

An innovative rubber mixer that leverages a hydraulic drive

Bosch Rexroth, Proteo International and Evercompounds have created a mixer for rubber processing capable of guaranteeing safety and significant savings in terms of installed power, thanks to the use of a hydraulic drive rather than an electric one.

Three companies involved in the same project make explicit the advantages inherent in the use of a hydraulic drive compared to an electric one.

This story is made possible by Evercompounds (CM Manzoni Group), a company located in Fusignano (RA) and one of the major producers of rubber compounds in Italy;

Proteo International, which designs, builds and markets mixers in Ravenna; and, last but not least, Bosch Rexroth, one of the world's leading suppliers





in the drive and control technology sector, which supplied a Hägglunds hydraulic system for the project.

THE SAFETY NEEDS OF EVERCOMPOUNDS

Matteo Mosconi, Project Manager of Evercompounds, which ordered three mixers from Proteo International, says: "We needed to modernise our machinery and, consequently, looked to the market to find the answers best suited to our needs. The idea of mounting a hydraulic motor on one of our mixers for the first time came from the fact that such a solution has always intrigued me due to the greater safety that mixers guarantee and the high starting torque they ensure.

Let me explain better: the big difference between a machine equipped with a hydraulic motor and one fitted with an electric motor with reduction gear is that the first solution stops immediately in case of emergency, thus offering higher safety to the operator and the ability to restart with a very high starting torque and without restrictions. In order to verify the feasibility of the supply, we turned to Proteo International, whose quality products were already known to me".

In Fiorenzo Zanini, Proteo International CEO, Mosconi immediately found an attentive interlocutor capable of meeting expectations. "It was Evercompounds itself that proposed

a machine that contemplated a hydraulic drive," explains Zanini, "and I immediately agreed because compared to an electric solution, motors of this type are lighter and more easily dismantled in case of maintenance, not to mention that they require a lower total installed power (315 Kw/h Hägglunds correspond to 500 Kw/h installed electricity)".

"Bosch Rexroth – adds Zanini – worked with us on a very good idea, namely to equip the drive with a small control unit aimed at safety counter-rotation, in order to provide better safety to the operator. This element is an extra, a plus that is important to us since mixers are, so to speak, risky (a lot of attention must be paid by those who work



A detail of the Hägglunds hydraulic motor from Bosch Rexroth.

with them), and should an operator get too close to the machine during processing, he would not suffer any consequences, since the machine stops very quickly. In short, with the addition of the auxiliary control

unit, safety becomes total”.

THE BOSCH HYDRAULIC MOTOR

Davide Borroni, Sales Officer at

Bosch Rexroth, delves into more technical details relating to the Hägglunds motor installed on the mixer: “Let me draw up a brief list of the advantages achieved by installing our drives. First: reduced overall dimensions, since the hydraulic motors are dimensionally smaller than the electric ones with gearbox, and even if, in the specific case, we installed a control unit, such unit can be operated remotely and even placed outside the shed. Second: the motor is installed directly on the cylinders, therefore without the interposition of gear reducers, and this means that its assembly and disassembly are extremely fast. Third: the immediate stop.

Thanks to the Hägglunds motors we can stop the mixer even within 10 degrees, and this translates into a significant increase in operator safety. Fourth and last: the machine manufactured by Proteo for Evercompounds, in consideration of the solutions adopted (starting with the installation of a hydraulic motor) ensures improved energy consumption performance compared to a machine fitted with an electric motor”.

FUTURE PROJECTS

The prospect of further projects relating to mixing machines to be supplied to Evercompounds, which operate with Hägglunds hydraulic motors from Bosch Rexroth is illustrated by Zanini: “This process started with Mosconi in order to optimise performance is an element that I consider very interesting. We will ensure that a hydraulic system is even more advantageous than an electric system (remember that the latter must work at least 90% of its load to run properly, otherwise it would burn energy unnecessarily). With this hydraulic drive combined with increasingly intelligent electronics we will ensure that pumps and electronics interact more and more with each other to maintain constantly high performance”. ◆