

High-performance solutions for the process industry

GKD presents many innovations at ACHEMA 2012

Innovations for sustainable process safety is the main theme of GKD – Gebr. Kufferath AG at ACHEMA 2012. No fewer than three business units of the leading technical weaving mill worldwide are currently giving answers on this theme to the main challenges faced by the process industry. They are presenting solutions for systems, units and components based on innovative mesh constructions. The main focus of this appearance at the trade fair is the comprehensive spectrum of consulting, analysis, development and production capabilities that customers from the process industry can benefit from. Whether it is a matter of improving the efficiency of existing units, opening up new markets or developing innovative products; GKD is presenting itself at ACHEMA as a reliable partner and courageous lateral thinker that supports its customers in dynamic technological environments with economically viable solutions.

Re-screenable vertical pressure leaf filters

The SolidWEAVE business unit, developer and manufacturer of high-precision meshes and complex filter media, is introducing its' NeverLeak technology leaf filter elements that can be re-screened several times. Full sealing is guaranteed throughout thanks to automated welding of the filter mesh to the solid frame construction. The welding seam that is located along the perimeter of the frame provides a reliable monitoring option to immediately make leaks visible, whether in manufacture or actual use. Exact seating, simple maintenance, high mechanical strength and an even building up of the filter cake makes this concept ideal for the filtration of

edible oils and for use in the chemical and pharmaceuticals industries. The total costs of this filter leaf technology are reduced by up to 40 per cent, since each filter leaf is re-screened to original quality condition multiple times over its' life.

The future of exhaust gas filtration

SolidWEAVE is presenting a further development at ACHEMA with a great deal of promise for the future in the form of mesh solutions for the new generation of automotive exhaust gas filtration methods. Working in close collaboration with leading car makers and suppliers, the Düren-based mesh specialist has devised modules for the more efficient filtering of soot particles.

Micro-screening in waste water treatment

Increasingly tough requirements for capacity and cleaning performance as well as cost and energy efficiency are characteristic of the situation in sewage treatment plants worldwide. The result is a growing demand for mechanical wastewater cleaning. The standard filter devices used for this application are disc filters. Frequently separation rates down to a range of 10 µm are required. The optimized Dutch Weaves (ODW) made by GKD – Gebr. Kufferath AG, are becoming more and more important here and offer markedly improved discharge quality and efficiency in sewage treatment plants.

3D mesh

The development of Volumetric Mesh has resulted in a metal wire mesh that has achieved significantly greater volume porosity than previous designs thanks to the special weaving technique that is used. Volumetric Mesh permits a significant optimisation of drainage meshes in filter

modules or multi-layer applications. Other applications in which meshes assume the function of a heat exchanger can be structured with markedly greater efficiency by increasing the overall porosity of the structure with the aid of Volumetric Mesh.

Integrated simulation environment

GKD is showing on the basis of the WeaveGeo integrated simulation environment that has been further developed a wide variety of options to allow mesh geometries to be modelled individually for each customer and to specifically improve the efficiency parameters through CFD simulation. Distinctly shorter development times, reduced costs and a process-specific optimal design of the mesh are the basis for the success of this solution. The responsible project engineer at GKD, Dip. Eng. MBA Markus Knefel, will present sample applications of WeaveGeo in the technical congress that is taking place at the same time at ACHEMA. His presentation with the title “The design and validation of woven filter media using CFD modelling” will be part of the “Mixing and separation technology – Filtration media and modelling” session on 18th June 2012, 14.30, in hall CMF, room Harmonie 1.

