Exact!

Hilger u. Kern / Dopag Group Application stories Issue No. 10

New high volume VARIO-MIX metering and mixing concept launched

In a departure from the more usual gear type or lever system driven variable ratio, multi component piston pump machines, the brand new VARIO-MIX APD machine relies on two completely separate piston pumps, each driven by its own reciprocating hydraulic motor

Suitable for light to high viscosity media, the VARIO-MIX APD will typically handle polyurethanes, silicones and epoxy resins in such applications as bead laying, laminating and potting, at significantly enhanced flow rates of up to 12 litres per minute.

The separate hydraulic drive motors are controlled electronically. The hydraulic cylinder driving pump A is able to vary the speed of output from the pump, although the pump is constantly set to 100% of its stroke.

However, both the stroke and the speed of the motor driving the B pump is able to be varied whilst synchronised with the A pump according to inputs at the controller, hence producing a variable ratio system.

Gear type flow meters monitor the output of each pump separately, prior to mixing taking place, ensuring that the volumetric output from each pump is in accordance with the required flow rate and mixing ratio that has been selected.

The pumps are fed with material from on-board pressure feed containers which are mounted onto a portable chassis, along with the hydraulic power pack.

International strategy meeting

From left to right: Alois Tschopp, Gerhard Witzig (DOPAG Switzerland), Pierre Montala (DOPAG France), Reiner Kern, Frank-Joachim Kern (Hilger u. Kern Germany), Mario Vaglietti (DOPAG Italy), Ekaterini Alexiadou (Hilger u. Kern Germany), Calvin Priest (DOPAG UK), Henning Pedersen (DOPAG Denmark)

Early in January the Hilger u. Kern / Dopag Group Companies met for the annual strategic meeting in Mannheim, Germany, to define objectives and review new product developments as well as forthcoming major projects.

Amongst the outcomes of the meeting was a consensus to focus on carefully identified key market niches that enjoy a global presence.

Also under discussion was the new marketing communications concept, particularly in relation to the recently relaunched website that now features comprehensive product and application downloading facilities for visitors.

Inside

Blade runners

New ELDO-MIX resin infusion system guarantees mix ratio accuracy over many hours of dispensing

With worldwide electrical energy generated by wind power planned to reach 12% of total energy requirement by the year 2020, compared to the present 1%, it is clear that the production of wind generating equipment is set to soar.

Key components of this equipment are the rotor blades that turn the turbines. The fabrication of these glass reinforced plastic (GRP) rotor blades is quite a complex and specialised process.

The production technique consists of three distinct stages. Firstly, most blades are manufactured from two halves, following which they are bonded together and finally they receive a smooth outer coat.

What follows is a brief insight into the first production stage where a vacuum supported infusion of a two component resin into fibre matting takes place.

Since the operational efficiency of a windmill largely depends on the mechanical attributes of the rotor blades, one of the most important aspects of this process is the deviation from the selected mixing ratio, which must not exceed 3% during the entire time of the infusion process, which can typically take up to six hours.

The mixing ratio is capable of being checked after manufacture by means of a glass transition temperature test, which defines at which temperature the material has the highest deformation. However, not only is it vital to maintain a stable mixing ratio, but also the output rate must be adjustable during the metering process if required.

In order to attain these stringent requirements, the Hilger u. Kern / Dopag Group have developed a new ELDO-MIX metering and mixing system specifically for the vacuum supported infusion process that has been designed to have an accuracy of 1%, whilst the output rate is changeable in steps of 2% during production.

Key components of this solution are the magnetically coupled axial piston pumps and an MR20 high speed integrated metering computer, with system monitoring functions and production data capture, whilst all the necessary interfaces to allow for integration into fully automated production processes, or a master computer exist as a standard function.

Demand from the marketplace dictates that mixing ratio flexibility is an equally important requirement and can be achieved with the ELDO-MIX by not only altering the frequency of rotation, but also by adjusting the stroke length of the pumps.

The axial piston pumps

The year of the pig

DOPAG ECONO-MIX guarantees adhesive quality and provides cost savings in production of portable building panels

Filling the roller coater with mixed polyurethane

Laying the polyurethane onto a panel

A finished panel

Portapig Ltd. has been manufacturing specialised portable nursery, farrowing and grower buildings for pigs, in the town of Castlederg in Northern Ireland since 1997.

The portable buildings make use of the application-focussed range of "AgriTherm" bonded panels that have been designed and developed specifically for the pig and poultry sector by their sister company, Bonded Panels Systems Ltd.

The bonded panels are produced from a high quality GRP, have a wooden frame and a uniquely designed high quality PVC baseboard. The panels have excellent insulation properties, ensuring optimum temperature conditions for the pigs in all weathers, the insulation value of the "AgriTherm" panel being around twice that of conventional panels.

Adhesive is laid onto the panel sections during production using hand roller coaters that are fitted with a reservoir, into which mixed two component polyurethane adhesive has been dispensed. The polyurethane adhesive has a mixing ratio of 100:23 by volume and arrives at the factory in 200 litre capacity drums.

