

Exact!

Application stories from around the world

Inside Issue No. 25



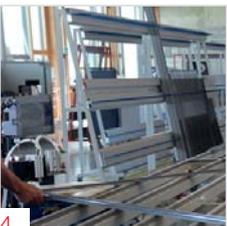
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New piston metering systems

To process low to high viscous and even abrasive materials, the Hilger u. Kern / Dopag Group has developed two new product lines, metadis and metamix.

These new products are the result of continuous research, development and engineering with the goal of finding a visionary concept, able to set new standards for the future in the metering technology.

The modular construction of metadis and metamix enables a wide range of use. Both product lines are especially recommended if a material needs to be applied in a high precision and repeatable way.

Various constructional characteristics are resulting in minimal maintenance and reduced service intervals which leads to a longer product life.

The metering units are featuring a snuff back effect which helps to avoid dripping of material and a related contamination of the work space.

These modern metering systems can be used in industry such as automotive, electrical and electronic, renewable energy, aerospace, white goods and many more, whenever materials need to be applied in a high precision and repeatable process.

metadis



metamix



Hilger u. Kern / Dopag Group

Local job protection



Environmentally friendly vans are bonded with DOPAG eldomix metering and mixing systems



 The relocation of production capacity from Western European to Eastern European or even Asian countries is usually associated with a cut of jobs in the country of origin.

This was not so in the case of the French company SITL (Société d'Innovation et de Technologie de Lyon) who are based in Lyon. They responded with innovation to such global changes.

As one of their two main business areas, the production of washing machines had to be relocated, the question was how the company with about 430 employees should realign to protect the jobs of the 200 employees affected by this decision.

Since clean tech has always been part of the company strategy and the demand for electric and hybrid vehicles was rated as an opportunity, the production of environmentally friendly vans in the Brandt motors division was their solution. These vans can be used in all areas where space is limited or the emission of sound is an

important factor as for example in the centre of cities.

On a 200 meter long production line the vans are assembled using the philosophy of lean production which ensures efficient workflows and short lead times so that a cost optimization can be realized.

One of the production steps includes the conjunction of the car body and the chassis. They are bonded together using various adhesive beads with lengths from 2 cm up to 100 cm. To meet the requirements of this process a 2K methacrylate adhesive with a mixing ratio of 100:10 and a viscosity of 250.000 mPa s was evaluated.

The lean philosophy assumes process reliability on all stages of the production, therefore it was also required for this bonding application.

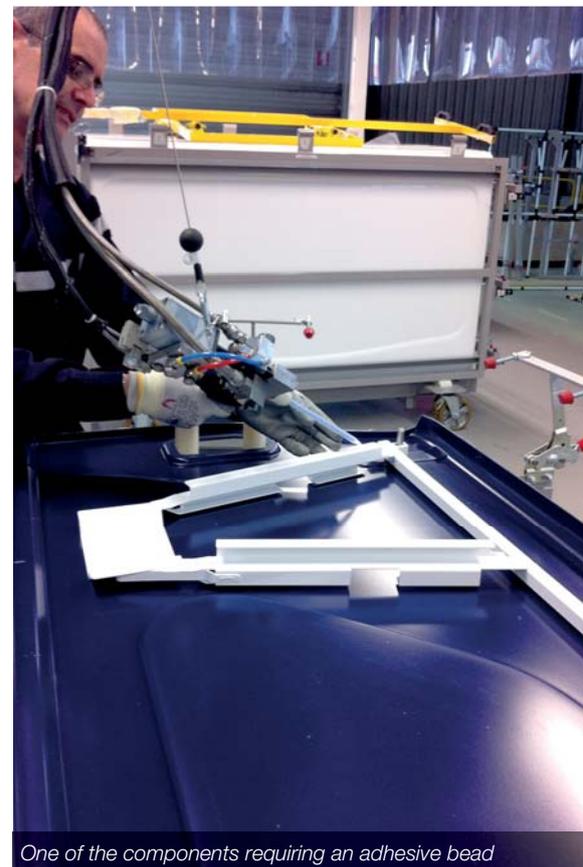
As DOPAG France has delivered metering and mixing technology to SITL since 2002, the company again decided to use the proven technology of the Hilger u. Kern / Dopag Group on this new project.

According to the requirements of the process a metering and mixing station with two eldomix systems has been established. The material is supplied by one central barrel pump pair using 10 meter long hoses to feed the two eldomix systems with adhesive. Since the processed material is a methacrylate the entire system is built in stainless steel.

The actual production of 10 vans a week should soon be increased to 25 units a week and this is in a place where not long time ago washing machines were being assembled.



