FLOATING-COLUMN HYDRAULIC PRESS

New press design suited to SUV and TBR tire production offers significant advantages over previous industry-standard technologies, streamlining the curing process

Tire Technology Expo 2020 marked the beginning of a new era for Uzer Makina as the company announced the development of an SUV and TBR version of its most popular, internationally patented floating-column hydraulic press. The company dispatched the first 65in floating-column hydraulic curing press at the end of 2020. This new version surpasses the existing frame-type solution, which used to be the industry standard in almost every aspect. Compared with its predecessor, the new design is simpler, weighs much less, has fewer components, and requires less maintenance and energy. Most importantly, there is no significant difference in price between the two types.

Tire manufacturers will benefit from the advantages of the floating-column technology for the curing of larger tires. It provides fully automatic mold height adjustment and therefore eliminates the need for conventional mold height adjustment systems. The technology features two squeezing cylinders under the columns on both sides of each cavity. The piston rods of these cylinders are directly connected to the columns. Besides applying squeezing force, these cylinders also change the position of the locking point, which is located on the columns for adjustment of mold height. Therefore, the press does not need multiple locking points and can work perfectly well with just one. Columns rise at the end of each cycle and release the locking plates from grooves, meaning the locking mechanism can work without jamming.

In addition to these benefits, Uzer Makina can construct the new floating-column hydraulic press as a V-shaped unit to save space. This enables tire manufacturers to use the curing press area at least 12% more efficiently: tire producers will be able to place 112 curing presses in an area that was previously large enough for only 100 machines. This concept was developed by Uzer Makina engineers in response to the recent market demand for upgrading existing machines in tire production plants.

Recently, Uzer Makina has been focusing its efforts on increasing the energy efficiency of its presses, helping tire manufacturers comply with the latest European regulations. With this in mind, the company has developed energy-saving steam hoses as subsidiary products that work with Uzer Makina presses as well as others. With these hoses, it is possible to achieve energy savings of up to 5% per press – a significant amount considering that tire curing is the most energy-consuming process in tire production. The hoses also prevent the curing area from overheating, which can remove or reduce efforts needed to cool the area to normal temperature.

Uzer Makina is not solely a tire curing press and mold producer; the company also strives to improve the efficiency of the entire curing process. The team places great emphasis on digitization and designs its presses to be fully compatible with Industry 4.0 requirements such as EMS, AGV, SCADA, MES and ERP systems. The company also conducts its own research and works with leading industry companies to offer solutions such as mold preheating presses, mold-changing pickup cranes and RFID mold management systems – helping tire manufacturers achieve the most efficient curing processes.

Above: Uzer Makina's floating-column hydraulic press improves upon the frame-type solution

Below: Crucially, prices for the new floating-column press are not significantly greater than for frame-type machines

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