



Development and testing of a new weft insertion system to increase the process speed in warp knitting

The processes and machines used in warp knitting are characterized by a stitch-forming process. In addition to the stitch-forming yarns, weft yarns can be inserted into the knitted fabric, which often represent the process limitation in terms of speed.

As part of this project, a new weft insertion system based on a freely rotating rotor has been developed and tested. The yarn is drawn off via a feeder unit from a yarn bobbin located behind the motor. The yarn passes through the opening of the motor and then through a rotating ring attached to the rotating inner eyelet of the motor. The technology of the freely rotating rotor allows a free yarn path, which feeds the yarn directly to the stitch forming area via a traversing guide. Based on these results, a pilot system with ready-to-market products can be developed from the prototype. All warp knitting technologies can benefit from the new weft insertion system, and the development of new, highly productive products can also follow on from the project.

The patent of the Niederrhein University of Applied Sciences "Rotor eyelet" (PVD A 18/071 A) provides the basis for a new process based on a direct drive motor that is more energy-efficient, resource-saving and therefore more productive and economical.

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Brochure about ITMA

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