FUTRONIC's vacuum control for advance error-detection

Futronic is introducing an advanced version of the VCS reject system: the new Vacuum Process Control (VPC) makes processes visible in the vacuum cycles and enables detection of potential manufacturing problems.

With this state-of-the-art version of the VPC (Vacuum Process Control) system, the German automation specialists can now make processes within the vacuum cycles visible while pressure curves and errors get recorded with fresh precision.

In this way the wear condition of filters, valves and blow moulds -among other features- can all be represented, thus ensuring that today's manufacturing problems get prior VPC detection before having a chance to occur. The system can be either optionally integrated into the FMT24S IS machine control system or retrofitted to existing equipment. It will also be available in a standalone version.

Quality has to be controlled, and here the manufacturing processes within container glass production are no exception. The principle is invariably the same: sensors automatically and reliably identify faulty containers, which are then accurately removed by the reject unit. Futronic's VCS works in much the same way: sensors measure the vacuum that gets applied to each job before comparing the value with a setpoint which is then individually defined for each section. Should some discrepancy be identified, the inferior article in question is ejected from the conveyor belt. By so doing the VCS makes a significant contribution to improving the quality of both products turned out and the manufacturing process itself.

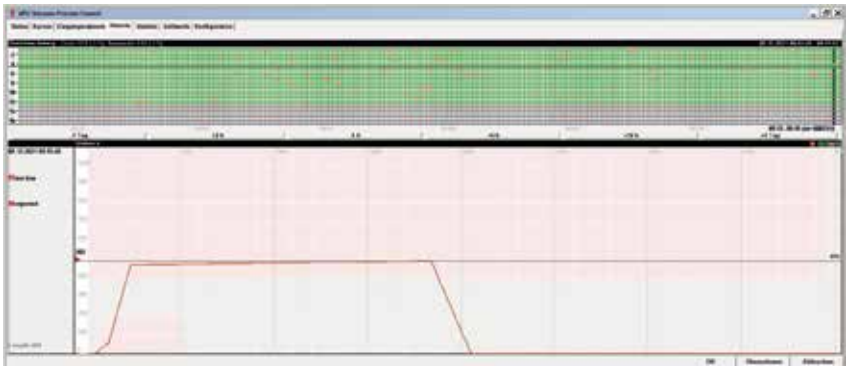
QUALITY-SENSITIVE VACUUM PROCESSES

"Our goal remains that of detecting errors before they have a chance to occur," affirms futronic Product Manager Florian Pawlowski. Here's why 37-year-old Pawlowski and his colleagues have held so many discussions with machine operators, production managers and technicians ever since the VCS first appeared in the market. Their joint verdict is that the majority of IS machine manufacturing processes and sequences are measured within the most inaccessible corners - being also monitored and controlled from furnace to lehr. Thus far, however, the vacuum process in the blow mould has mostly occurred in the dark. "What emerged from our conversations is that the vacuum process is very quality-sensitive," explains Pawlowski. Both the testing machines and the VCS can do no

more than react by rejecting faulty products. Nonetheless, it's not unknown for Quality Assurance to overlook manufacturing problems like so-called "bird swing" - especially where very small bottles are concerned. "Bird swing has extremely sharp edges, with the result that one can easily get hurt," reports Pawlowski. Not only. It could break off, with glass chips potentially landing on the pallet or maybe falling into other containers – possibly with fatal consequences. As such, the machine generally has to be stopped to clear the problem, with packed pallets being re-sorted at considerable expense.

IMPORTANT INPUT FROM VALUED DEVELOPMENT PARTNERS

Here's why specialists at futronic set about developing the VCS further – all in the hopes of closing one of the last remaining quality monitoring gaps in container glass production. With longstanding futronic customers collaborating on the project, important input was also received from technicians at production equipment manufacturer Heye International which, besides being the licensor of this technical process, has also been an important business and development partner of the Tettnang firm for many years.



VPC ENABLES PROACTIVE MAINTENANCE

"The idea was to bring light into the darkness or, in other words, to make the entire vacuum process visible." Achieving this requires sensors that separately supply key data for each section. For instance, both pressure or the vacuum within the blow moulds are particularly relevant parameters. Any increase or decrease in pressure, every maximum value and vacuum cycle duration are all measured too, as are vacuum valve response times. All data is viewed from the operator terminal with the complete vacuum process being thus represented – practically in real time. "In this way machine operators can keep a constant eye on the functionality and wear condition of valves, filters and the blow mould itself," adds Pawlowski. "They can react quickly in correcting any malfunctions - thereby mitigating defects without having to interrupt production."

STANDALONE VERSION FOR SEAMLESS INTEGRATION

The VPC option is due to become available in April for all IS machines equipped with futronic's proven FMT24S machine control system. It can also be retrofitted to any existing equipment that features an FMT24S control system. The VPC will be implemented as a seamless add-on for the FMT24S's OT software. Futronic can also supply the VPC in a standalone version, with a separate interface for integration into the control infrastructure of other manufacturers. ■

ABOUT FUTRONIC

Futronic GmbH is one of the world's leading providers of complex automation solutions for plant and equipment manufacturers. Its emphasis is upon the container glass, tableware, bulk materials, beverage and handling & assembly industries. In recent years the company has grown considerably to a team of around 90 staff who currently support some 1000 installations worldwide in the glassmaking industry alone. Established in 1972, futronic has remained a Jetter AG company from the start. Its Managing Directors are Michael Preuss and Christian Benz.

futronic automation

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