



Exact!

Hilger u. Kern / Dopag Group

Application stories

Issue No. 8



Metering millions



Wymark Ltd. of Cheltenham in Gloucestershire has been using two DOPAG gear type flowmeter metering systems to accurately fill grease into "Greasomatic" lubricators for around 16 years. The lubricators are designed to automatically inject grease into machine bearings for preselected periods of up to 12 months.

Purchased in 1990, the systems have been in constant production, indeed, Production Director Simon Stone estimates that during that time they have filled many millions of "Greasomatics" with the systems.

Each of the two metering systems are fed from separate DOPAG drum pumps, which are housed in an adjacent pump room. The lubricators are placed in a spinning fixture during the metering cycle thus spreading the grease evenly by means of centrifugal force and avoiding air entrapment.

Commented Simon Stone, "The DOPAG systems have given us exceptional service over the years and continue to be an important part of our production facility."

Have you been using a DOPAG system for longer than Wymark? If so, we'd like to hear from you. email: bjones@dopag.com

New patented mixer element monitoring system

Metering and Mixing Systems are often fitted with a static-dynamic mixer when processing materials that have certain exceptional features, such as extreme metering ratios, large differences in viscosity between the components or greater than normal mixing requirements.

Until now, it has not been possible to reliably monitor the rotation of the mixer element, in order to confirm that it is rotating at the correct speed or even to establish if it has failed completely, which might be the case should the mixed material remain in the mixer beyond its pot life. Should production continue after the mixer has ceased to function, the resulting components would become expensive rejects.

Now a solution is available to this potential problem in the form of a mixer element monitoring system which ensures that any failure of the mixing system will automatically be instantly detected, allowing the system to

be shut down immediately, minimising the possibility of scrap components being produced.

The patented system observes the rotation of the mixer element in the mixing tube by impulse measurement. If this impulse is missing, it is generally a sign that the mixing element has sheared.

Failure of rotation of the mixing elements normally results in complete shearing of the elements, in which case, the electronic circuit will report an alert. Additionally, the system can also be used for speed monitoring.



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A riveting experience

DOPAG France supplies paint metering systems for Airbus



Airbus is now the world's leading aircraft manufacturer, consistently capturing around half of all orders for airliners that have more than 100 seats.

The Airbus product line comprises 14 models, from the 100 seat A318 jetliner to the 555 seat A380, which will be the largest civil airliner ever built when it enters service this year.

Safety is of course mandatory, and built quality is an integral part of this. During final assembly at the Airbus factory in Toulouse, France, technicians must apply paint to

previously unpainted rivets and bolt heads to ensure the guaranteed quality of the aircraft.

This task is made more difficult because several paint colours are involved in this process and all are two component paints.

The answer has been to supply each technician with a pack containing two miniature syringes and a small vessel for mixing purposes. Each syringe is filled with one of the paint components in the correct colour, and at the correct proportions, both of which are then emptied by the technician into the vessel at the workstation and applied with a

small brush.

To solve the problem of accurately filling the syringes, Airbus turned to DOPAG, who supplied five twin flowmeter metering systems, equipped with MR10 controllers, which fill each pair of syringes at once.

The filling systems have been designed to be particularly easy to use by handicapped people, who Airbus employ for this process.

The result has been a perfect solution to a small but challenging problem, solved by DOPAG metering technology.



Metering and filling twin syringes simultaneously



Technician's pack with syringes and brush



Painting a rivet



The key to success



Computer controlled production of "Smart Key" locking systems



Founded in the middle of the 19th century by a local locksmith producing locks for cash registers and safes, Kaba is one of the leading providers of access control equipment, door and locking systems and bank security systems in Europe.

In one of the world's most up-to-date production facilities for locking systems, computer controlled, interlinked production processes create products that are revolutionising locking technology.

Such a product is the Kaba eologic electronic locking system that owes its high level of protection against copying to the integration and combination of both the precision milling of the key and the inclusion of a chip in the key.

The coding in the chip makes the key unique,

which renders illegal copying impossible, whilst lost or misplaced keys can be invalidated immediately without fuss or cost. In such cases, there is even no need to replace the barrel of the lock.

