Blown Film Internals®

D. R. Joseph, Inc. Blown Film Process Systems & Consulting

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Visit us at NPE 2006

I guess the saying "time flies when you are having fun" must be true because it seems like yesterday that we were all attending the NPE 2003 show in Chicago. Here we are 3 years later getting ready for what is anticipated to be the most attended NPE show in recent history. We would like to cordially invite you to visit our booth **4339** located in the McCormick North building, on the main level. We have been working very hard the past three years to provide value and innovation to our current product line and now offer the "NEW" non-IBC lay flat control system. Please see page 2 for a list of all the products you can see at this year's show. *(Cont. pg. 2)*

Chicago - Not Just a Tradeshow City

Many of you would like to go to the NPE 2006 show in Chicago but just can't find the time to get away from your hectic schedule. Well, maybe you can justify your trip to Chicago as a mini-vacation rather than just a business trip. Not only will you be able to go to the largest plastics show in the world this year, but also get to enjoy many of the other attractions Chicago has to offer. Of course, the primary focus of the trip will still be to visit McCormick Place which is the largest convention and trade show facility in North America. Whatever it might be you will find it at NPE 2006. Discover the machinery and equipment that will add value to your products and increase your competitive standing.

During your visit to NPE you might want to take time out of your busy schedule for some of the other world class attractions Chicago has to offer. The Chicago Waterfront offers 29 miles of scenic shoreline just waiting to be explored. Along the Waterfront is the Navy Pier that offers shopping, dining, and boat tours showcasing the Chicago skyline from Lake Michigan. There are internationally renowned museums, including the Museum of Science and Industry or the Adler Planetarium and Shedd Aquarium. Maybe a ballgame is more appealing. You can visit or go to a Cubs game at the famous Wrigley field or take a tour of the recently remodeled Soldier Field. If you need to find that special something for your family back home, Chicago's Magnificent Mile offers 460 shops that line eight city blocks. If you are looking for just a quiet night out, Chicago offers some to the best known restaurants in the world.

What are you waiting for? Book your trip to Chicago today and make sure you come by and visit the D.R. Joseph, Inc. booth located in the McCormick North building main level # 4339.◆

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NEW!!! Accurately Verify and Control Width Measurements for non-IBC applications

D.R. Joseph, Inc. would like to introduce the non-IBC layflat control unit that will be presented at the show for the very first time. The unit is based on the same proven technology as the patented IS-IBC1® internal bubble cooling control system. The system can be used for monitoring lay flat only or actually controlling the layflat size by using pneumatic controls for adding air to the bubble or dumping air from the bubble. Please stop by our booth for a complete demonstration.

Improve Production Rates, Hold Tighter Lay flat, Reduce Scrap Rates

The IS-IBC1 internal bubble cooling control system has been the product of choice for the past decade when it comes to IBC control systems. The system has been a proven winner among OEM manufacturers and end-user customers alike. The system will once again be on display at NPE 2006. Please come by to see the latest enhancements and value added options that are now included as standard on the unit. The IS-IBC1 system can provide production rate increases from 8-15% over competing IBC systems and 20-35% when upgrading from non-IBC to IBC. Find out just how quickly the IBC system can pay for itself and how it will positively affect your bottom line.

Eliminate Side Seal Failure, Convert Master Rolls into Smaller Rolls

The seal-cut unit was first introduced at the NPE 2003 show. The seal-cut unit is designed to provide a high quality seal that has excellent strength along the seal edge in both the transverse and machine directions. This is accomplished by reversing the process commonly known as slit-seal. Instead of slitting the material and then sealing it, the material is first preheated, then sealed and then cut. This results in a clean seal, even on materials up to 6.0 mil. Please come by our booth to view the seal-cut unit and see the excellent seal quality this machine produces.

Maintain Bubble Stability, Eliminate Roller Marks, and Reduce Heat Transfer from the Bubble

D.R. Joseph, Inc now supplies sizing cages in size ranges from

800-2950 mm (32-116") for the smaller version cages and 3300-5000 mm (129-196") for the larger cages. The sizing cages have special insulated coverings that limit heat transfer from the film and provide soft contact. Two configurations of the soft roll are available.

Both of these options reduce maintenance and cleaning. Please come by our booth to view the aluminum rollers with their special wool and silicone coverings.

