

# Stepper Motor with Torque Control Stops Burnout



## Customer Info

Manufacturer of blowmolded parts and advanced blow-molding technology.

- Recycles all purchased material and recycles nearly 20 million pounds of plastics annually for other molders.
- Six manufacturing plants.

*Services Offered by OEM*  
Design & Development  
Mold Making  
Manufacturing  
Machinery Development  
Compounding/Recycling

## Business Challenge

Customer needs to decrease downtime caused by motor burnout and increase throughput by increasing production speed.

## Equipment:

The current equipment, a 1st generation blow molded plastic part picker, has an Animatics stepper motor. The picker requires special programming to track its stall conditions in order to periodically change programming to handle the workload. A new stepper motor that had torque control was presented along with a right angle gearhead.

## Situation:

The Animatics stepper motor on the picker periodically stalls and in most cases burns out. Each time this occurs the step motor/controller must be completely replaced. In the situation where the motor does not burn out after stalling the line still has to be shut down and reprogramming must occur to make necessary adjustments. These adjustments involve reducing the current to facilitate its movement thus slowing down the cycle rate. Also the homing process could not be automated for different end of stroke positions for different size parts.

## Solution:

Recommended was the IMS MDrive Hybrid; the only stepper motor with built in torque control and a Thomson right angle gearhead.

The MDrive Hybrid will not lose its position or over-heat in a stalled condition. Additionally, the home and travel limit positions can be changed by the mechanical stops, and the MDrive Hybrid is programmed to find those positions automatically, store the positions, and run the pick program.

The Thomson right angle gearhead replaces an in-line planetary gearhead. The changed angle points motor up resulting in a narrow picker width which is ergonomically better.

## Benefits:

Lower Cost of Ownership due to longer life - \$868.59  
Downtime Eliminated - \$78,000  
Scrap Rate Savings - \$5,000

*Market Potential* - Customer will be able to sell more pickers resulting in additional revenue - \$80,000

## Components Used:

IMS MDrive Hybrid with a Thomson Right Angle Gearhead  
*Cost of Solution: \$2,127.03*

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