Dispensing head of one eldomix system



One of the components requiring an adhesive bead



Composite technology



Lighter, stronger, smarter: DOPAG variomix system used to produce composite parts



Lightweight design is more relevant than ever, and composites are the lightest materials of all, but there are many more good reasons for choosing composite solutions.

GKN Aerospace Applied Composites AB located in Linköping, Sweden is Scandinavia's leading expert in the development and manufacture of composite components mainly for the aerospace, defence and transportation industry.

These components allow companies to create lightweight, strong and cost-effective end products with optimum performance and a reduced environmental impact.

With the help of advanced composite design, premium materials, bonding techniques and state-of-the-art production methods, virtually any characteristics can be incorporated into a composite



Pressure vessels are one of many ACAB products

product. Previously the resin for these bonding processes were handled manually or by proprietary equipment but in order to reduce maintenance costs and increase efficiency it was decided to implement a double DOPAG variomix 1A PLC for the filament winding process.

To process the low viscous 3K-Epoxy resin from Huntsman Advanced Materials, the variomix system is fitted with 45 l material pressure vessels and bung-mounted pumps to refill the vessels out of 1000 l containers. The required mixing ratio of the 3K-Epoxy is

100:87:0.7 by volume. The mixed material is dispensed into the filament winding machine.

Depending on the dimensions of the components, approximately 12 kg of the mixed material is processed every hour.

Comment from workshop engineer Björn Ekenberg: "We are very happy with the performance of the metering system delivered from the Hilger u. Kern / Dopag Group, up to now we have handled more than 100 tons of adhesive with this system."



Double variomix 1A PLC

Boosting the capacity

Schweizer

DOPAG 1K metering unit used to produce wood/metal windows



+ Ernst Schweizer AG Metallbau, located in Hedingen, Switzerland, is an independent family-owned company specialised in metal constructions and offers a wide range of products for the construction industry.

The company with more than 620 employees in their business divisions facades, windows and letterboxes, wood/metal systems and solar energy systems has production plants at 4 different locations within Switzerland.

Windows and facades from the wood/metal systems division are in trend. The aluminium which is used for the outer surface ensures durability and aesthetics whereas the wood that is used on the inside has perfect heat insulation abilities. Associated with a new production

strategy within the wood/metal systems division, Ernst Schweizer AG decided to specialise the location in Möhlin, Basel, for the automated mass production of windows.

The purchase of a new cutting line for the aluminium frames gave the opportunity to doubling the production capacity. To reach this target, it was also necessary to optimise the next production step where the frames are bonded together. At that time a pneumatic cartridge gun was used to apply the adhesive.

As a long-time customer of DOPAG Switzerland it was clear for Ernst Schweizer that the well trusted metering equipment of the Hilger u. Kern / Dopag Group should be used for that application.

During production the single aluminium profiles are connected using plastic angles then they are inserted into a customised fixture. To achieve the required stability 7 respectively 11 grams of an adhesive and sealant material needs to be applied into the holes of the connection plates.

The used material from Collano is fed with a DOPAG P80 drum pump. A material pressure regulator ensures perfect pressure conditions and two cartridge chamber metering valves of the 418 series guarantee the required metering volumes.

Based on this new solution, Ernst Schweizer AG is now able to use the full capacity of the new cutting line in Möhlin which allows boosting the production of up to 250 window units per shift.



Aluminium frame with connection plates



Fixture with integrated metering unit



Seat comfort



Leading supplier of lumbar support systems counts on DOPAG components

Have you ever thought why seating in one car was more comfortable than in another? It might be that you have come over a lumbar support of SCHUKRA!

SCHUKRA is the world's leading supplier of lumbar and seat comfort systems for the automotive, aviation and commercial furniture industry. The product range covers a great variety of manually and electrically adjustable types.

At the production site in Berndorf, Austria 250 employees are assembling up to 60,000 lumbar support units each day. Following the KAIZEN principle a continuous improvement of all production processes has been implemented. This led to more automation within

the lumbar support assembly lines also including the different lubrication application. Previously the grease was applied by hand using simply a brush, but in order to meet the expectations regarding accuracy and productivity new solutions were required.

