

John Whitehead discovers the key role that a centralised materials handling system is playing in one leading automotive moulder's drive to enhance its efficiency in PRW's latest look at this sector

Motan helps Shimizu to make space for extra efficiency

Automotive component moulder Shimizu UK has installed a centralised materials handling system from Motan at its Welshpool plant and upgraded the existing system at its Telford facility in what Executive director Trevor Gaughan sees as a key element in an unending efficiency drive.

The requirements for the installation were demanding with no fewer than 27 different materials to be available to a line-up of 21 machines from the centralised area where the polymer, primarily PP and glass filled nylon, is held.

Both plants have the material handling area, manifold and dryers within the moulding area, sited along the wall in a compact space and the effect on the working environment around the machines has been striking, says Gaughan.

"The amount of space that we created was unbelievable," he told PRW during a visit to both facilities run by the Japanese-owned moulder in the UK. "Now, it's clean and tidy, there are no more wheelie bins, no more resin on the floor, no more moving octabins around the machine."

A new MetroNET PLC control system monitors and runs the Motan system, hopper fitted sensors feeding information on a first come first served basis to ensure that each machine is supplied with polymer as required. The Motan control is also networked using standard Ethernet technology to PCs on the shop floor.

Material changes are achieved simply by changing the material selection for any machine at the coupling station (manifold).

Glass bends and stainless steel pipe are employed throughout to counter the abrasive nature of the glass filled nylon and this approach is also employed for all the tubes in the manifolds themselves, providing durability and easy visibility of the material flow. The hopper loaders are fitted with Motan "Marathon" inlet flaps which also protect the hopper loaders and inlets from abrasion.

The sophistication and scale of the Shimizu system is confirmed by Andrew Gibbens, appointed last year as MD of Motan's subsidiary company in the UK. The system includes over 2 kilometres of pipe with a maximum conveying distance of over 200m.

He also highlights the cultural differences between traditional Japanese moulding lay-outs and the European model with the former often preferring a cell approach with each element such as octabins and drying at each machine, minimising the risk of wider fall-out in case of breakdown. Whilst this approach is often taken

with a small number of machines, for Shimizu Welshpool this meant that there were around 25 driers on the shop floor with an octabin for each drier, which took-up a huge amount of under crane factory floor space. A further saving was made in energy saving - all of the conveying is achieved using only two duty 11kW vacuum pumps. Previously every machine was equipped with single phase loaders, with a central vacuum pump employed only for conveying PP from the outdoor silo.

Gaughan, who first encountered Motan in the early days of a career which has also included a spell at Toshiba as a service engineer, is in no doubt of the benefits of a centralised feed system. "We have not had a single instance of the wrong material being sent to the wrong machine," he says.

The space freed-up is partly used in support of the company's approach of holding many of the large tools that it uses adjacent to its machines for simple access when required.

The company's team have learned the benefits of efficiency the hard way as ownership and product



System must handle 27 materials



Complex assemblies with inserts are the norm

changes jeopardised their futures in the past. Today, Gaughan and Dean Thomas, executive director, run a business totally committed to using investment in the latest technology to achieve a lean manufacturing ethos. Automation is playing a

central role in this drive with a new robotised cell for assembling fan shroud assemblies including insertion of metallic inserts just installed, drawing on input from Hi-Tech Automation, working with Fanuc six axis robots, as well as with ATM.

A production monitoring system from InTouch is a highly visible component of the two plants, with machine-by-machine display screens located at strategic points in each, several feet above the shop floor.

The investments of typically £2m a year are clearly proving successful as graphs at the plant demonstrate with sales rising towards the £30m mark and customer complaints moving in the opposite direction.

"We want to be the best and to be the last man standing if it's going to be a case of that," says Gaughan.



Company profile

Shimizu Industry UK was established in 2006 from the merger of Welshpool-based Traltec and TP Moulding of Telford, both moulding operations set up by earlier Japanese parents, including Epson with a strong business machine role which necessitated a change of focus as business moved east.

Automotive HVAC giant Denso took a majority stake in 2005 and forms the major customer for mouldings and assemblies from the plants which include radiator blowers, radiator tanks, HVAC door and levers. Key final customers include Toyota and other Japanese car makers as well as Denso Marston.

The business employs nearly 400 people and runs close to 40 machines from Negri Bossi, Demag, Engel and Battenfeld as well as twin shot electrics from Sumitomo. A range of quality standards including TS16949 have been achieved.