Until recently Kaba has been manufacturing the keys using a semi-automatic production system, but demand for increased levels of productivity as well as the need for a solution to reduce costs within the total manufacturing process resulted in the decision to fully automate production.

Kaba engineers were confronted with the difficult task of developing a system that catered for chips of different sizes and colours as well as one that not only kept production change times to a minimum, but was also capable of running constantly for 6 hour periods, automatically.

The system they devised included a DOPAG ELDO-MIX 101 gear pump driven metering and mixing system, fully integrated within the new automated production process.

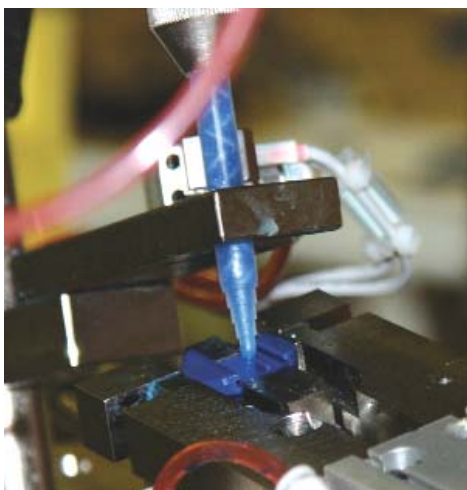
A photo system recognises the form and position of parts to be processed, forwarding the data to the master computer.

A robot then places the selected key into a fixture, ready for attachment of a chip.

The chips are fastened to the key clips by means of a two component adhesive, which is proportioned and mixed by the ELDO-MIX 101 system, before being dispensed automatically in shots of 0.1 grams onto the keys.

The robot then inserts the appropriate chip into the key in the correct position according to information from the master computer before the assembled key is subjected to testing and programming with customised data, making each one a unique item.

The results of this system has been a reduction in costs and an increase in production capability, making it truly the key to success, helped by DOPAG and the ELDO-MIX 101.



Dispensing adhesive onto a key



DOPAG ELDO-MIX 101



Walking on air

Multi component metering system helps to ease foot discomfort

It has been some considerable time since health and safety regulations first dictated that safety shoes must be worn in appropriate areas in many industries, such as construction and manufacturing.

Whereas safety shoes conform to rigid safety standards and fulfil their designated function as protection for the wearer, they have not always proved to be so popular with wearers.

This may be because many safety shoe manufacturers have not always taken the comfort of the wearer sufficiently into account. In fact, many products have proved to be uncomfortable when worn continuously on hard surfaces or when standing for long periods.

Such situations, far from promoting the safety of the wearer can eventually lead to achilles tendonitis, heel spur pain and even intervertebral disc problems.

However, help is now at hand in the form of purpose made shoe inserts, made with the help of a DOPAG ELDO-MIX 603 metering and mixing system.

The inserts are produced from a form of polyurethane gel which moulds itself to the individual shape of a foot, guaranteeing optimum pressure distribution and shock absorption, resulting in comfort for the wearer and relief from the more painful long term problems associated with badly fitting footwear.



Producing the inserts is a complex, fully automated process involving the integration of a three component, plus two colour DOPAG ELDO-MIX 603 metering and mixing system with a six axis robot.

The ELDO-MIX 603 is a gear type metering and mixing system, generally used to apply multi component media such as epoxy resins, polyurethanes or silicones, and is capable of processing materials with either high or low viscosity.

For this application, the system is used to meter a three component polyurethane gel, consisting of an A component, a B component and a catalyst.

Additionally, a choice of two different colour pigments are available for metering into the mixture, depending upon whether the insert has a requirement to be coloured or not.

The entire metering unit is mounted directly onto the robot head, minimising the distance between the metering system and the mixer.

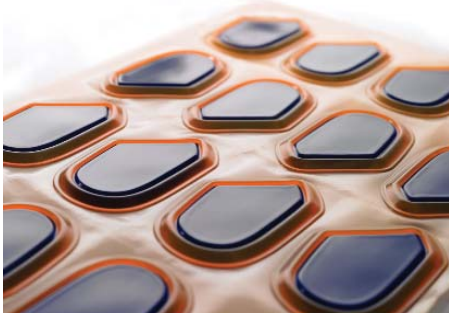
The moulds are located on a rotary indexing table and are automatically presented

beneath the robot head to allow the dispensing operation to take place.

