Issue No. 6

Exact!

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New distributor for Mexico

Staff at Alpha-Tex take time out for a photo call

Managing Director German Schumacher

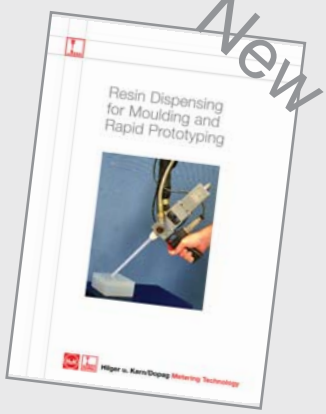
DOPAG has recently expanded it's worldwide network of distributors with the appointment of an exclusive distributor in Mexico.

Headed by Managing Director German Schumacher and located conveniently in Mexico City, Alpha-Tex de Mexico will be responsible for the sale and servicing of all DOPAG products in the Central American country.

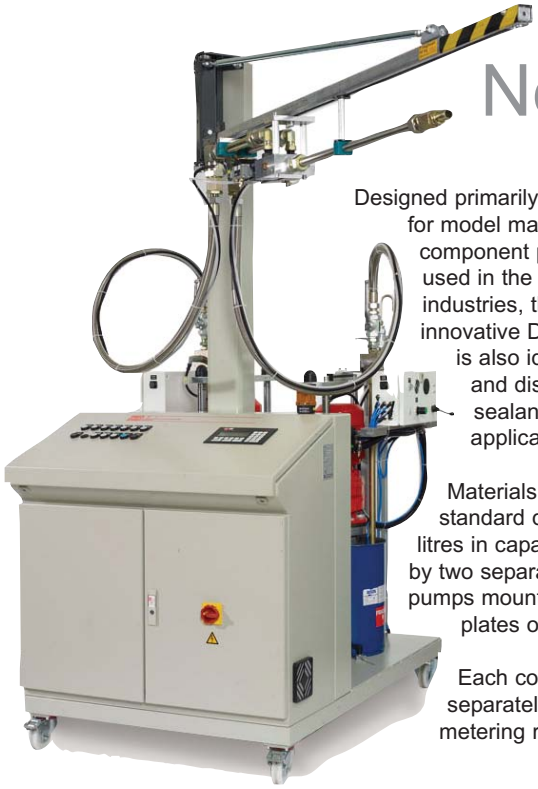
We wish Mr. Schumacher and his staff a long and successful association with the Hilger and Kern / Dopag group.

Brochure for RIM market

Now available from DOPAG is a new brochure that illustrates the equipment suitable for both RIM moulding and mould construction in the rapid prototyping industry, featuring both gear pump and piston pump driven machines.



New TOOLING-MIX P80



Designed primarily as an economical solution for model making with high viscosity two component polyurethanes and epoxies used in the automotive and aeronautical industries, the newly launched and innovative DOPAG TOOLING-MIX P80 is also ideal for proportioning, mixing and dispensing many high viscosity sealants and adhesives in other applications and industries.

Materials are processed directly from standard drums of between 20 and 80 litres in capacity where they are metered by two separately driven specialised gear pumps mounted directly onto the follower plates of the drum rams.

Each component is fed and metered separately at the pre-selected metering ratio, which is variable within the range of 1:1 and 10:1 by volume.

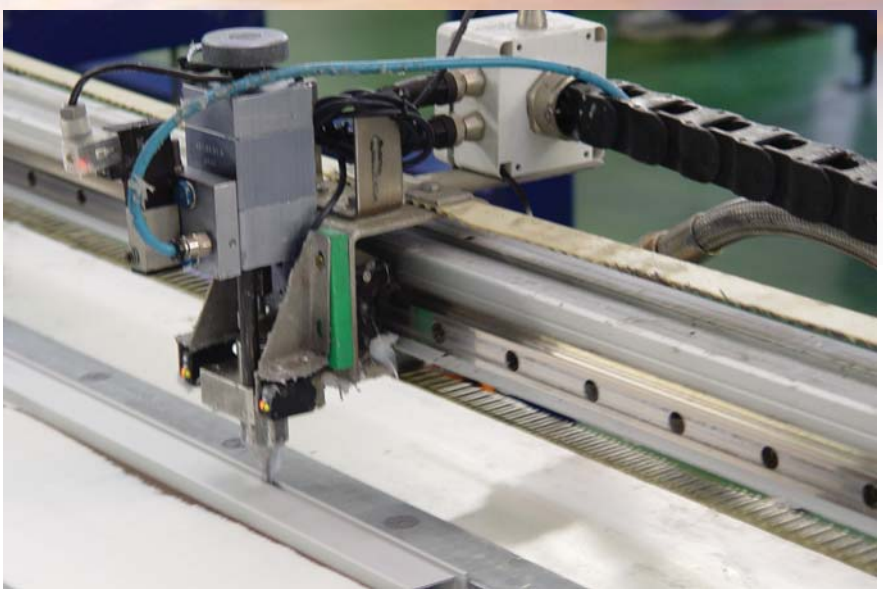
The metering ratio can be simply adjusted electronically by means of the MR20 controller, as can the output flow rate, which is capable of adjustment between 0.7 litres per minute and 8 litres per minute, depending on the mixing ratio that has been selected.

