PROBLEM:
The producers of a revolutionary new bottle concept needed our help to optimize a small section of their blow-molding production system.

To allow efficient demolding at high speeds (10000 bottles/hour) it is necessary to apply lubricant onto the external bottom of the preform. Unfortunately the system they were using was delivering too much lubricant which polluted the workstation and created dangerous working conditions.

The producers decided to look for a more efficient system that would keep the operator post safe, keep the machine clean and still allow easy demolding of the bottles.

SOLUTION:
With over 80 years of expertise we have the technology to handle all kinds of challenging spray applications. Thanks to our Precision Spray Control (PSC) technology we can turn nozzles on and off very quickly to control the flow rate. This means that the lubricant will only be sprayed when there is a preform passing the nozzles. This cycling is so fast that the flow often appears to be constant. With PSC the pressure remains constant enabling flow rate changes without changes in spray performance. As a result the spray is only applied on the preform and not on the surroundings.

To make sure that they would select the most performant lubrication system the bottle producer decided to run a series of lab and production tests using different settings. After months of testing out various approaches and products we finally decided on a solution that would meet their expectations.

The AutoJet® lubrication system that allows them to spray the external bottom of the preform consists of the following setup:

- The preform passes in between two PulsJet® 10000JJAU Atomizing nozzles.
- The nozzles are controlled by an AutoJet® E1850+ Spray controller that is triggered by the preforms passing a sensor.
- Two proportional valves deliver the atomization air and the lubricant is delivered via a pressure tank.

REVOLUTIONARY BOTTLE CONCEPT BECOMES MORE SUSTAINABLE THANKS TO AUTOJET® LUBRICATION SYSTEM
RESULTS:

The bottle producer was delighted to have found the lubrication system they were looking for. The AutoJet® system with PSC technology uses 20 (1) times less lubricant than their previous solution. It fixes all the lubrication related problems they were having: No more pollution and safer working conditions.

Most importantly though the increased efficiency hasn’t had any negative effects on the demolding process. The bottles are easily removed and there are no delays in getting them to the next production phase.

A CLOSER LOOK AT THE SYSTEM

AutoJet® E1850+ Spray System provides easy control of nozzles and cycle times up to 10,000 cycles per minute.

PulsJet® 10000JJAU nozzle is an automatic spray nozzle spray nozzle. It applies a precise amount of lubricant on the bottom of the preforms.

Precision Spray Control (PSC) involves turning nozzles on and off very quickly to control flow rate. This cycling is so fast that the flow often appears to be constant. With traditional nozzles, flow rate adjustments require a change in liquid pressure, which also changes the nozzle’s spray angle, coverage and drop size. With PSC, pressure remains constant enabling flow rate changes without changes in spray performance. PSC requires the use of electrically-actuated spray nozzles and an AutoJet spray controller.

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