will SyncroSpeed work for you?

These are the questions we ask at an early stage, to help us all understand whether our SyncroSpeed technology is going to be a good application for an injection moulding facility.

1. **Do you have IMMs bigger than 300 tons press size with motors >37kW (>40HP) ?**
   The cost per kW of motor controlled for VSD's <30kW is relatively high. This, together with the smaller savings on small tonnage IMMs, means that the resulting extended payback can be unacceptable (>5 years). Bigger motors on large tonnage machines are better.

2. **What make of IMMs do you have (Van Dorn; Engel; HPM; Windsor; Haitian; etc...) ?**
   NRG engineers have worked on most makes of IMMs on the market today. All makes of machines will be different and the answer to this question will help us to qualify the answers you give to us.

3. **How old are the IMMs (year of manufacture) and do you have the model number ?**
   Generally new IMMs will be of a better energy efficiency design to those machines 10 - 15 years old. There are exceptions to this for which SyncroSpeed can still achieve a good level of savings. For example, new Haitian machines >400t have FIXED displacement hydraulic pumps and should be considered for SyncroSpeed.

4. **Do these IMMs have Variable displacement pumps ?**
   If the answer is NO, then the IMMs must have FIXED displacement pumps and are potentially good candidates for SyncroSpeed.
   The level of saving on IMMs with FIXED pumps will be 35 to >55%. The saving on IMMs with Variable pumps will be much less <10 to 20% and this will impact on payback.
   Some IMMs can have a mix of fixed and variable pumps. This can be confusing when answering this question.

   PLEASE NOTE: We will look at large tonnage IMMs (2000t to 5000t) with Variable displacement pumps on a case-by-case basis. We can only save on this type of IMM during static phases of the machine (no movement) but these large tonnage machines can have very long cycle times with over 40% being static. This can still add up to a good financial case.

5. **Do the IMMs have hydraulic accumulators ?**
   Look for machines that do not have accumulators. As with the note on question 4, we will assess large tonnage (multi-motor) IMMs with accumulators on a case-by-case basis.

6. **Are the cycle times >25 seconds ?**
   SyncroSpeed saves at virtually every phase of the moulding cycle. Longer cycle times = greater saving opportunities
   Longer cycle times are associated with bigger mouldings…. running on bigger tonnage IMMs…. and with bigger motors.

7. **How many of these injection moulding machines do you have ?**
   How many IMMs do you have in total and, with all of these questions in mind, how many IMMs do you have that meet these criteria ?

8. **Annual motor running hours (machine utilization) ?**
   How many hours in the year are the motors switched on ?
   To keep this simple we just ask how many hours a day, how many days per week and how many weeks a year are you operating the machines ?

   PLEASE NOTE: SyncroSpeed saves energy even when the IMM is not producing (moulding) but is left switched on with the motors idling. Do not discount (throw away) time here. If the motors are running we can save you money

9. **Motors switched off time (%)**
   What % of the hours in the year **(8)** are the motors switched OFF ?…. 5% of the time?, 10% of the time?…. or something else? Take an educated guess if you do not know the exact amount of time.

10. **What is your average cost of electricity ?**
    We need to know how much you are paying for electricity (cost/kWh)…. also, any price/contract changes ahead ?
    Are you paying maximum availability or demand penalty charges ?…. SyncroSpeed will reduce the kVA at the site transformer and at the same time as saving motor kW consumption. Saving kVA will allow more machines on the same power supply and help with availability and demand issues.

11. **What is the method of hydraulic oil cooling ?**
    Are you using cooling towers, chillers... or something else ?
    The energy saved with SyncroSpeed reduces heat in the hydraulic oil. This saves on the cost of cooling. This can add a further 10% kW saving... or even more when chillers are used, and is in addition to that achieved with the motors.

12. **Do you have any rebates or government financial incentives available to you ?**
    SyncroSpeed qualifies for government tax breaks and rebates, which are intended to provide an incentive to industry to improve energy efficiency of plant and machinery. A positive cash flow is usually the goal of these schemes.

CCS Technology Limited

School Street, Wolston
Coventry, CV8 3HG, England

T: +44 (0)24 7654 5711
F: +44 (0)24 7654 5722
E: fredp@ccstech.co.uk

www.ccstech.co.uk

ccstechnology
power through control