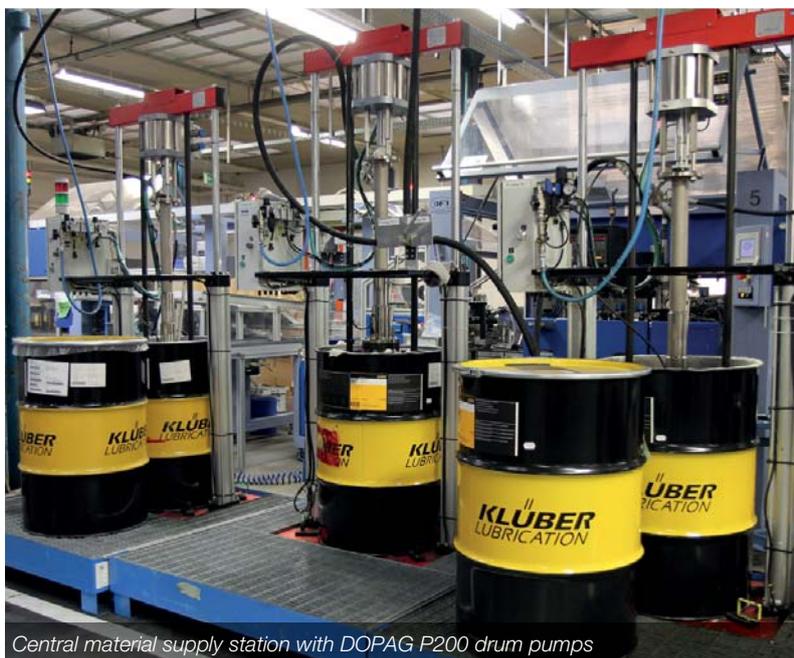
Recommended by the local system integrator, SCHUKRA decided to use metering equipment from the Hilger u. Kern / Dopag Group. During the assembly of an electrical lumbar support, 4 different grease applications are necessary to achieve the full functionality of the final product.

For these applications with volumes in a range of 1 to 6 grams, a grease from Klüber was selected as the

most suitable. A central located material supply station with DOPAG P200 drum pumps is feeding the material continuously to the different application points within 4 assembly lines.

Depending on each application either DOPAG chamber metering valve or needle dispensing valves are used to dispense the exact volume of grease to the right place.

Comment from Karl Opel, maintenance manager at SCHUKRA Berndorf: "We are very satisfied with the metering technology we use especially the drum pumps which have not needed any maintenance so far even though they are used in 3-shifts and have been up to 5 years in operation."



Central material supply station with DOPAG P200 drum pumps



One of the applications: Dispensing 5 grams grease onto the basket of the lumbar support unit

Dr. Weidmann, as the Managing Director of OTTO you have pushed the vision „We create good relations“. What does this mean?

Successfully. The key lies in the durability, the longevity and sustainability. A very important point to note here are the „good relations to our employees, with whom we strive for a permanent employment. This in turn forms the basis for long-term customer, supplier and partner network relationships. Our flexibility in terms of product modifications and especially our logistics and consulting concepts are the key for successful relations with our business partners.

What is your relation to the Hilger u. Kern / Dopag Group?

For more than 12 years we have been in contact with each other and during these years the partnership has continuously been stabilized and expanded always having the advantage for the customers in mind.

Developments within the organisation due to market changes form an ideal basis for a good working relationship, which is appreciated by the customers. It is also crucial that based on our positive experience from previous projects we can recommend the Hilger u. Kern / Dopag Group with a clear conscience.

Which developments do you expect on industrial adhesives and sealants?

Adhesives are used in more and more bonding applications and are already state-of-the-art technology in all areas. Just a few years ago certain constructions which were originally designed for conventional joining techniques such as screws, rivets or welding were changed to bonding applications with great effort. Today the bonding technique is already being considered in the design and construction phase and the requirements are steadily increasing.

The challenge is to build up confidence in the material properties especially if they are used in areas where high mechanical or chemical influence occurs. Based on many years of positive experience these adhesives have proven their functionality which led to an increased use in the private sector. Because of the optimal process control possibilities the bonding technology will almost certainly open up many more areas.



Sealants • Adhesives

The Hermann Otto GmbH is a privately owned (5th generation) company which looks back on a history that lasts more than 130 years. As a specialist in adhesives and sealants OTTO is one of the leading material manufacturers in Europe.

At the company headquarters in Fridolfing, Germany around 320 people are employed and another 50 worldwide in sales. The product range includes silicone sealants, adhesives based on silicone, polyurethane, silane-terminated polymers (hybrid) and acrylics.



Dr. Volker Weidmann:

- Born in 1960, Bryan, TX - USA
- Married, 3 children
- For 16 years at OTTO-CHEMIE (CEO since 1998)
- Degree in chemistry and graduation in biotechnology

Results out of the first „Exact!“ reader survey:

In August 2012 the Hilger u. Kern / Dopag Group initiated a global reader survey regarding the company magazine Exact!. First we would like to thank all the many readers who gave their valuable feedback.

93% of those rated the design, content and pictures as good or very good. On the other hand more than 60% would rather like to have information on material suppliers or market news than articles about sales partners, exhibitions or new employees.

Editor

Hilger u. Kern / Dopag Group
Marketing Communication

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