The entire machine has been designed to be relatively light in weight and compact, making it easily transportable.

A larger version of the TOOLING -MIX P80 is also available for applications that require materials to be supplied in 200 litre capacity drums, which is called the TOOLING-MIX P200.

Under African skies

Solar panel manufacturer turns to automated dispensing



Automatically applying the silicone

As technology evolves and the use of photovoltaic generators becomes more widespread, the benefits of electricity are becoming increasingly available in even the remotest corners of Africa.

Photovoltaic energy results from the direct transformation of sunlight into electrical energy through cells made of silicium, which are interconnected to make up a module or solar panel.

Array of solar panels

Tenesa Manufacturing (Pty) Ltd, based in the beautiful city of Cape Town, is part of Total Energie Southern Africa, which in turn is part of the giant French group Total.

Set up in 1983, the initial focus was to develop solar pumping equipment to provide drinking water for isolated villages in Africa.

Now, solar modules are increasingly in use in rural electrification and telecommunication projects as well as water pumping.

Each module or solar panel is sealed during manufacture with a single component silicone, which is dispensed into the aluminium framework. Until recently this process has been applied using 310 ml size cartridges.

However, applying sealant by hand can sometimes lead to quality issues as the flow rate of the sealant is difficult to control precisely when using a manually operated cartridge gun.

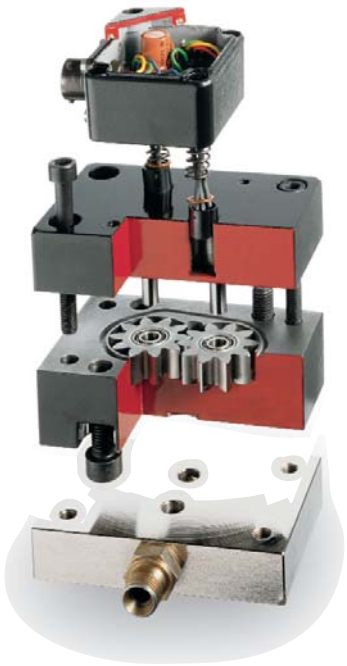
In order to overcome such potential problems, Tenesa chose to automate the process, selecting a DOPAG system supplied by Resin Processing Solutions cc.

The new system allows Tenesa to purchase silicone in 200 litre size drums, which not only affords the maximum period between drum changes, thus causing minimal disturbance to production, but also generates considerable cost savings on the purchase price of the silicone.

A DOPAG P200 drum pump is used to unload the drums and feed the silicone to the dispensing valve via a high precision gear pump. A gear pump is used in order to accurately meter the flow of silicone to the dispensing valve to exactly correspond to the linear speed of a single axis robot that carries the dispensing valve during the automatic dispensing cycle.

A DOPAG gear type flowmeter constantly monitors the flow rate generated by the gear pump and adjusts the speed of the gear pump via an MR20 controller, should a discrepancy occur, in order to guarantee perfect quality every time.

The new system has also resulted in the elimination of the cleaning operation previously undertaken following assembly of the frames, as well as a further cost saving in material due to the precision control of the dispensing.



