

Flex Molding Process: Innovative Accessories

Turbo Autosprue (5855)	Pneumatic Pressure Vacuum Sensor - Infusion (PPVS-Infusion)	Turbo Autosprue - Infusion (TAS-14)	Pinch Valve (Assy-0436)	PPVS Set-Up Box (ASSY-0374)
Control Panel (ASSY-0443)	Pipe Clamp (IPC-1000)	Infusion Film Adaptor (IFA-1000-FLX) with resin feed channel	Infusion Film Adaptor (IFA-2000-FLX) no resin feed channel	Infusion Film Adaptor (IFA-3000-FLX) with resin feed channel
3/8" Silicone Bag Connector (FLX-SBC-375)	1/2" Silicone Bag Connector (FLX-SBC-500)	Universal Insert Silicone Bag Connector (FLX-SBC-UI)	Universal Insert - Resin Feed Channel (FLX-UI-400)	Universal Insert - PPVS, Vacuum and Locking Seal 80mm x 80mm (FLX-UI-200)
Universal Insert - PPVS, Vacuum and Locking Seal 34mm x 80mm (P/N TBD)	Universal Infusion Connector - 1/2 inch NPT (RTMA-1011)	10 mm Injection Insert (6319)	16 mm Injection Insert (Assy-0448)	Blank Plug (6328)

Flex Molding Process: Unique Seals (Patent Pending)

10mm Resin Feed Channel (FLX-CH10-1)	15mm Resin Feed Channel (FLX-CH15-1)	Locking Lip Seal (FLX-LS-1)	End Cap for Resin Feed Channel No. 1 (FLX-EP10)	End Cap for Resin Feed Channel No. 2 (FLX-EP15)	360° Double Locking Lip Seal for Membrane (FLX-LS-360)
Silicone Suction Cup for use with Locking Lip Seal (FLX-SC-101)	Silicone Glue (FLX-SG)				

To Learn More About the Technology of Magnum Venus Plastech, Please Contact Us Today.

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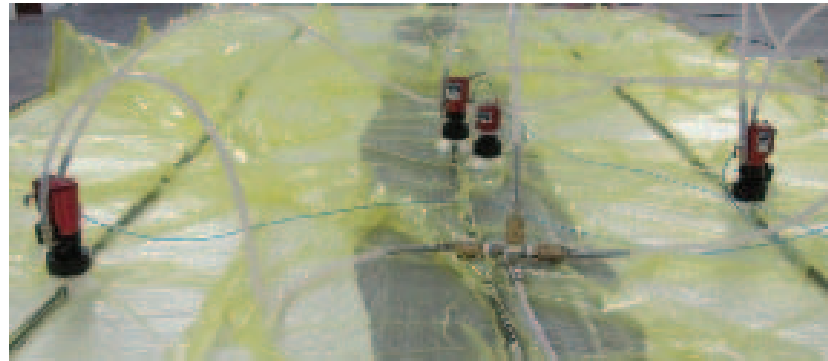
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A New Approach To Film Infusion

Film Infusion Molding, using either infusion films or reusable films made with Silicon, Polyurethane or Latex membranes, has slowly been gaining popularity over traditional closed mold methods. The costs and learning curve in mold tooling is much lower with Film Infusion than the traditional rigid Light RTM double mold set alternative.

