

NEWS



FOR IMMEDIATE RELEASE

From: Jim Robbins
jim.robbins@brown-machine.com

For: Brown Machine LLC
330 N. Ross Street
Beaverton, MI 48612

877.702.4142 Toll Free
989.435.2821 Fax

Contact: Jim Robbins
989.435.7741 Ext.1216
989.859.7426 Cell

Brown Machine's External Plug Assist Plate Tool Design Awarded Patent

Beaverton, MI, January, 2004 – Brown Machine has been awarded a patent for their tool design utilizing an external plug assist plate. Thermoforming tools with an external plug assist plate provide customers with significant reductions in air consumption of their 3rd platen thermoforming equipment. “3rd platen thermoforming tools with traditional **internal** plug assist plates use significantly more blow-form air than tools with Brown’s patented **external** plug assist plates. In fact, for round products, a pressure box with an internal plug assist plate will typically use twice the blow-form air that would be consumed by the same pressure box with an external plug assist plate. For rectangular products with small corner radii, the difference stated above is less than twice, but still significant,” states Bill Wells, BROWN Tooling Engineering Manager. “Additionally,” he says, “a tool with an external plug assist plate is structurally much stronger than the large hollow void necessary to accommodate an internal plug assist plate.”

The following example demonstrates the magnitude of reduction in air consumption. Assume a 50 inch (1270mm) 72-cavity tool with an external plate, producing 32 ounce drink cups at 12 cycles per minute and utilizing 90 PSI. The blow-form air consumption with the patented external plug assist plate of the tool calculates to 470 SCFM (Standard Cubic Feet

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per Minute). An equivalent tool designed with an internal plug assist plate, operating at the same cycle and pressure, would consume 954 SCFM. Air consumption is more than doubled.

Based on an industrial rate of \$0.04 per kW-hour, the example tool equipped with Brown's external plug assist plate and running a three-shift five day per week operation would save nearly \$18,000.00 per year in electrical compressed air costs. This savings calculation does **not** include capital cost savings for the additional compressor capacity or the compressors maintenance.

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For more information on Brown Machine's external plug assist plate, contact Brown Machine LLC, 330 North Ross Street, Beaverton, MI 48612-0434, USA. Phone (989) 435-7741; Fax (989) 435-2821; e-mail Bob Gordert at bob.gordert@brown-machine.com; www.brown-machine.com or Mike Witer at mike.witer@brown-machine.com; www.brown-machine.com