

How Emhart collaborates with customers to improve BIS machines

UK-based Allied Glass is one of three plants that has adopted Bucher Emhart Glass' (BEG) servo-driven BIS forming technology. After two years of collaboration between BEG and its customers, BIS is set to complete the firm's portfolio of servo machines.

Bucher Emhart Glass (BEG) launched NIS, its first all-servo machine, in 1999. NIS is ideal for high-volume, high-speed production, but less suitable for smaller producers who need to manufacture in smaller volumes. So in 2010, BEG introduced BIS, which offers the same repeatable precision as NIS but can handle a wider variety of container designs, sizes and weights.

Soon after its launch, the first BIS machines arrived in working glass-container plants. The first went to Nampak in South Africa, the second to Noelle von Campe in Germany and the third to Allied Glass in the UK. Since then, BEG's engineers have worked with operators, other engineers and executives at the three plants to monitor performance, improve working processes and make BIS more stable and efficient. The four-way partnership has helped to improve BIS on a technical level, as well as capture a great deal of new learning on getting the most out of the technology.

Allied Glass' forming lines were 100% pneumatic before they got their BIS machine.

Richard Summers, Group Operations Director, said: "It was a big decision for us, switching to servo. We've never previously seen ourselves as an R&D front-runner; we've always played things safe. But we wanted more sustainability and repeatability, so we took the decision to innovate."



▼ The BIS machine was installed in three container glass plants.

▲ Richard Summers, Operations Director at Allied Glass

Best of both worlds

Glass-container manufacturers are notoriously conservative, often preferring to stick with proven approaches rather than take an adventurous route. It's a strategy that minimises risk, but can also mean missing out on the benefits of innovation. However, a partnership between an established technology provider and a forward-thinking manufacturer offers the best of both worlds: a shared goal to improve performance combined with solid technical expertise and commercial focus.

Jarmo Kammonen took over as BIS Product Manager at BEG in 2014, following the first three BIS installations. Since then, he has monitored the machines and overseen developments and improvements.

Mr Kammonen said: "We know, from introducing NIS, that it takes a while to discover things. In co-operation with Allied and the others, we exchanged experiences of how BIS performed, and what it was like to operate.

"After 18 months to a year, we started to see things that we wanted to improve."

BEG and its customers have grown far closer through the collaboration.

Mr Summers said: "BEG were open and honest from the start.

"They said, 'Look, we want to know if there are any issues with the machine. If things don't work, we'll be there to support you.'

"And even though we've had some problems, I think the relationship

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▲ The BIS can handle a wider variety of container designs, sizes and weights.

between BEG and Allied is stronger now than ever.”

Capturing best practices

With traditional IS machines, there is a huge body of operator ‘folk wisdom’, built up over decades and passed on from one generation to the next. But when a new technology appears, that knowledge base is not there. So, one of the first priorities for BEG and Allied was to capture the best practices to use BIS.

Mr Kammonen said: “We realized that we needed standard operating procedures.

“So, in January 2016, we worked with Allied to set up some additional training to get everyone confident, and compare how we at BEG felt it should be done and with what people were actually doing on the factory floor.”

All the knowledge was recorded in writing to make sure every operator took the same approach. It was compiled into what is known as the Cookbook.

“Then Allied developed the project further, and they now have a very nice training programme for their BIS operators.

“They’ve also shared it with us, for which we’re very grateful.”

New machine, new thinking

As the Cookbook explains, it is essential to understand the BIS control and information systems in order to prevent production problems and downtime. This required a different approach from operators.

Mr Kammonen said: “This is a new technology: all servo, and all digital too.

“The way line supervisors run and monitor the machine is different from a traditional IS machine.

“Instead of waiting for things to go wrong, you have the ability to spot problems before they happen – if you

know what to look for.”

Working with BIS has been a learning experience for everyone involved.

Mr Summers added: “Your mentality has to be different. We only put operators with several years’ experience on BIS. Even then, we had to go back to basics and do some retraining to build up their confidence.

“We were working through our own preconceptions as well as ironing out problems with the machine.

“Our learning grew as the machine developed.”

From reluctance to enthusiasm

Allied started out with 12 staff working on BIS, and now has 22 trained staff. Inevitably, not everyone warmed to the new technology right away.

Jamie Kirton, IS Team Leader at Allied, said: “There was resistance from the team.

“It was so new, so different. But after six to eight months, people started to adapt.”

It showed that the more the team got involved, the better the machine performed.

John Wray, Production Hot End Specialist at Allied, said: “Before, machine operators and shift supervisors would say, ‘I’m not going on there’, whereas now, people want to go on that machine.

“And more people are coming forward and asking for training, which is good.”

Mr Wray believed that firms needed to let people spend time on the training in order to get the true benefits from it.

Paul Dickinson, Production Manager at Allied added: “We’re a little bit old-school here at Allied. But now we’ve got the new technology, people want to go on BIS.”

Cooperation and support

Fortunately, BEG are always there with support.

Mr Kirton said: “Our cooperation has

been brilliant from day one. Our queries have been answered within hours. And when we can’t find the fault, an engineer has been on site the next day – if not the same day.”

Darren Shelley, Engineering Manager, explained that Allied also has online support from BEG.

He added: “If we have problems, the BEG technicians can dial into the machine remotely, make their own adjustments or just suggest remedies for us to do ourselves.”

Mr Summers stated that no one has walked away from anything.

He explained: “We had issues that needed solving, BEG has put the resource in, and we’re in a much stronger place.”

However, the learning flows both ways. BEG has two BIS sections running at its Research Center in Windsor in the USA, and has taken moulds from Allied there for analysis.

Mr Kammonen said: “We can also try new mould designs to look at production speed, cooling and so on. That helps to get things right before plants invest in a lot of expensive mould equipment.”

Sharing knowledge

In addition to working directly with BEG, all three BIS customers have collaborated, since they are too far away from each other – both geographically and commercially – to be competitors. The most recent example of this was the first BIS User Day, convened by BEG and hosted by Allied, where the insights generated through collaboration were shared with attendees.

Mr Kammonen said: “Nampak sadly couldn’t join us, but Noelle von Campe and ourselves were both there.

“The aim was to share the challenges and opportunities of working with BIS across a range of areas.

“We also talked about future priorities, and how to improve BIS.

“Sometimes, one manufacturer’s problem is another’s solution, and by discussing it around the table, you see that things can be solved.”

As BIS comes into its own as a high-performing and glass-forming technology, it surely won’t be long before more manufacturers get involved and capitalise on the solid work that has been done by BEG and its pioneering customers. ■

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