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Solutions for lightweight construction and fibre composite technology

During the JEC Europe 2012 at stand P38, KraussMaffei will present its know-how regarding machine and process technology for the production of composites along the entire process chain – from component development, pre-production and component testing through to series production and post-mould processing.

According to KraussMaffei, an advantage for lightweight construction applications is the production of carbon fibre-reinforced plastic (CFRP) components using the high pressure resin transfer moulding (HD-RTM) process with all work steps along the entire process chain. This begins with the assembly of the fibres and production of the dry fibre preforms. They are then guided into a mould specially designed and manufactured by the company. Of particular interest in this regard is the design of the mould carrier of type SFT-MX600 with components from injection moulding technology, says KraussMaffei. Its modular concept makes use of proven components and the advantages of injection moulding machine series production.

The RimStar thermal mixing and metering unit features the company's stainless steel pump, which supplies the RTM high pressure mixing head. The mixing head mixes the components at high pressure, meters internal release agents, and feeds the matrix material into the mould at low pressures. The carbon fibres are impregnated with the resin in the closed mould. Hardening then takes place in a cycle time of less than 4 min. The CFRP parts are then removed and fed for finishing into a RoutingStar milling cell. CFRP-friendly cutting tools and an optimised extractor inside the milling head reduce dust and contamination of the components.

As part of its cooperation with Dieffenbacher GmbH, KraussMaffei supplies complete HD-RTM systems which cover the entire production process from processing of the carbon fibres through to the ready-to-install, post-mould finished part.

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