

Automotive Seals



Throughout history, rubber was always viewed as a “divine” material. Today, the automotive industry has become one of the main consumers of rubber due to its use in tires, windshield wipers, and gaskets for various purposes like reducing vibrations and providing protection against liquid penetration.

Tecma – The manufacturing specialist for gaskets used in the automotive industry

Located in Caen, France, TECMA has specialized in the development and manufacture of machine tools for the automotive industry for more than 20 years. Their machines have been used to produce rubber gaskets in all shapes and sizes for vehicles.

In this niche, TECMA has developed countless standard machines for cutting, sawing, laying, vulcanizing, and melting down rubber that can be individually adapted to meet customer demands. Large international companies like Hutchinson, Metzeler, and Cooper rely on the quality provided by this European market leader.

A new uniform PC-based machine generation

The latest B&R technologies using embedded PC components are integrated in the machine generation currently being developed by TECMA. The older machine generation, which was outfitted with classic open/closed loop controllers and buttons, has been replaced by a B&R Power Panel with a color touch screen. The intelligent operating unit controls all of the machine functions, from visualization and sequence control to temperature regulation. This allows the user to configure all of the temperatures from a single display and store different product data for use at a later time. The PC technology being used has an enormous amount of storage capacity. An additional advantage is that the entire program is stored on a single removable CompactFlash card.

“We were thrilled with the uniformly inte-



The integration of a Power Panel significantly simplifies operation of the new TECMA machines.

grated PC solution since a single operating unit was able to handle all of the machine functions including the axis movements," said Mr. Le Coupanec, manager of the automation department. "Programming with standard languages and being able to easily configure axis parameters are other advantages of this system. These are extremely important time and cost advantages, especially when using brushless motors."

Mr. Gautier, the manager of TECMA, quickly recognized the advantages of this solution for both his machines and his team. "By using a single series of products for all of our machines, we have been able to significantly reduce design demands," he said. "Finding our way in the programming environment was possible with little effort thanks to the use of a single software tool, B&R Automation Studio."

The cutting machines include all of the advantages of a remote I/O design connected with a PC-based controller: smaller switching cabinets, reduced wiring, and access to all of the machine components


using a single tool.

Mr. Le Coupanec added, "Being able to remove modules and wire connections on-site also allowed us to dramatically reduce the amount of effort required for wiring."

TECMA is already working on the integration of PCs with other machine lines.

Mr. Gautier is convinced that the future lies in this technology.

tion process entails connecting both of the profile ends together. The controller must maintain the vulcanization temperature in order to ensure a smooth and tight welding seam.

The part only can be installed in the vehicle after all these steps have been completed. 

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Gasket production

The rubber gaskets are cut lengthwise during the production process. This design step comes right after the rubber is taken from the extrusion system. The rubber is then fed to the configured length of the gasket. The process of handling the material must function perfectly since elasticity and precision play such important roles. The next step involves administering the glue to the gasket. This requires extreme precision. Clips can also be used as an alternative to the gluing procedure. In this case, the gaskets have to be drilled in an additional processing step before the clips are installed. The last step of the produc-



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