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Design

The design department, made up of competent technicians, uses the most modern **3D software** (Siemens Solid Edge) to help the customer modify or design the part to be created.

In some cases we use **Reverse Engineering**, an indispensable and established work methodology that allows us to obtain a 3D CAD model through the digitization of an existing physical object. The most emblematic example is to convert a car component or a motorbike component into 3D and then realize it by CNC. Not all the long-standing Automotive components are, in fact, easily available. With this technology, the component comes back to life!

SIEMENS SOLID EDGE

The design department also makes use of advanced **FEM software** (finite element analysis), to evaluate the mechanical structure of the parts and identify, in advance, the strengths and weaknesses already in the preliminary phase.

With the FEM simulation it is possible to identify:

- weaknesses of the structure,
- breakage points of the structure,
- excessive masses of structure,
- mass homogeneity,
- stressed / critical areas,
- deformation zones.

3D printers are known as the most appropriate means for Rapid Prototyping a component. Together with the FEM design and simulation to prevent unpleasant drawbacks before the construction of the final product. Today, thanks to the acquisition of the new HP Technology, Mececcanyca is able, not only to Prototype quickly, but to **RAPIDLY PRODUCE** without initial costs such as molds and equipment. Now it is possible to produce in medium / high quantities or in any case Prototype, high precision **PA12**

components, with mechanical characteristics equal to a component produced by plastic injection, with unimaginable geometric shapes, with accessible costs and in a very short time.

laMeccanyca has a coloring department to be able to color / sand / burate the PA12 products.

Working

The processes are obtained by **CNC milling up to 5 axes in continuous (Mazak)**, these machines are the most performing and precise in the market, allows us to **create very complex shapes** (maximum **500x350mm**) and to manage the work with maximum control thanks to latest generation technologies introduced, such as **smooth control** and **CAM software** available (Autodesk PowerMill).

The Materials that we usually work are: Inox, Titanium, Carbon Steels, Aluminum Alloys, Brass, Magnesium Alloys, Technopolymers and Carbon Fiber.

Inspections have become a consolidated practice to maximize the efficiency, quality, capacity and accuracy of machine tools. IaMeccanyca, has precise and reliable measuring instruments to draw up dimensional ratios to serve customers, such as the **3D Compact Exagon arm** that can accurately detect all the dimensions necessary for control.



As a last service, on request, we can prepare the surfaces of the details with **micro-blasting**, **sandblasting** or **satin finishing** with **Scotch Brite** to prepare the detail for greater adhesion by the surface protection. Moreover, we help the customer to realize surface finishes of the components, such as: **painting**, **anodizing** from 15 to 45 µm (hard anodizing) and other protective finishes such as those specific to Magnesium Alloys.





NAUTICAL AUTOMOTIVE MOTORSPORT A AEROSPACI INDUSTRIAL MEDICAL TR. MEDICAL TRA TRANSPORT **NAUTICAL**