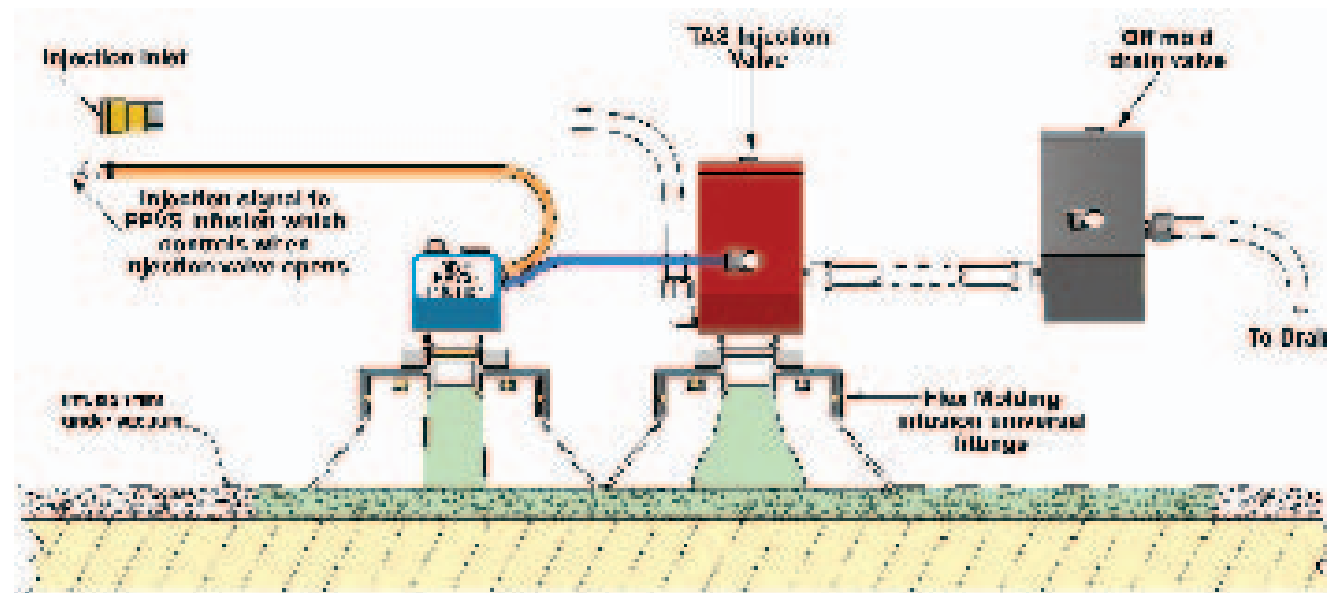
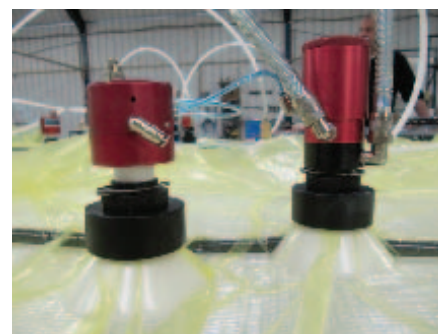
However, one of the challenges in the Film Infusion process has been a lack of emphasis on the improvements of feeding resin under the membrane. In the past, it has been normal to pre-mix the resin in a separate container and have the vacuum "draw" the resin into the mold through multiple ports strategically placed in the infusion membrane. This method has, and does, produce good results, particularly with large parts such as boat hulls and large wind turbine blades, however there was still a need for a better solution to the continuous renewal of feed pipes, reservoir cleanout, waste of resin after infusion and the pre-requisite labor required for each molding cycle (setting up the tubing and gaining vacuum connection security).



After two years of research and development, Magnum Venus Plastech has developed a complete solution to these challenges. That solution is the new **Flex Molding Process** technology.

What is different about Flex Molding?

- Flex Molding is a **comprehensive package** that consists of injection systems, accessories and patent pending seals specifically designed to optimize infusion with a better control of the production, training kit and training courses.
- Eliminates the need to pre-mix resin and the use of consumable tubing and fittings, by using a mix/meter infusion system that provides a direct feed to the infusion membrane.
- Flex Molding achieves an unmatched level of precision with new accessories including the Pneumatic Pressure Vacuum Sensor (PPVS-Infusion), infusion specific Turbo Autosprue (TAS-14), simple but effective clamp and more.
- Offers a new "lockable" reusable membrane in addition to traditional vacuum bag infusion.
- Elimination of large resin reservoirs and multiple large bore feed pipes reduces costs and consumable wastage.
- Flex Molding also includes Universal Membrane Fittings that provide a secure connection for the connection valves.
- Comprehensive Training Package that covers the process, accessories and systems.
- Each MVP distributor around the world will take the same training course that our customers will be offered, insuring that they will be able to provide expert assistance as their customers make the move to this new technology.



Flex Molding Process: Injection/Infusion Systems

Patriot™ Pro Innovator System

The Patriot™ Innovator Pro Injection System was designed for injecting polyester, vinylester and methacrylate resins and catalyst at controlled pressures. The mixing of the materials happens at the injection head, and the catalyst ratio can be adjusted from 0.75% to 2.5%.

The **fully pneumatic** automated controls, controlling the number of strokes during injections, recirculation, and more makes the process easier and more efficient. Included features of this system include: Resin Gel Alarm (RGA), Mold Pressure Guard (MPG), Recirculation Package, Gun/TurboAutosprue on/off, and the flush controls. It is also designed to include the optional Pneumatic PV Sensor, Pneumatic AutoCatch and Heater Control.



Patriot™ Megaject Innovator System

The Patriot™ Megaject Innovator Injection System was designed for injecting polyester, vinylester and methacrylate resins and catalyst at controlled pressures. The AutoHead mixes on demand at the injection head, and the catalyst ratio can be adjusted from 0.75% to 2.5%.

The **fully pneumatic** automated controls, controlling the number of strokes during injections, recirculation, and more makes the process easier and more efficient. Included features of this system include: Mould Pressure Guard (MPG), Recirculation Package, Gun/TurboAutosprue on/off, and the flush controls. It is also designed to include the optional Pneumatic PV Sensor, Pneumatic AutoCatch and Heater Control.



Patriot™ Duo 1:1 Silicone System

The Patriot™ Duo 1:1 Silicone System from Magnum Venus Plastech has been specifically designed to mix and dispense multiple 1:1 volumetric materials, making it ideal for producing reusable membranes.

Recognizing a need for such a system, MVP specifically designed the Duo 1:1 Silicone to mix and dispense viscous materials through a gravity feed system that eliminates the need for a ram pump.

Several features of this new system are:

- 1:1 fixed ratio fluid pumps
- Precise Patriot™ metering technology
- 15 gallon A + B polyethylene tanks for gravity feeding.

