

Small ware - efficiently produced

Bucher Emhart Glass recently led a project to create the first quad gob arcuate pneumatic IS machine, in partnership with SGD Kipfenberg, as Leo Diehm and Rainer Becker explain.

The story is based on the fact that the 54mm quad gob had become 'orphaned'. This technology was based on 4¼in section boxes, originally designed and produced in-house by SGD/Bormioli during the 1960s. Since the designers were no longer developing it, the parts and mechanisms became obsolete and it was not supported by a machine supplier.

As a result, 54mm quad gob became difficult and expensive to maintain. But BEG saw there was a potential desire in the industry to resurrect the technology. All that was needed was a collaborator who would be willing to trial it in a production environment; an ideal partner was found in SGD Kipfenberg.

ABOUT SGD KIPFENBERG

SGD Kipfenberg is a leading manufacturer of glass containers for the pharmaceutical industry. The firm produces 700 million medicine jars every year, focusing on flint bottles, Type II glass and Type III glass. It is one of six production facilities within the SGD pharma group, all focused on serving pharmaceutical customers.

Originally founded by local breweries in 1871, the plant



The SGD production facility at Kipfenberg, Germany.

joined the SGD group in 1968. A modernisation programme in 2002 saw it become the group's foremost producer of Type II glass and in 2012, its furnace was refurbished and the four production and packaging lines were fully modernised. The plant employs 220 people in all, 145 on the factory floor.

LONGSTANDING RELATIONSHIP

SGD Kipfenberg's current setup features four Bucher Emhart Glass IS forming machines: Two 10-section 5in IS machines running in double and 85mm triple gob, one 10-section 5½in machine running in double gob and an 8-section 85mm triple and now a 64mm quad gob based on a 5in section.

Rainer Becker has worked at SGD Kipfenberg for 32 years and has been Technical Manager since 2002. In that role, he has been closely involved in the firm's long-standing relationship with Bucher Emhart Glass.

Recently, SGD Kipfenberg has made a move into 85mm triple gob production using a dual row conveyor. "This project has allowed us to standardise our IS machines and their variables" he explains.

Why has SGD Kipfenberg stayed with BEG for so long? "The main reasons are the quality and reliability of their machines and their strength as project partner" adds Rainer Becker. "In my view, the keys to a successful partnership are trust, reliability and flexibility when it comes to new projects and Emhart delivers all three."

ACCURATE QUAD GOB COLLABORATION

The most recent collaboration between SGD Kipfenberg and Bucher Emhart Glass has been to develop an arcuate IS machine in quad gob configuration, dedicated to the production of small ware. The project included the supply of everything from the feeder to the conveyor, plus FlexIS timing and drive system and all variable equipment but excluding the plunger.

As Rainer Becker explains, the original motivation for the project came from group level management within >



Johann Meier (left), Manager IS workshop at SGD Kipfenberg, with Rainer Becker, Technical Manager.



Small ware containers with dual row transport.

SGD. "Back in 2010, we began standardising all our IS machines across the group" he says. "For us, the scope of the new development was to continue using all our existing mould sets but adopt a large mould diameter. Once BEG had been confirmed as the project partner, we shared our existing mould designs and variable equipment with them and started work on a new design for a machine structure that would include all our variable equipment."

BETTER MOULD COOLING

SGD Kipfenberg had a 54mm quad gob machine to be replaced. "Based on our production expectations, we originally intended to stick with the 54mm based on a 4¼in machine using variables developed in-house" Rainer Becker explains. "Instead, we decided to go with a 64mm version, which offered better mould cooling

capacity and an increase in maximum bottle diameter."

Staff involved on the SGD Kipfenberg side were Sebastien Rignault, IS Manager Johann Meier and Electronics Manager Konrad Nerb, while BEG assigned Project Manager Reinhard Telzer, Director of Product Management Leo Diehm, VP Technology Matthias Kümmerle and Design Engineers Adriano Pasqual, Matthias Zurmühle and Adrian Niederberger.

CONSTANT CONE DELIVERY

SGD Kipfenberg's specially developed machine features BEG's Constant Cone Delivery, which allows for enhanced gob loading and flexible setup changes. The technology uses an updated version of Suspended Delivery, originally introduced in 1994 and has been successfully deployed on BEG's full-servo NIS machines.

With Constant Cone Delivery, all trough angles have exactly the same geometry across all sections. This achieves enhanced, completely consistent gob loading, eliminating the 'wild' compromises that were previously necessary. Machine centre distances can be changed more quickly, thanks to the universal trough support and suspension and an easily replaced deflector adjuster. Since overall machine height is slightly increased, Constant Cone Delivery does require new delivery variables.

SMOOTH STARTUP

SGD Kipfenberg's new machine began active production in summer 2015, focusing on pharmaceutical containers weighing 10g–65g, with capacities of 5ml–50ml. "Startup went very well" comments Rainer Becker. "Five months into production, we've had very few problems or breakdowns and the quality of production is good."

