

In the

Q4 2012

Mix



2KM - Your Polymer Processing Partner

Generating success....

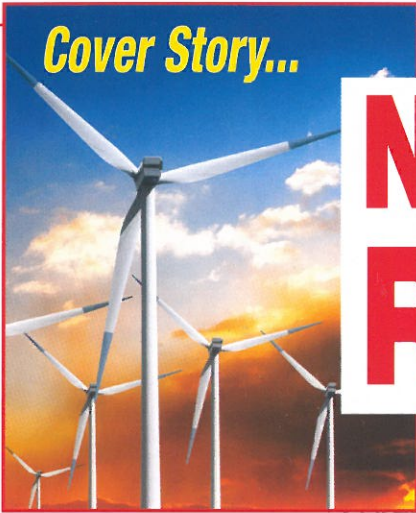
2KM develops new systems for
Resin Infusion to aid the wind
blade manufacturing industry

Made in Britain

We create a new
UK assembly line
where Process Gear
Mix systems are
manufactured

EXPERIENCE • EVOLUTION • EXPERTISE

Cover Story...



New Systems for Resin Infusion

2KM continues to evolve and develop the equipment supplied to the wind blade manufacturing industry

The first half of 2012 has seen another 25 systems manufactured for some of the industry's largest suppliers of wind turbines. Systems supplied include the **PolyMix 2000** for the application adhesives, **PolyMix 400** to apply fairing compounds for surface finishing and the **ResinMix** for infusion of the shells or structure.

2KM has evolved the **ResinMix** machine range to suit the infusion process used in the manufacture of composite wind turbine blades. The new version of the successful system incorporates many new and innovative features aimed at the direct infusion process.

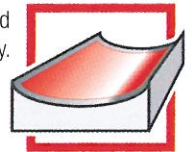
The company was approached by a major manufacturer to look at how the epoxy resins used can be conditioned and applied to reduce preparation time and wastage through the use of the traditional "infusion vessel". The customer's requirements were for in line degassing coupled with a system to have outputs controllable from 1 to 60 litres per minute.

The standard **ResinMix** layout utilises inverter controlled, geared AC motors coupled to the metering pumps. Even with cooling fans this traditional layout runs the drive motors too hot at low speeds to give an effective solution. **2KM** redesigned the metering system using high precision axial piston pumps directly driven by servo motors. This combination enables the flow rates and ratio to be tightly controlled and speed range lengthened. The new format gives the required torque throughout the output range and ensures the correct ratio between the required flow rates.

The next issue to be addressed was the degassing of the high viscosity resin. Traditional processes included large storage vessels and batch degassing. Both processes incorporated a pre-preparation time prior to the application. This was manageable with smaller items but with some structures involving over 3000 litres of resin - not a practicable solution.

The **2KM** solution was to develop and evolve the **VacFlo** in line degassing system with a flow through heater. This system takes the resin directly from the IBC or drum and displaces it into a degassing process. This heats the material, to drop the viscosity, and then breaks the stream into small droplets in an evacuated chamber. This removes the air from the material and the degassed material is then transferred using a positive displacement pump to the metering system.

This recent evolution of the **ResinMix** range is drawn from our experience of over 37 years in the Reactive Polymer Processing market. **2KM** can design, develop and produce systems to meet the commercial and technical requirements of the Wind Blade Manufacturing industry.



Servo Driven Metering pump with Flowmeter for feedback.



2KM Evolves the Process



2KM has long been seen as one of the leading suppliers of metering systems for the processing of Liquid Silicone Rubbers (LSR) directly from the supplied container.

The first **SilcoStar** machines were produced by **2KM** in 1975 and we have continued to develop the machines to suit the markets and the end users requirements.

As part of this process, our customers fed back that due to material filling variation and base purging of the miser head, the material containers did not empty together, causing stoppage to the system in order to change each material component. **2KM** answered these concerns in the latest evolution - the **SilcoStar 923**. This unit retains the innovative hydraulic drive and linked metering cylinders of the previous models, but incorporates innovative variable volume metering pumps, coupled with constant drum volumetric monitoring.

The controller constantly measures the amount of material dispensed from the containers, then adjusts the volume of the pump to ensure that at the end of the barrel or pail 98% of the contents have been metered out. The volume of each metering pump can be adjusted by up to 3% with either the A or B component pump un-affecting the mix ratio and material properties, but saving the end user money.

The **SilcoStar 923** is part of the silicone metering family, covering hydraulic and servo electric driven systems - each designed and tailored for specific areas of application.



SilcoStar 923



“MADE IN BRITAIN”



2KM UK's move to the Buntsford Park Road site sees the company start to manufacture a small part of the dispensing range here in the United Kingdom.

The larger premises has enabled **2KM** to create a new assembly line where the company's **Process Gear Mix** systems can be manufactured. The initial build is for the entry level 101 / 102 systems, but this move enabled us to supply the systems on a fast

delivery time and also evolve the units to meet the end users requirements.

The machines are still designed at our HQ in Marriehide Germany, but now the machines have UK sourced components, coupled with the precision gear pumps, to enable the components to be held in stock and assembled by the workshop team.

2KM has also taken on a design function, as well as project managers to ensure the quality remains and the service improves.

Your Polymer Processing Partner

NEW UK EXPANSION

“We have Moved”

2KM (UK) Limited has recently acquired new premises in Bromsgrove, Worcestershire.

Located in a prominent position on the outskirts of Bromsgrove, close to the A38 and within two miles of junctions 4 and 5 of the M5 motorway and junction 1 of the M42 motorway -

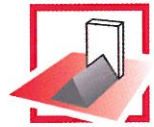


the 8,832 sq ft (820 sq m) industrial unit at No.1 Buntsford Park Road, serves as the Company's new head office and manufacturing site.

2KM (UK) Limited has been operating in Bromsgrove since 1976. This move to a larger, more prominent premises marks new investment and expansion for the company.



The Smart Option



US Government Prime Contractors are looking to package the SmartDispenser® as a remote repair fibre-optic re-termination kit for use by bases, depots and aircraft carriers around the world.

The kit has to be portable (i.e. can't require compressed air), and most importantly, the re-termination of a fibre-optic cable in aircraft and submarines has to be done with extreme precision and repeatability; from country to country, base to base, ship to ship, plane to plane.

What makes it so smart?

Control and monitoring of a consistent repeatable assembly fluid deposit worldwide, resulting in increased bottom line profits through higher productivity, fewer rejects, less fluid waste and lower production costs.



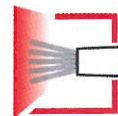
Bonding



Coating



Composite



Spraying



Moulding