The base material is of a high, pasty viscosity and requires a DOPAG P200 twin post ram mounted drum pump to feed the material to the metering and mixing machine. However, the isocyanate component is of a much lighter viscosity and only requires a 1:1 pressure ratio bung type feed pump.

Proportioning takes place by means of a DOPAG ECONO-MIX piston pump type metering and mixing system. The ECONO-MIX features a variable mixing ratio that is manually adjustable with double acting piston pumps that allow for a continuous output on demand.

Proportioned components are kept entirely separate until they reach the outlet of the DOPAG twin snuffer valve when they enter a disposable plastic static mixer before being dispensed into the reservoir of the roller coater.

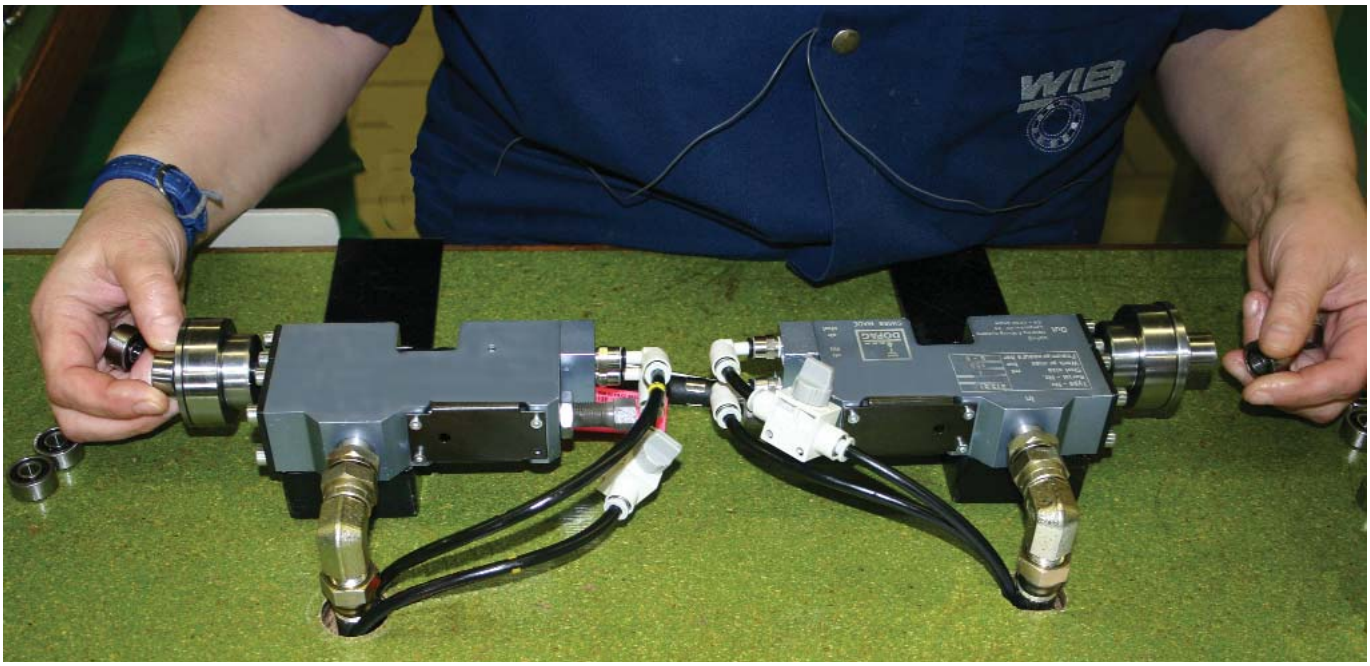
Prior to the installation of the DOPAG ECONO-MIX system, Portapig relied entirely on hand proportioning and mixing of the adhesive, which sometimes led to a poor quality mix, with a subsequent negative effect on the quality of the finished panels.

Since the installation of the new system, not only has quality become consistent, but also wastage through over mixing has been eliminated, leading to welcome production cost savings. For more product information, visit www.bondedpanels.co.uk

Bearing productivity in mind

Swiss bearing manufacturer increases productivity by 30% with DOPAG grease metering system

WIB
RotoPRECISION Inc.
SWISS MADE



The operator offers up bearings to the twin DOPAG cartridge type metering valve

Founded in 1961, WIB is a speciality miniature precision bearing manufacturer located in Bulle, Switzerland with an industrial customer base of original equipment manufacturers and distributors in more than 30 countries of the world, to whom they export around 95% of production output.

WIB manufacturers products under it's own "Swiss Made" brand, as well as for many other major bearing manufacturers around the world.

DOPAG P30 drum pump

Following the assembly process, each bearing must be individually lubricated with a metered shot of grease. This is a labour intensive procedure, as each bearing must be offered manually to the metering device.

Previously, WIB were using a 1 kg size shot pump, which frequently needed to be manually refilled, causing delays in production and increased the opportunity for spillages. Furthermore, the grease application device was hand operated, which often led to repetitive strain for the operator.