DOPAG gear type flowmeter

Lightning strikes

DOPAG VOLU-MIX contributes to Airbus safety whilst saving money

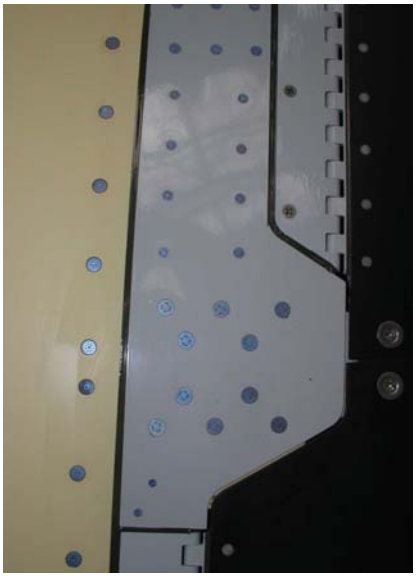
It is estimated that on average, each commercial aeroplane is struck by lightning slightly more than once per year. In fact, aircraft often trigger lightning when flying through a heavily charged cloud.

A somewhat scary thought maybe, especially for frequent flyers, but it's comforting to know that the last confirmed civilian 'plane crash that was directly attributed to lightning was back in 1967, when lightning caused a catastrophic fuel tank explosion.

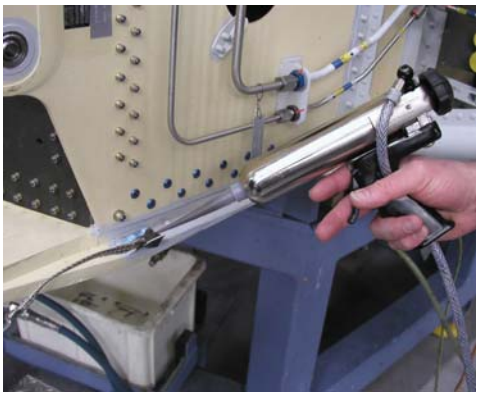
Since then, much has been learned about how lightning can affect aeroplanes, resulting in the development of lightning protection techniques being engineered into the aircraft.

Most aircraft skins are made from aluminium, which is an excellent conductor of electricity, although some more modern aircraft use advanced composite materials which are inherently less conductive than aluminium. In these cases, conductive fibres are embedded into the aircraft's skin to carry the lightning currents.

Sealed panels



Although passengers and crew may see a flash and hear a loud noise, no serious damage should take place. Initially, the lightning will attach itself to an extremity, such as the nose or a wing tip and as the aircraft flies through the lightning flash, it reattaches itself to the fuselage, travelling through the conductive exterior skin and structures of the aircraft, before exiting off another extremity, such as the tail.



Applying mixed sealant from a cartridge gun

However, for this protective, conductive process to function efficiently, it is essential that the mechanical parts of the aircraft are carefully protected from the ingress of humidity or water.

This is achieved during construction by the application of modern polymer sealant systems to the joints of all the affected areas.

At the Airbus facility at Stade in Germany, vertical stabilisers are built for the family of Airbus aircraft, including the latest addition; the massive Airbus 380. Here, two component polysulphide based sealants are used to seal the joints of the internal structure and the vertical stabiliser as well as the lightning protection rails.

Previously, expensive pre-packaged cartridges that mixed the two components during application had been used to supply the sealant to the application nozzle.

Now though, this system has been replaced by a DOPAG VOLU-MIX metering and mixing system, which uses precision flow meters to proportion, mix and dispense the sealant into empty cartridges, in the exact volumes required for each application and only on demand, eliminating material wastage.

The system operates on the principle of volumetric displacement, utilising intermeshing gear wheels, the rotational speed of which are measured by non-contact sensors, leading to great accuracy.

Both components are fed to the VOLU-MIX system by standard DOPAG drum pumps, allowing additional cost savings to be enjoyed by purchasing the materials in 30 litre size drums.

Indeed, the combination of savings produced by eliminating waste mixed material and the advantage of purchasing the material in bulk, amounts to cost reductions in the region of 70% compared to the previous system, which is good news for Airbus Assembly Manager Nils Kunze in his quest to improve efficiency whilst optimising his budget without compromising on safety.

DOPAG VOLU-MIX metering and mixing system

Giving waste the slip

SCHLEIFRING

Slip ring manufacturer casts resins with DOPAG VARIO-MIX

When you were a child, did you ever wonder why all the dazzlingly coloured lights stayed alight on the fun fair carousel, even though you were travelling round and round?

