HOT RUNNER TECHNOLOGY

SVG+ Simple, yet smarter.
The Standard for Sequential Valve Gate Molding

Stabilize your Process

Synventive molding solutions
A business of BARNES GROUP INC
As the leading innovator in sequential valve gate molding, we continually strive to perfect our hot runner solutions, providing the most efficient way to achieve superior molded parts.

Our high degree of customer service, matched with the latest technological advances, means your success in injection molding.

SVG+, the standard for hydraulic Sequential Valve Gating applications, offers numerous patented design enhancements for superior performance and efficiency.

Improve your molding process with SVG+:

- Easy set up and troubleshooting: Features that provide significant time savings by providing monitoring and diagnostics tools from outside of the machine. This results in less downtime, less scrap and increased reliability.
- Allows for easy upgrade to activeGate® technology for increased molding control and improved part surface quality.
- Simple designs: No cooling lines or plates required.

Reduce the cost of your molding operation:

- Faster start up
- Faster tool changes
- Better part quality
- Higher productivity
- Upgrade only if needed
The SVG+ systems boast the latest hot runner advancements, providing the optimum molding solution for your applications.

**Why Choose Synventive:**
- Expert application knowledge
- Application simulation
- Experienced team of engineers
- Robust product line
- Best in class features
- Exclusive flow control technologies
- Local support at startup
- Leading service for the life of the tool

**Valve Pin Monitoring**

Synventive’s patented pin monitoring (VMI) via sensor technology facilitates easy set up for your sequential valve gated applications and provides full monitoring, diagnostics and troubleshooting from outside the machine.

Having VMI installed allows you to check that your valve pins are moving as intended, from outside the machine. This removes the need for unsafe physical pin checks, and also provides measured individual pin movement data.

**What VMI can do:**
- Real time valve gate status
- Troubleshooting from outside of the machine
- Check that the valve pin is traveling as intended
- Read actuator opening times, during the molding process.

**Easy Set Up**

- Calibration stored in junction box; single main module can be used on multiple systems
- Open, intermediate, and closed position status lights for real-time indication of pin position
- Valve pin opening times are displayed

Position sensor sends signals to the junction box

Calibration stored in junction box; single main module can be used on multiple systems

Valve pin opening times are displayed

Signal outputs for data logging
SVG+ systems boast the latest hot runner advancements, providing the optimum molding solution for your applications.

Self-Cooling Actuator

SVG+ systems may include a self cooling actuator which can eliminate the need for water lines in most applications. No cooling plates, lines or water required so there are no clogs or contamination issues to worry about.

This patented SynCool3 design provides actuator cooling via proprietary thermal conductors making contact with top clamp plate.

SynCool3 provides these important benefits:
- Preheat without damage to actuator or seals
- No more clogged cooling lines
- Prolonged actuator seal life with less service
- Patented automatic bleed function
- Easy access to pin for adjustment and quick pin decouple
- Improved manifold temperature uniformity over water cooled system
- Facilitates quick mold changes by eliminating need to cool down hot runner
- Prevents overheating and degrading of hydraulic fluid

Supplied as Plug ‘n Play® system, ready for easy installation & startup.

- Uniform bolt-on modular actuator series
- Hydraulic & Pneumatic hot runner systems
- Pre-plumbed / Pre-wired / Pre-tested

### SVG+ Usage Guidelines

<table>
<thead>
<tr>
<th>Low Temp Materials</th>
<th>With Position Sensor</th>
<th>Without Position Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPO, PP, HDPE</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TPE, LDPE</td>
<td>Consult</td>
<td>Consult</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Higher Temp Materials</th>
<th>With Position Sensor</th>
<th>Without Position Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic Actuators</td>
<td>Consult</td>
<td>Consult</td>
</tr>
<tr>
<td>Pneumatic Actuators</td>
<td>Max TCP Cooling 80°C; Max Hot Runner 280°C</td>
<td>✓ Max Hot Runner 320°C</td>
</tr>
</tbody>
</table>

Approved with no cooling in Top Clamp Plate (TCP) and no actuator active cooling plates.

Approved with Top Clamp Plate (TCP) cooling and noted restrictions.

Consult Synventive.
The SVG+ systems boast the latest hot runner advancements, providing the optimum molding solution for your applications.

SVG+ systems are supplied as activeGate enabled. Simply connect a VMI for pin position monitoring, or if greater control is required, upgrade to the appropriate activeGate technology.

activeGate technology provides greater control for the molding process and can improve part quality. By controlling the flow of plastic out of each gate, activeGate can minimize or eliminate a variety of part cosmetic defects.

Benefits may include:

- Higher quality part cosmetics
- Ability to mold complex geometries with high dimensional stability
- Higher production rates
- Clamp force reduction
- Balancing of family or modular molds
- Decreased scrap

Every application is unique, please consult Synventive for a thorough review to ensure the best solution for your application needs.

- Modularity: Broad product offering
- Upgradability: Easy to upgrade to applicable technology
- Unique to Market: Includes numerous patented technologies
Determined… driven… totally focused on our customers.

Through ongoing collaboration with customers, we’re focused on one objective: to develop the most effective hot runner solution for the specific application, giving customers precision-control over injection molding and ensuring reliable, trouble-free operation. Partner with us and your business can rely on 45+ years of experience, industry-leading technology, backed by unprecedented support for your projects.

Synventive has manufacturing operations in North America, Europe and Asia, each with its own manufacturing, design, and research and development departments.

**MOLDING SOLUTIONS**

Molding Solutions, a strategic business unit of Barnes Group Inc., provides high quality hot runners, molds and control systems to demanding global customers in the injection molding industry.