Blowers, Variable Speed Drives, Cooling Coils

Getting maximum performance from your extrusion line requires more than a great control system. Without blowers that produce the correct volume to pressure ratios, cooling efficiency and layflat control can suffer. Without efficient variable speed drives, costly energy is being wasted. Without properly sized cooling coils, production rates will suffer during the hot season. D. R. Joseph provides our customers with engineered selections of blowers, cooling coils, and variable speed drives as part of

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our sales process. Of course, we can be your single source for all these components on your next IBC upgrade project. Please come by our booth to learn more about the importance of sizing the proper air moving and cooling equipment.

Please plan to visit us at the McCormick North building main level booth # **4339** to discuss any of your blown film needs. For our existing customers please come by our booth to say hello or discuss any new projects you are considering. For those of you who are not as familiar with D.R. Joseph, Inc. please come by and learn a little more about what we do and how we can help your company succeed in today's challenging marketplace. We look forward to seeing you at the show.◆

Did you know?

How long have you used one version or another of the Windows® operating system and never touched the Windows logo key? Have you ever wondered what that key does? If you're near your computer, try this: press and hold the Window key and then press the letter E. That's the fastest way there is to open an Explorer window no matter what you are doing. Need to find something quick, try Window F. Now try this: open up a couple of your standard programs and then press Window D and see what happens. For those who are interested, here is a link describing all possible short cuts: http://support.microsoft.com/default.aspx?scid=kb;en-us;q126449

Believe it or not, the Window function key has been around since the introduction of Windows 95. When you first got your new computer, your main concern was not learning the subtleties of Windows. Instead, it was learning what it took to get your job done. After becoming proficient with Windows, you are probably more open to investigating the time saving short cuts.

So what does all this have to do with internal bubble cooling and film extrusion? Well, we all know the D.R. Joseph IS-IBC1® system doesn't have a bubble key, but it does have several little known features that can improve the operation of your extrusion line. Let's take a look at what has been included with every system we have sold since 2003:

Bubble break detector - automatically arms, resets and can be interfaced to just about any Programmable Logic Controller or computer.

Layflat deviation alarm can be configured to detect holes when running master tubing rolls.

Health output can be used to verify the IBC system is operating, particularly useful when running in an integrated system environment.

Stable bubble output can be used to coordinate other integrated features on the extrusion line that depend on a stable bubble before starting. For instance, starting the oscillation of the die or haul-off or putting the gravimetric system into automatic only after the bubble becomes stable.

Remote control operation allows you to control every aspect of the IBC system from across the plant, across town or across the world. This function is designed mainly for integration purposes, but is also great to temporarily isolate any portion of field wiring when chasing down intermittent wiring failures.

Multiple monitoring points are supported by the standard Ethernet connection port. Up to ten users can be connected to a single IBC system over a single physical connection.

OEM (Original Equipment Manufacturer) Ingegration allows the IS-IBC1 to be fully integrated into any OEM extrusion line control system. Let your OEM know about this the next time you plan to purchase an extrusion line.

If this article has piqued your interest, come to our booth (#4339) in the North Hall at NPE and we'll show you even more new features that have been loaded into the IBC system.◆

Forms of Payment.

D.R. Joseph, Inc. accepts payment by credit cards. We accept American Express, MasterCard and Visa for spare parts orders up to $5000.00. This is a great way to order those emergency spare parts orders quickly without the hassle of issuing a purchase order. Do not delay - get the parts you need today. ◆

TECH TIP

When D.R. Joseph, Inc. introduced the now patented SealCut™ three years ago, we had no idea that sealing film could be so involved. It certainly looks simple, but as with the IBC we found that mastering the many nuances took a lot of time and effort. We were surprised to find there are a lot of you out there who are fairly new to machine direction sealing as well. Most of you were making custom sized tubing for each product you made.

With the SealCut's capability to handle a much wider range of materials than conventional slit-seal devices, we've seen all sorts of unconventional sealing projects. Of course, the big reason for all this interest is doubling up. The ability to get nearly a 100% increase in yield on smaller extrusion lines is hard to ignore. Let's take a look at some basics of machine direction sealing with the SealCut.

Good Seals 101

The first problem here is the word "good". What is the definition of a good seal? Well, as it turns out, it depends on four things:

1) Application – This is what matters most, yet you'd be surprised how many times we find the film producer is not very knowledgeable as to which seal properties are important, and which properties are not.

2) Material – The material has a huge effect on seal performance. A lot of times we get a material that was never designed to take a machine direction seal.