The robot controls the complete automation process and identifies each separate mould before it is indexed into the dispensing station, activating the required metering programme as well as the addition of pigment if needed.

When the requirement for a colour change is detected by the robot, the system automatically commences a flushing cycle, discharging the unwanted colour material into a waste container and recharging with the new colour ready for the mould to be presented to the dispensing station, without interruption to the dispensing process.

The result is a technically innovative production process that efficiently produces stable, long-life shoe inserts, aimed at the comfort and well-being of all wearers of industrial safety shoes.





A model customer



Moulding precision miniature parts for models



Hawker Typhoon 1:32 scale model

What do agricultural vehicles, World War II aeroplanes and mythical beasts all have in common? The answer is that they are all part of the worldwide phenomenon of scale modelling that has long since progressed from the time when cheap plastic kits were once just the domain of small boys.

Now serious modellers from around the globe strive to produce scale models of infinite accuracy and detail, continuously looking to upgrade their models with the very latest features as they become available.

One such company who specialise in producing quality aftermarket products and accessories in order to satisfy the demand from advanced modellers is Model Design Construction, (MDC) based in the town of Ripley in Derbyshire.

Founded in 1996, the company originally produced items in 1:48 scale, but have recently extended the range to include 1:32 and 1:24 scale items.

The first item that made the MDC name was a scale model of the Fairy Swordfish aircraft, comprising of over 400 separate components, which set new standards for research, detail, precision, materials and casting quality in the resin market.

Rising out of this success, MDC progressed to developing a sub-contract casting service, which has allowed the company to extend the potential of resins as a material for modellers and to explore new materials and systems and their uses for the modeller.

In response to demand for a better material for tyres for all types of model vehicles, including agricultural vehicles and aircraft, MDC experimented with two component polyurethanes, eventually finding the perfect solution

Demoulded polyurethane aircraft and tractor tyres

Casting two component polyurethane into moulds

that exhibited the characteristics of precision, quality and realism.

MDC chose to use the DOPAG ELDO-MIX 001 gear pump driven metering and mixing system to proportion the polyurethane and dispense it into the moulds using a twin snuffer valve with disposable static mixer.

The ELDO-MIX 001 is the ideal solution for the type of small volume metering, mixing and dispensing application found in this industry, providing an economical, accurate and easily controlled answer to the processing of low viscosity two component media that requires low but precise flow rates.

Mixed material output rates are variable and can be simply controlled to suit each particular moulding application, up to a maximum of 0.5 litres per minute.

All things considered, a "model" application for the ELDO-MIX 001.





New premises for distributor in Brazil



Managing Director
Mr. Bruno Sordi

Located in the city of Porto Alegre in the southern part of Brazil, close to the borders with Uruguay and Argentina, B. Sordi has been a distributor for the Hilger u. Kern / Dopag Group in both Brazil and Argentina for 5 years.

Now, Managing Director Bruno Sordi has announced that the company is to expand and move into larger purpose built premises in Porto Alegre.

We wish Bruno and his staff all our good wishes for continued success in the future.



United States distributor expands

A hearty welcome to Stephen Kirkpatrick who has joined the staff of Kirkco Corporation, our distributor in North Carolina.

Stephen holds an Associates Degree in Applied Science in Electronic Engineering. His background working with executive management to develop national service programmes brings to Kirkco strong sales and project coordination skills. He will be working with both sales and customer service.



Stephen Kirkpatrick

In his free time he is often found on the links, chasing a golf ball.



Henkel "In-House Trade Fair" success

The Hilger u. Kern / Dopag Group was recently invited to make a presentation to a gathering of around 40 Henkel personnel, at a recent "In-House Trade Fair."

Held at Henkel's Technical Service Centre on 29th March 2006 in Düsseldorf, Germany, DOPAG's contribution, which concentrated on laminating systems, was deemed to have made a significant contribution to the success of the event.



Commitment to composites

Held annually in April, at Paris Expo, the JEC Composites Show is the largest composites show in the world, with around 900 exhibitors. Once again the Hilger u. Kern / Dopag Group demonstrated its commitment to this growing market sector with a large presence, which included many examples of composite leisure products produced with DOPAG equipment, ranging from skis and hockey sticks to bicycle frames.



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