



AW-LAKE
PROCESS FLOW MEASUREMENT



APPLICATION SPOTLIGHT

Accurate Dispensing of High Viscosity PVC Sealants in Automotive Production Line



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APPLICATION:

This is a dispensing application in which the company Dispense Tech was asked to apply a precise 3 mm sealant bead of a two-component (2K) high viscosity silicon sealer material (Dow Corning 2K-#SE-6667) for seam sealing of air bag assemblies. The two separate materials fell in the viscosity range of 300,000 cps and 275,000 cps respectively and needed to be precisely applied robotically on ratio (1:1) at a combined flow rate of 90 cc/min (45 cc/min each component).

Dispense Tech developed the 2K system using their advanced control system mated with a fluid plate containing two (2) AW SRZ-40 Helical Flow Meters/Air Operated Mastic Regulators/Pneumatic I-P Valves both running to a 2K Mix Valve with a Static Mixing element. The overall system will have two systems robotically mounted and dispensing simultaneously on two parts.

PRODUCT SUPPLIED:

- SRZ-40 High Resolution Helical NPT Flow Meter (SRZ-40 ST.HR.-B1)

CHALLENGE:

Working within the application parameters of dispensing at 45 cc/min of each material component needed a high resolution flow meter for the precise dispense control. Reviewing the material parameters of which both materials were very high in viscosity (275-300K cps range) other

AW-Lake flow meters (spur gear) were considered but the high viscosity would result in too high of pressure drop for the high resolution/smaller sized meter that was required for the precise control. The application required a high resolution flow meter but with a lower pressure drop.

SOLUTION:

The solution was to use a larger AW-Lake meter which would reduce the pressure drop but still be able to maintain a high resolution count at the required low flow rate. The flow meter that was best suited for the application was AW-Lake's Ultra High Resolution SRZ-40 Flow meter. The 3/4" port size maintained a low pressure drop but also had the high resolution of 33 pulse/cc for the advanced control requirements.

RESULTS:

The results actually ended up being a product improvement/new entry to the market in which there was available a larger meter (w/low pressure drop) with still a very high resolution pulse output to maintain accurate control for the job. This will result in an overall lower system operating pressure from the supply pumps to the gun which will result in excellent equipment life and operation.