



**AW-LAKE**  
PROCESS FLOW MEASUREMENT



## **APPLICATION SPOTLIGHT**

Flow Meters Ensure Ultra-Precise Output from Automated Spray Foam Machine



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### APPLICATION:

A manufacturer of professional spray polyurethane foam (SPF) equipment offers an automated, high-accuracy system for void-filling projects such as taxidermy molds, boat hulls, walls, and impact insulation for shipping containers. Its configuration includes a proportional pump, which transports chemicals from two multi-gallon drums to the nozzle of a spray gun to create polyurethane foam.

The automated SPF machine follows user-defined batching recipes to balance precise ratios of chemicals from each drum to create a stable, consistent foam. To ensure quality foam production as defined by user parameters, the manufacturer needed a precise method of metering the exact output of these chemicals.

### PRODUCT SUPPLIED:

- **JVM-30BBV-NS Positive Displacement Gear Flow Meters.** By ensuring the correct proportional output of the expensive chemicals in this process, this positive displacement gear flow meter prevents overdosing and reduces material costs.

### CHALLENGE:

A precise amount of chemicals must flow through the hose of the automated SPF machine to ensure exact amounts are dispensed that match recipes entered by an operator. The pump is not reliable enough by itself as its stroke may drift over time, resulting in systematic compromises to dispense precise amounts of chemicals. A consistent,

accurate, metering method not prone to drift, overspin, or media slippage under pulsation is essential to determine and maintain the preset mix as determined by the end user.

### SOLUTION:

AW-Lake Positive Displacement Gear Meters provide ultra-precise chemical batching for the SPF machine over time. After a recipe is entered into the controller (or DCS), the pump activates, causing media to flow through the flow meters. As the media is metered, the flowmeters produce a signal that is sent back to the DCS, which controls the pump. When dispensed media meets specifications for producing the amount of foam to a preset batch, the DCS turns off the pump. This, in turn, halts foam production. Integrated sensors report when setpoints are reached to ensure precise batches of chemicals enter the hoses, guarding against under- or overdosing chemicals and allowing exact amounts of polyurethane to be sprayed by the machine. To ensure longevity and chemical compatibility, the meter features a ball bearing design that works well in non-lubricating media, such as the chemicals used here.

### RESULTS:

The manufacturer is highly satisfied with AW-Lake's JVM-30BBV-NS Positive Displacement Flowmeters, and has expanded this project into multiple systems as its accuracy is second to none!