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MELT PRESSURE CONTROL

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Now available as a standard option on the [MACO Compact](#)
 (see also [MACO Compact Retrofits for Van Dorn/Demag HT™* Machines](#)).
[Frequently asked questions on iPact](#)

Advantages of molding with melt pressure control

- Fast start-up
- Reduced Cycle Time
- Real time control
- Less scrap
- Improved surface quality
- Consistent part density
- Improved repeatability

[How does it work?](#)

Eurotherm's iPact feature utilizes [Intellimold™](#), a complete real time closed loop system that controls molding processes based on recommended processing conditions for the material. Controlling to these conditions reduces material degradation and deformation, which correlates to better parts.

The processing conditions are Injection pressure (dynamic fill, and pack & hold), Melt temperature and Injection time.

Controlling Injection Pressure

Melt temperature and injection time are easily achievable, since they are fixed values that can be directly entered into an operator interface on the machine. Injection pressures are a different story. Conventional molding techniques attempt to achieve recommended injection pressure by means of a velocity profile. But a constant velocity does not correlate to a constant internal melt pressure due to the non-linear behavior of material. This results in linearization of the polymer during the dynamic fill stage up to 10:1 in comparison to the pre-molded spherical structure; residual stress and micro cracks from the pack and hold stage; and excessive shear.

Internal Melt pressure

With some materials the key to good molding is to control the internal melt pressure in real time in order to give the material optimal molding conditions to solidify in a state of designed morphology. Internal melt pressure is the result of four dynamic components. These components are shrinkage forces, resistance of the mold, resistance of the air trapped in the tool, and partial solidification of the melt. Since these forces vary throughout the cycle, so does the internal melt pressure.

This method of process control is available in a total machine control systems or as a stand alone package. More information in the iPact data bulletin listed below..

iPact Documentation	
Specification sheet	HA136761 Iss 1 (308KB)

- [How does it work?](#)
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- [Frequently asked questions on iPact](#)

* Van Dorn Demag is registered by Demag Corporation, Strongsville OHIO Tuesday, November 11, 2008

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