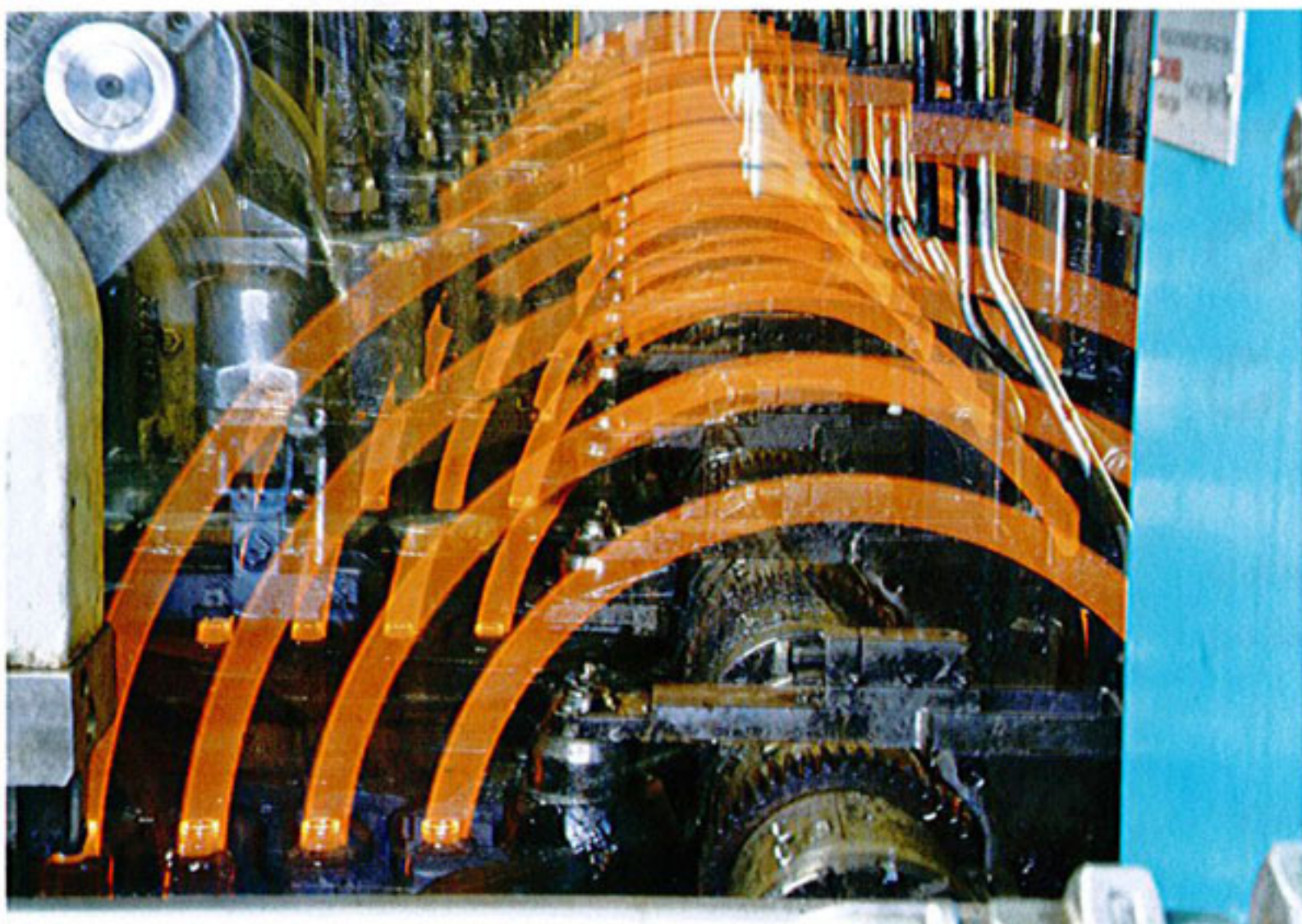
"Generally, we were very satisfied with the co-operation," he continues. "BEG always carefully considered the demands and requirements of the project."

ANOTHER LEASE OF LIFE FOR PNEUMATICS

BEG's fully servo-driven glass forming technology, NIS, was originally launched in 1999. Subsequently, more and more customers, particularly those who manufacture in high volume, have made the switch to servo. NIS is already available in quad gob configuration and the company also plans to develop BIS (NIS' 'little brother') to allow it to run in quad gob (both parallel and servo).

Originally, designing a pneumatic quad gob machine was never on the cards. However, that changed when valued customer SGD Kipfenberg indicated its interest in developing such a machine. Now, with development complete, BEG believes that the pneumatic arcuate machine has strong market potential and plans to make it commercially available in due course.

"As a company, Bucher Emhart Glass must listen to customers and work to meet their demands" says Leo Diehm, BEG's Director of Product Management. "However, it's the ideal situation for us to design a new centre distance, such as the 64mm quad gob, on behalf of a leading small ware customer. On this occasion, we're delighted with the results of the collaboration, both in terms of enhancing SGD Kipfenberg's production capability and also creating a valuable addition to our own 5in pneumatic arcuate machine portfolio with single gob, 5in double gob, 85mm triple gob and now completed with 64mm quad gob. We're looking forward to bringing this new technology to more small ware specialists around the world." ■



Pneumatic IS machine in quad gob 64mm operation.

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