

Energy Saving Tip of the Month

7. Injection molding 1

Injection molding is one of the most common plastics forming processes and has made many technical advances in recent years. Injection molding machines have 'base' and 'process' loads and an idling machine is not 'free', it is costing large amounts of money.

Injection molding machines use energy even when idling; the amount varies with the machine but can range from between 52% and 97.5% of the full molding energy consumption. For idle periods of greater than 20 to 45 minutes it can be cheaper to switch off and restart. At the very least, the system should switch off unneeded services and functions, i.e. the main hydraulic motor.

Action:

- Check that all jobs are on the smallest machine possible - small jobs on large machines waste energy.
- Plan and control the start-up sequence to limit the Maximum Demand.
- Fit a warning device to sound or flash when the Maximum Demand approaches the allowable limit.
- Measure start-up energy use, idling energy use and operating energy use to find the relative costs.
- Define an 'idling' mode for all machines - heaters reduced, hydraulics off and compressed air off.
- Stop supplying services (compressed air and cooling water) to idle machines.
- Switch off barrel heaters and cooling fans between runs.
- Design handling systems to operate 'on-demand' only.

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Dr Robin Kent is the author of Energy Management in Plastics Processing and Managing Director of Tangram Technology Ltd., consulting engineers specializing in energy management in plastics processing, rkent@tangram.co.uk