Challenges
Globalization, pricing pressures, and increasingly stringent environmental regulations are constant challenges to pharmaceutical companies. The bottom line is to find a solution that provides better and faster results, delivers projects faster with better regulatory compliance and a longer sustained value.

In addition, machine builders specifically expect ampoule filling machines to be:
- **Standard Modular Solution:**
  Mix and match ampoule filling machine functions specific to products, customer applications, and local market demands, with pre-developed Add-on Instructions (AOI) for all potential end user requirements.
- **Scalable:**
  Full range products with the ability to customize features to particular market and add functionality that are based on customers’ requirements.
- **Cost-effective solution:**
  That reduces machine integration, mechanical, electrical optimization and wiring costs while shortening software development time and maintenance.
- **Global support:**
  Fast response and remote access to decrease end-user downtime.

**Faster time to build Ampoule Filling Line**
- **Flexible common network based architecture.**
- **Modular program concepts for easy re-use of code.**
- **Premier Integration capabilities to increase flexibility & performance.**
- **Global support availability to ensure minimum downtime.**
Advanced Machine
Typical Architecture

- Modern Human Machine Interface – ability to access videos and PDF files.
- Advanced servo system for one button changeover.
- Variable Frequency Drive in the integrated architecture.
- Customized filling time for filling process optimization.

**Studio 5000 Logix Designer®**
Power programming which allows program designs to be modular for easier programming and higher equipment safety. It saves significant engineering time, enables faster startup and commissioning.

**Optimized electronic CAM profiles**
on motion control systems may ensure smoother machine operation and enhance machine mechanical life.

**Diagnostic information regarding Servos** available on Human Machine Interface.

**Faceplate functionality diagnosis** allows easy monitoring and troubleshooting

**Optimized variable frequency drive commissioning** that improves efficiency, increases quality and reduces downtime

**Programmable filling curves** reduce carbonization rate

**Cost savings** by using standard competitive solutions.

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<table>
<thead>
<tr>
<th>Machine Speed</th>
<th>&gt; 40 Cycles Per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td>Ethernet/IP</td>
</tr>
<tr>
<td>Controller</td>
<td>CompactLogix™ L3 OR ControlLogix L7</td>
</tr>
<tr>
<td>Human Machine Interface</td>
<td>PanelView Plus 6</td>
</tr>
<tr>
<td>Variable Frequency Drive</td>
<td>PowerFlex® 525</td>
</tr>
<tr>
<td>Servo Drive</td>
<td>Kinetix 5500</td>
</tr>
<tr>
<td>Synchronous Motion</td>
<td>More than Sixteen Axes</td>
</tr>
</tbody>
</table>
Advanced Machine
Typical Architecture

- Optimized machine efficiency: online filling volume adjustment.
- No bottle no filling program: saves product and raw material and reduce wastage.
- Open interface for online check weight printing etc.
- One single network.

ISPE GAMP5 based methodology
To help ensure quality of the pharmaceutical products.

Capability and experience of the regulatory compliance with FDA, EU, and China SFDA GMP.

Capability and experience to verify Equipment Control System, Batch Control System, Manufacturing Execution System, and relevant Interfaces.

The ampoule filling machine control system is a 21 CFR Part 11 compliance system to help verify electronic records and signatures are trustworthy, reliable, and equivalent to paper records.

Support of Flexible Mass Serialization. Industry Regulation is becoming stringent. With Adaptable and Modular solutions from RA combine Serial Data Engagement with High speed device management.
Stand-Alone Machine
Typical Architecture

Connected Components - proven optimal configuration. Cost effective solutions. Reduced panel engineering enables a shorter time for wiring and thus improves machine assembly time. Availability of plug-in modules at the controller allow for expanded machine features and functions.

Common Programming Software
Connected Components Workbench for Micro800®, PowerFlex (AC Drives), PanelView™ 800.

Kinetix 3/300 servo drives with embedded indexing simplifies motion control.

Versatility of Interfaces up to six high speed counter inputs and up to three ‘Pulse Train Output’ over embedded digital I/O. Up to five plug-ins and up to four expansion I/O modules.

High Flexibility plug-in and expansion modules allow you to optimize your machine cost by choosing performance and functionality specific to your machine needs.

Embedded communications: USB for configuration and monitoring, Ethernet for HMI, Serial Port for simple device connectivity.

<table>
<thead>
<tr>
<th>Machine Speed</th>
<th>&lt;40 Cycles Per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td>EtherNet/IP, USB</td>
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<tr>
<td>Controller</td>
<td>Micro800 Family</td>
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<tr>
<td>Variable Frequency Drive</td>
<td>PowerFlex S23</td>
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<tr>
<td>Servo Drive</td>
<td>Kinetix 3 and 300</td>
</tr>
<tr>
<td>Motion</td>
<td>1 Indexed servo axes</td>
</tr>
</tbody>
</table>
Supporting Your Business Every Step of the Way

At every stage in the life cycle of your machines, Rockwell Automation is your collaborator. From design to build to operation and maintenance, you can count on the continuum of Rockwell Automation resources.

By taking advantage of our products and services, you can lower your Total Cost to Design, Develop, and Deliver®, while improving your time to market. You will be better equipped to react quickly to change, increasing profits and attracting new customers with high-performance and innovative machines. Whether providing you with single components, entire systems or specialized consultation or trying to achieve sustainable production initiatives, our goal is to offer solutions on a personalized level.

For More Information:
Call a Rockwell Automation sales office or an authorized distributor today or visit us online at www.rockwellautomation.com

For more information about our OEM Solutions, please visit:
http://www.rockwellautomation.com/go/lit/oem

Connect with us.

www.rockwellautomation.com

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Publication OEM-BR046B-EN-P - September 2015
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