DOPAG Switzerland's answer to this unsatisfactory condition was to design a replacement system that featured a DOPAG P30 drum pump, to feed the grease directly from the 25 kg shipping pails, thereby entirely avoiding the process of decanting the grease into a separate pump.

The P30 pump is able to develop sufficient power to feed the grease under pressure to two separate DOPAG cartridge type metering valves, which allows the operator to process two bearings simultaneously if desired.

Foot operated pedals control the metering valves, leaving the operator's hands completely free to locate the bearings into the purpose designed applicators.

An added feature of this new system is the ability to quickly and simply replace the applicators to fit a variety of different bearing sizes whenever needed.

Remarkably, WIB have reported a 30% increase in productivity as a result of purchasing the new system, as well as a marked improvement in cleanliness due to the use of the P30 pump, whilst at the same time, the operators have found it to be far more user friendly, further adding to the increased productivity.

An end view of an applicator, clearly showing a metered shot of grease that would normally be injected into a bearing

Full speed ahead

Boosting the structural rigidity of yachts for one of the world's leading boatbuilders

This year, Jeanneau celebrates its 50th anniversary as the builder of some of the world's most coveted boats.

From the first wooden dingy that M. Henri Jeanneau constructed in his father's workshop in 1957 to today's breathtakingly beautiful ocean going yachts, by way of the first fibreglass hull built in 1960, Jeanneau has accumulated the knowledge and expertise to consistently perform with distinction in the world's premier racing events, including the provision of boats for the Olympic Games.

While computers and modern production techniques can help to produce a superior finished product, the overall success of Jeanneau however, is found in the artistry of the experienced craftsman.

Now one of the largest leisure yacht builders in the world, the challenge has been to find the right balance between innovative technologies and time-proven traditional craftsmanship, so whilst maintaining essential elements of their heritage, they have also embraced the modern world of advanced technologies.

Strength and reliability are the cornerstones of Jeanneau's approach to building quality boats. Each hull is constructed entirely by hand. To provide stiffness, a structural grid of laminated hardwood is bonded directly to the hull.

The beads of bonding adhesive are applied manually by a skilled technician, using a hand held dispensing valve, which will eventually guarantee the quality and solidity of the finished boat.

The adhesive is fed under pressure to the dispensing valve by a DOPAG BOOSTER-MIX system, designed to automatically introduce a small percentage of an accelerator or "booster" into the adhesive, which will speed up the polymerisation process and significantly reduce curing times.

The DOPAG BOOSTER-MIX is a compact, reliable and self-contained solution that utilises standard DOPAG volumetric metering technology to accurately introduce the accelerator into the adhesive, directly from its original packaging.

Twin powerful oversize rams drive the pump and follower plate into the drum of adhesive, ensuring positive priming with even the most viscous of materials.

The accelerator is fed separately from its flexible packaging by means of a pneumatic cylinder to a DOPAG metering valve. Its volume in proportion to the adhesive can be infinitely adjusted between the limits of 1% and 3%.

The two components are then fed separately to the dispensing valve where they meet before being applied to the boat.

Dispensing the "boosted" adhesive

DOPAG BOOSTER-MIX

DOPAG FAR EAST celebrate their first 10 years with Asia distributor meeting

DOPAG FAR EAST was registered on 30th September 1996 and after a decade of operating from their regional offices in Kuala Lumpur, Malaysia, it was thought appropriate to celebrate 10 years of success by DOPAG FAR EAST.

The very first Asia Distributor Meeting was planned to coincide with the anniversary celebrations that took place in Kuala Lumpur at the Royal Bintang Hotel, where a total of ten distributor delegates attended, from Japan, Korea, Taiwan and China.

The meeting was chaired by DOPAG FAR EAST Managing Director, Mel Taib, supported by DOPAG Managing Director Gerhard Witzig, along with Alois Tschopp and Heinz Gaisser also from DOPAG Switzerland.

Guests included Mr. Martin Howell-Jones and Mr. Richard Chanwai from SAC, who kindly presented their range of laminating adhesives.

Following the distributor meeting, distributors and their families spent an enjoyable few days as guests of DOPAG in the resort of Cherating on the east coast of Malaysia. The next Asia distributor meeting will be held in Osaka, Japan in 2008.

New premises for Turkey distributor

Located in the city of Istanbul, GÜNMAK has been a distributor for the Hilger u. Kern / Dopag Group in Turkey for 9 years.

Due to the company's continued expansion into the Turkish market, a move to larger premises in Istanbul's university district of Maltepe has recently become necessary, where GÜNMAK can continue to supply customers with technically progressive and innovative solutions to their fluids handling problems.

GÜNMAK provides sales, technical service, design, training and consultancy services, with a highly qualified team whose aim is to contribute to the development of the Turkish production industry through the provision of professional solutions, delivered reliably and on time.

We wish GÜNMAK continued success in their new location.

Editor

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Marketing Communication

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