Worldwide leader in belt technology for vacuum belt filters

The WEAVEinMotion business unit, the specialist for high-efficiency process belt technology, is showing its portfolio of capabilities with many possible applications in the chemical and environmental industries. This includes VACUBELT[®] filter belts for the FGD gypsum dewatering in vacuum belt filters. Some of the biggest and technically most advanced coal-fired power stations worldwide place their trust in the latest products from the VACUBELT[®] family, the VACUBELT[®] 2015. This type of belt is made up of polyester monofilaments without additional multifilament weft



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wires (type 2035) or staple fibres (type 2025). The specific construction of the mesh with an increased number of pores while at the same time reducing the opening improves air permeability and hence the dewatering performance. Since the VACUBELT[®] 2015 hardly ever blocks up in sustained operation, unlike conventional belts, the efficiency of the filtration process remains constant. The smooth surface makes it easier to clean the belt. The high cross-stability and filter performance and a residual moisture value of less than 10% emphasize the economic virtues of the VACUBELT[®] 2015. The ability to reliably withstand chemical and thermal stresses also qualifies VACUBELT[®] filter belts for numerous applications in cooling lubricant filtration and the treatment of phosphorous compounds or rock salt.

High-performance dryer belts that reduce emissions

GKD is also presenting as one of its main points at ACHEMA 2012 high-performance dryer belts whose process-independent mesh constructions of metal or plastic can reliably withstand even the most demanding chemical and thermal conditions, as in the case of the drying of PTFE. Their unmatched level of dust retention makes GKD dryer belts of the CONDUCTO[®] type especially environmentally friendly. New applications in the field of renewable energies for the drying of digestates from biogas units round out the broad spectrum of uses for these belts.

Savings in time and money through customised service

WEAVEinMotion also makes use of the proven WeaveGeo simulation environment for the optimal and application-specific design of process belts in a time-saving way. The PAD seam, for which a patent has been applied, an especially durable further development of a conventional hook seam,

shows once again the world-class abilities of this business unit in seam technology and the provision of service.

Process filtration without filter aids

The modularity and resulting high degree of flexibility of MAXFLOW filter systems from the GKD-CompactFiltration business unit are simply predestined for use in a wide variety of areas in process filtration. Made entirely of stainless steel, self-cleaning and working without filter aids, they provide sustainable optimisation for central machining processes. The MAXFLOW CS 1000-503 compact filter system combines filtration and briquetting in one space-saving unit. The system offers particle separation right down to the microfiltration range, without the need for added filter aids. An integrated press unit automatically compresses the sludge into pure, non-drip briquettes. This reduces the amount of carrying over of working media and reduces the costs for consumables and their subsequent disposal. The system concept, filter medium and the number of filter discs and heads are all designed around a particular application. The material- and process-specific settings are the basis of the high efficiency of the system, which has proven its worth in day to day use as well through convenient operation and simple maintenance.

Self-sufficient plug-and-play solutions

As a self-sufficient plug-and-play solution, MAXFLOW meets a wide range of typical process requirements in fine filtration. A tailor-made alternative to the compact filter system is often a single filter head that is integrated into existing system environments. The MAXFLOW belt filter with stainless steel mesh is also characterised by convenience and cost efficiency. Its filter capacity corresponds to that of current paper belt filters, and without the addition of filter aids. This means that the high costs for paper belts that



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had been normal up to now are now a thing of the past. A tank system with integrated scraper below the belt underlines the efficiency of the unit. In addition, at ACHEMA GKD-CompactFiltration is presenting for the first time a combination of MAXFLOW filter head and belt filter, something that had been repeatedly requested by machine makers, and which reduces the load on existing systems.

Visit GKD – Gebr. Kufferath AG at ACHEMA 2012 in Frankfurt, 18th – 22nd June 2012,

Hall 5.0 stand C37

9,180 characters incl. spaces

GKD – Gebr. Kufferath AG

The owner-run technical weaver GKD – Gebr. Kufferath AG is the global market leader for metal and plastic woven solutions. Under the umbrella of GKD – WORLD WIDE WEAVE the company combines four independent business units: SOLID WEAVE (industrial meshes), WEAVE IN MOTION (process belt meshes), CREATIVE WEAVE (architectural meshes) and CompactFiltration (compact filter systems). With its eight plants – including the headquarters in Germany and other facilities in the US, Great Britain, France, South Africa, China, India and Chile – as well as its branches in Spain, Dubai, Qatar and worldwide representatives, GKD is never far from its customers.

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