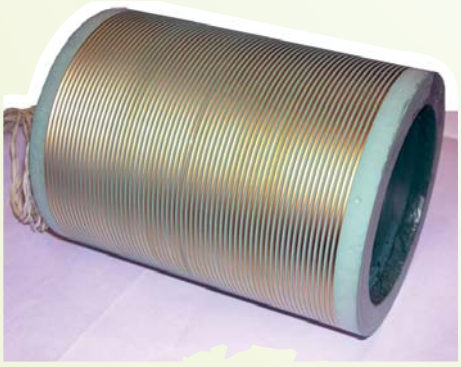
Well, even though you may not have understood at the time, it was all thanks to the use of slip rings.

A slip ring is an indispensable device, which allows electrical power to be transferred from a rotating to a stationary plane, without which many taken-for-granted products such as wind power generators, medical scanners as well as fairground carousels simply would not exist.

You will also find slip ring systems designed and produced by Schleifring in radar and defence applications, such as the British battle tank Challenger II, as well as numerous other applications.

Founded in 1974,Schleifring und Apparatebau GmbH is a developer, manufacturer and supplier of technologically advanced contacting slip ring systems and non-contacting high data rate rotary joints.

Creativity and innovation are key to their business philosophy, boasting more than 50 patents granted for their products.



Large cylindrical slip ring

Scheifring Systems Ltd are a sister company who have been located in the Berkshire town of Newbury in the UK for over 20 years.

These days, slip ring manufacturing is a high precision process that not only caters for electrical power transfer, but also for microwave and fibre optic signals, especially where extremely high data rates are transmitted or where a rotating interface is required within an explosive atmosphere.

Schleifring cast the cylindrical cores for the slip rings into moulds prior to precision machining, using a two component epoxy resin supplied by material manufacturer Huntsman.

DOPAG VARIO-MIX

Until recently, the process of proportioning, mixing and applying the resin had been carefully undertaken by hand. This method of processing two component materials can often be a time consuming business that is also wasteful of material as more material is frequently hand mixed than is required for each particular application.

Additionally, keeping the work area clean when mixing and applying two component resins by hand can often be difficult to achieve.

However, Schleifring have now installed a new DOPAG VARIO-MIX machine, to replace the current manual procedure.

The VARIO-MIX features positive displacement variable ratio piston pump technology, to accurately meter the resin at the correct ratio, after which it is homogenously mixed by a disposable static mixer prior to dispensing.

The possibility of inaccurate metering has become a thing of the past as the resin is precisely proportioned by the VARIO-MIX.

Additionally, material is mixed and dispensed only on demand, which eliminates the prospect of wasted material, which in turn leads to material savings and a cleaner work area.

Dispensing the resin into moulds

From Myanmar to Monaco

Plain sailing with BOOSTER-MIX

Moody Deck Ltd is a division of Moody Group, one of the oldest and largest marine leisure companies in the U.K.

Since 1826, this family run business has been building boats without interruption on the same site at Swanwick in Southampton.

Moodys have been laying traditional timber decks for many decades, but it was not until the early 1990's that they perfected the concept of "off-boat" deck production.

As the name implies, complete timber decks are produced under controlled conditions in the workshop before fitting to the boat takes place. This has obvious advantages in terms of quality and durability, both of which assume great importance under the demanding conditions encountered when sailing the world's oceans.

Moody's decks are constructed from only the finest quality teak which is indigenous to the natural forests of Myanmar (as Burma is now called.) The forests are strictly managed to ensure a long term supply of the best quality teak in the world.

The final sanding operation

Construction of a Moody off-boat deck is a precision process, carried out by a mixture of the latest high-tech machinery and highly skilled craftsmen. For standard production boats, the teak strips are produced by CNC machine following design by CAD and assembled into jigs that position the strips exactly, ensuring that the correct gaps are maintained, which will eventually be filled with caulking compound.

However, the teak strips are placed face downwards into the jig, which allows the craftsman to fix a special tape over the gaps between the strips on what will be the underside of the deck. This is designed to prevent any caulking compound from leaking onto the underside of the deck.

A fitted Moody teak deck

Glass cloth impregnated with epoxy resin is then laid onto the underside of the fully assembled deck and allowed to cure in order to secure the structure of the finished deck before it is removed from the jig.

Once the backing cloth has cured, the deck can be inverted in readiness for the application of the caulking compound.

This is a manual operation carefully carried out by a skilled craftsman using a hand held DOPAG dispensing valve.

