly consists of focusing on the development of new components and high-tech systems in order to be competitive in a rapidly and increasingly changing scenario, precisely that of automation on the one side, and identifying processes that allow us to be increasingly aggressive in sectors requiring essential products, on the other.

Last but not least, we keep in mind the need for saving energy that, in our case, ideally combines with the search for low-energy consumption products.

**What are the drivers and inputs that have determined this choice, and are there any specific areas of application you are focusing on?**

The main drivers are the market requirements at first, followed by the technical-scientific literature. The fact of being able to be supported by a widespread sales and technical service network allows us to seize ideas and opportunities that are not accessible to others.

Finally, it should be remembered that ongoing dialogue and relationships with research institutions and universities always provide elements to be taken into consideration.

As to the fields of application, I'd say that the R&D function is definitely transversal, especially in mechatronics engineering, in that the final applications are endless and very diversified: from classical industrial automation to the mining industry, including the medical and food & beverage sectors, just to mention some of the numerous fields of application.

3)

**Is there a product/system that better identifies your R&D activity?**

Here I'd like to mention the EB80 and EB80 BOXI electro-pneumatic system.

This assembly of solenoid valves is the result of years of R&D activity conducted by our engineers, mechanical, electronic and industrialisation experts. This system is covered by several industrial patents, some of which have been developed after the initial launch into the market, thanks to the addition of other particularly smart innovative devices, such as the multi-purpose modules that can be used to customize the valve island thanks to the addition of various pneumatic functions downstream.

**What are the technological features characterising this system?**

The EB80 is a project that has led to the construction of an electro-pneumatic island that can accommodate up to 128 valves, which are either arranged on one manifold base or distributed in the system connected in a network of additional nodes.

The EB80 can be interfaced either by means of a multi-pole system or with the most common field buses using IO analogue or digital modules up to a maximum of 120 Ins and 128 Outs.

Last but not least, also worth mentioning the prevailing part relating to advanced diagnostics, which is one of the strengths of the system and is bound to be developed even further in the near future.

Photo 1: one of our research teams

Photo 2: an example of the EB80 island

Photo 3: Corrado Tamiozzo, engineer and R&D Manager at Metal Work

Corrado Tamiozzo, engineer

R&D Manager

Metal Work S.p.A.