

A SIMPLE FLOW METER CAN INCREASE YOUR PRODUCTION AND PROFITS

Proper heat transfer between cooling water and your mold is key to greater profits with short cycle times and good part quality. The heat transfer occurs when **turbulent flow** is produced in the mold. Turbulent flow is indicated by a high Reynolds number, which can only be calculated if the actual flow rate is known. In addition to the Reynolds number, there are others reasons to "know your flow".

10 simple, no-nonsense reasons for getting to know your flow.

1. Ensures that piping and manifolding are correct. Many are surprised to learn that even minor changes in plumbing can greatly increase flow to the mold and decrease cycle times.

2. Protects from buying too much pump. Buying a larger pump is no guarantee of adequate flow, if the geometry of the piping, manifolding and tool will not allow the extra flow. The average cost of upgrading from 3/4 to 3 hp is \$300. If the average shop has 15 presses and 30 controllers, the added cost is \$9000. Is the added expense necessary if the 3/4 hp pump is adequate?

3. Discovers fouled lines in tool passages. Watching the flow rate decreasing over time is usually a case of fouling. A prominently displayed flow rate can make this obvious so the problem can be dealt with before it costs profits by increasing cycle times.

4. Manages energy. Coupling a motor operating at 97% efficiency to a pump

operating in the 55-60% efficiency range diminishes any energy saving benefit. A flow meter tells that the motor and pump combination operates at peak combined efficiency.

5. Assures the pump is rotating in the proper direction. Operating a pump in the reserved direction degrades system performance. Most people would be surprised to learn how many pumps are found running backwards in the midst of expensive service calls.

6. Troubleshoots the entire temperature control system. Using a flow meter as a diagnostic tool quickly isolates a flow problem to the root cause, whether it is a pump or system problem.

7. Takes guesswork out of future equipment purchases. Monitoring the thermal capacity at various stages of processing cycle is a function of knowing the flow rate and the to / from process temperatures, and then comparing the actual heat rejection to the theoretical



Cut away view of flow meter from the Sentra SK.

values. Becoming familiar with this kind of information will ensure that future equipment purchases are sized correctly.

8. Recreates minimum cycle time setup for a given tool. Changing molds frequently is simplified by keeping a record of the optimum flow rate for the mold. When the tool is installed, the flow rate that produced the highest quality parts at the minimum cycle time the last time that tool was used can be quickly and easily dialed in.

9. Throttles the pump. Knowing the optimum system flow rate, a flow meter will help you throttle the pump appropriately to keep it from overloading.

10. Develops an intuitive knowledge of flow in systems. Working with flow meters allows people to develop a sixth sense for flow rates in piping systems. By estimating the flow by valve handle position or listening to the sound that a bypass valve makes can be handy when a flow meter is not available.

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KNOW YOUR FLOW WITH THE ADVANTAGE SENTRA MOLD TEMPERATURE CONTROLLER AND THE MAXIMUM PORTABLE CHILLER



SK-1035

The Sentra SK with HE instrument displays process flow in GPM or LPM.



HE Instrument

The Maximum MK with HE instrument displays process flow in GPM or LPM.



HE Instrument



MK-10A

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