Moodys have for some time used Sikaflex-290 DC compound supplied by Sika Industrial in 23 litre size hobbocks. This moisture curing polyurethane compound is designed to absorb the lateral movements of the teak strips as they expand and contract with changes in the weather, the environment, or variations in the humidity content of the teak and has served them well in these respects.

Dispensing the "boosted" caulking compound

However, final curing of the caulking compound can take several days after dispensing has taken place, before the deck is ready for the sanding process.

Needless to say, this aspect can lead to extended delivery times as well as unwanted storage issues.

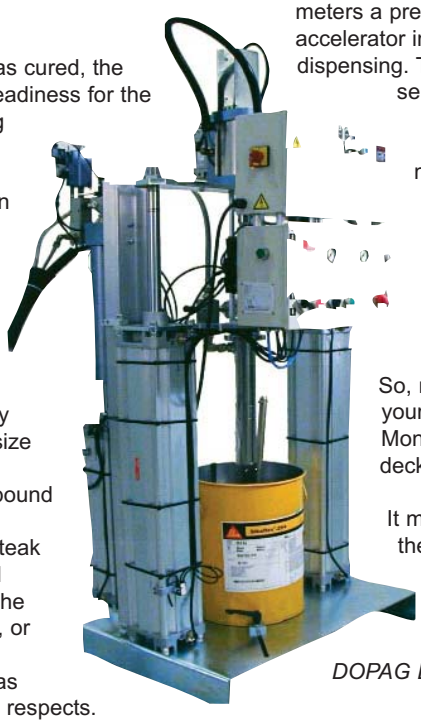
The answer to this problem was solved by the introduction of an accelerator, or "booster", into the compound at the point of application, to speed up the polymerisation process and drastically reduce the curing time from 3-4 days to less than 24 hours.

This was achieved by switching from a standard drum pump to a DOPAG BOOSTER-MIX, which automatically meters a precise 2% addition of accelerator into the polyurethane during dispensing. The two components remain separate until they reach the dispensing valve, where they are mixed using a static mixer.

The result is a deck that bears all the hallmarks of a top quality Moody deck, but can be produced a good deal quicker.

So, next time you are lazing on your yacht in the marina in Monaco, take a closer look at the deck.

It may just have been made with the help of DOPAG.



DOPAG BOOSTER-MIX

DOPAG expands headquarters in Switzerland

As part of DOPAG's ongoing development plans, additional workspace has been acquired at the Company headquarters in Cham in Switzerland.

The extra space totals around 700 square metres, of which around half has been allocated to a new showroom, commissioning and service area (see left), with the remaining floor space occupied by new offices.

Explained DOPAG Managing Director Gerhard Witzig, "The opportunity to make use of additional workspace adjacent to our existing facility was too good for us to miss and fitted well with our long term plans. We believe that this investment will enhance our ongoing commitment to all our customers."

It's a gas!

DOPAG FAR EAST has announced that it has won orders worth over 2 Million Euros for adhesive dispensing equipment used in the construction of Liquid Natural Gas (LNG) tankers in Japan and South Korea.

Commented Mel Taib, General Manager of DOPAG FAR EAST, "DOPAG retains a strong presence in the shipbuilding industry in Japan and South Korea, where we are well supported by our local distributors, Taiyo Techno in Japan and Song Won Trading in South Korea."

The systems will be installed at the KOYO Dockyard in Japan and at HYUNDAI in South Korea.

More details of the installations will follow in forthcoming issues.

SBI Exhibition

Every 4 years the world's leading trade fair for cutting and welding takes place in Essen, Germany.

This year, the exhibition took place in September and for the first time it incorporated the Structural Bonding International (SBI) exhibition, whose theme was adhesive jointing, attracting the leading material manufacturers and application equipment providers.

Under the umbrella of the Fraunhofer Institute for applied material research, technical seminars concentrated on topics such as metering and mixing equipment as well as structural bonding adhesives, helping to make this international exhibition of significant interest to participants and visitors alike.

Fastening News Live! update

The *Fastening News Live!* roadshows are a series of regionalised exhibitions concentrating solely on the fastening market, which of course includes adhesive dispensing. In September it was the turn of Southampton on the South Coast of England and DOPAG (UK) Ltd were present to discuss applications with new customers and material manufacturers alike. In the next few months the roadshow will be seen in both Manchester and The Midlands

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