Assessing the Konatic Smart Gob system

A review of the Konatic Smart Gob system by Peter J Firth*.

I have taken a detailed look at the Konatic Smart Gob system to appraise its benefits to the Glass Container Industry. This included a review of technical documentation as well as a visit to a glass plant to see the system in operation and get hands-on experience.

I conclude that there are significant benefits apparent both in process control as well as energy and raw material savings that should enable most glass plants to get a payback on their investment within a year... and that is what the accountants like to hear!

Firstly, about the payback that is most easily justifiable. This comes from the fact that the weight variation is controlled very closely to a few grammes by the system automatically adjusting the tube height as it sees a change in the size of the gobs (using two cameras). That means the weight of a job can be run more closely towards the lower end of the tolerance specification in Blow Blow (BB) and Wide Mouth Press & Blow (PB) production (which normally have wide tolerances). Just imagine a few grammes saved on average on each container made!

Note that the main benefits are realised in Blow Blow and Wide Mouth Press Blow production. This is because with Narrow Neck Press & Blow (NNPB) production, there should already be a closed loop weight controller which will be part of the plunger pressing control system to maintain the tight gob weight control required for that forming process.

Now back to using the system with BB and PB production... If the system is set up to save glass, then the payback is in the form or savings in glass and energy required to make each container. If you know your cost per tonne of glass then it will be easy to calculate how much money will be saved over the course of a year, whilst still making the same amount of containers to sell. There is more about that if you want to join the LinkedIn Group for the Konatic Smart Gob.

The Smart Gob will also prevent the lost production that can occur quite easily on BB and PB production, as typically there is normally no automatic weight control system being used. Usually, these forming

processes still rely on the IS Operator to make the manual adjustments. However, the operator typically only checks the job weight every 15 - 20 minutes, depending on the plant procedures. If there is an upset in the flow or temperature of the glass in the forehearth then out-of-specification weight will result. But with the Smart Gob, the adjustment would have been made to the tube height to compensate and maintain weight control.

Another disturbance that is quite typical in most plants comes from job changes on neighbouring lines. During this period, the weight can be affected unless there is a system like the Smart Gob installed. In this case, the variations in the temperature of the glass and the glass level in the forehearth, which could be caused by the neighbouring job change, can be compensated for automatically by the Smart Gob system.

Gob shape is another requirement for control that is often talked about. You hear well-known sayings like having the right 'gob for the job', which is very true.

Once you have the right gob shape then the Smart Gob imaging system will save the images so that it is easier to reproduce in future.

The variation in gob shape from one job run to another has often been cited as being the reason that some job runs are good and others are not so good, even though all other setups seem the same. We can therefore remove that variable and have more consistently good production runs.

From a quality control point of view, there is 100% weight checking of the containers for correct weight specification and this is all done in a non-contact way using the two cameras looking at the gobs.

Additional benefits come in some specialised areas of production too. Take for instance the production of jars where the push-up control is particularly important. In this case, the consistency in weight control leads to a more consistent base thickness which means the push-up depth control is more easily maintained.

In another similar example where the base thickness is important in cosmetic container production, a similar benefit is gained as the base thickness of those containers is directly affected by the variation in gob weight. A reduction in such variation, therefore, means the bottom thickness is more easily held in specification.

It all makes you wonder how we managed all these years without such a system. Well, the answer is we haven't managed, we have just suffered and lived with it in my opinion. The technology now exists to solve our previous such problems and the Smart Gob can give the glass plant the benefits described above.

If you want to know more, simply join the GUYS LinkedIn Group for the Konatic Smart Gob by using the link below. ■

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