
# Increasing the energy efficiency of STORK pump drive systems

All Stork injection molding machines come equipped with hybrid drive systems as standard. Each machine has three primary sources of driving power:

1. The main motor / pump drive system
2. The hydraulic accumulator drive system
3. An electric drive system which, is standard for plasticizing

The Stork drive system is designed to be simple, robust, and energy efficient. The hydraulic system has generously dimensioned piping and hoses to reduce energy transmission losses. The system always consists of one motor and one variable displacement pump. In addition the primary pump provides oil filtering and cooling, which provides immediate saving of two kWh!

Of course, adding additional electric drive systems will further increase energy efficiency; but for machines in the installed base, it is more feasible to optimize the primary pump drive system.

Stork machines can be equipped with different optional drive system modifications for driving the hydraulic pumps in the most efficient way in your specific situation. Feasible solutions will have a return on investment from 1 to 3 years.

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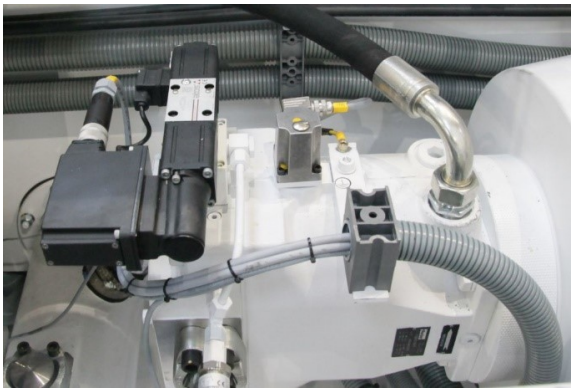
INJECTION MOULDING MACHINES

STORK® IMM


1. Decrease motor and pump capacity.
   When machines are running consistently at slower cycle times, i.e. 20 seconds and slower, the motor and pump system can be reduced, which saves energy and allows the motor and pump to operate at an optimal 100% load.

2. Implementing an electrical servo valve on the pump driving system.
   This is a Stork development consisting of a servo valve, controlled as a “fly-by-wire” system on the machine controller. This modification will be standard on all new machines as of 2019, saving 2-5% on energy consumption, independent of the cycle time of the machine.



To guarantee optimal results, Stork always combines option three with option two. The pump drive system is then also modified to have pilot oil directly from the accumulators. This ensures optimal response times from the pump system. When running the machine in “eco-mode” even great energy savings are possible.

Stork can retrofit your existing machines with above mentioned options on Stork equipped with the HX drive system.

Consult our service department for all possible savings and costs.

3. A frequency controlled drive system on the main motor.
   When the machine is running a variety of different products at different cycle times, Stork recommends implementing a frequency inverter to reduce the energy consumption during idling of the motor/pump. Savings can go up to 7 kW/h.

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