3) Line Speed – This parameter is the wild card in the sealing process. Everyone knows to produce a seal you must have dwell time to seal a polymer. The appropriate amount of heat has to be applied to the material for enough time to allow the polymer to flow together. Faster line speeds require more heat to be applied to compensate for the reduced dwell time. Even with the SealCut's eleven inch seal path, there is a point where the viscosity of the material becomes the limiting factor. To improve line speed, the composition has to be modified.

4) Good tension control – All machine direction sealing devices require constant tension control to ensure the sealed material stays separated while it is cooling.

Seal Properties – Which Ones Are Important?

Before we discuss seal properties, it is important to restate that the application has the final say as to which seal properties are important. Converting considerations are next, followed by production considerations. Keeping that in mind, let's look at the typical seal properties.

Tear Resistance – tear resistance is very dependent on the material composition. If the material is easy to tear the seal will be easy to tear. If tear resistance is required, the material and process conditions need to be optimized to reduce tear resistance.

Figure 1 - Easy tear material

Figure 2 - Easy tear seal

Figure 3 - Tear resistant material

Figure 4 - Tear resistant seal

Burst Strength - This property is important with air pillows, heavy duty sacks, and any application that requires conformance to a standardized (ASTM) drop test.

Elongation - This property is the ability of the seal to stretch

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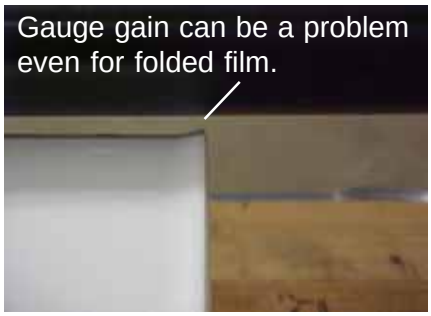
instead of fail under load. A seal can pass the burst test and then fail the elongation test.

Gauge Gain – This is a physical property of the seal's dimension. Gauge gain is the ratio of seal thickness to material thickness. From a practical standpoint, low gauge gain is required when running large rolls. A good gauge gain approaches the gauge gain of the folded material. This is required when running master rolls.



Visibility – This is simply what the seal looks like and in some cases it can include the requirement for the seal to be indistinguishable from the folded side of the material. Generally, a low visibility seal reduces overall seal strength. Depending on the application, this may or may not be a concern.

Getting it Right

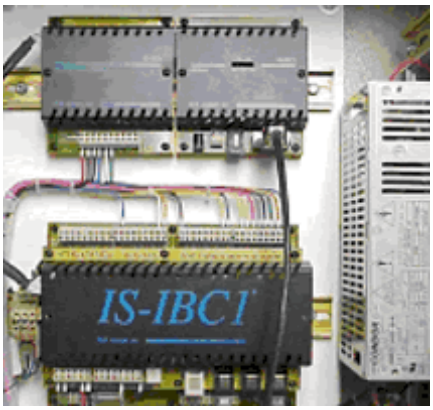
Starting with the application requirements is the best way to succeed with machine direction sealing. Be realistic about what seal properties are required to meet or exceed the customer's requirements. The more seal properties you are trying to combine, the more work you will have to do on the material formulation. Your margin goals will drive the line speed you need to run. Even with the best material formulation, you also need to have good tension control to ensure sealing takes place in a consistent manner. Customers ask us about placement before or after a bag machine. Typically, the most successful installations have the Seal Cut positioned before the bag machine. If there is a device or process that creates variation in the web tension, you may need to add a driven nip device to isolate the tension variation from the SealCut.

Related to tension control is the wrap angle on the entrance and exit bow rolls. The web wrap on the exit bow roll should be at least 60 degrees to ensure the sealed webs stay separated.

There you have it. If you have a potential machine direction sealing project, go to our web site www.drjosephinc.com/quote.htm to download the SealCut configuration form. The form lets us know what you are planning to do and we can start configuring a system for you that will do the job.◆

UPGRADE CORNER

If the inside of your IS-IBC1® controller does not look like this, then you still have the 8 bit controller.



32-bit Processor

The 32 bit controller has been in production since July 2003 and has provided customers with improved operation and more remote visibility of operations. The new processor brings increased production rate and improved layflat control. It also has significantly enhanced remote diagnostics support (quicker repairs).

New features available only on the 32 bit system include software updates over the phone or Internet, remote sensor management, Ethernet connectivity, power supply monitoring, 100% remote control which greatly eases troubleshooting of intermittent field wiring issues. Our upgrade offer of $2000.00 exchange credit on the old controller has been extended through the end of 2006.

For a complete list of all available upgrades, visit our website www.drj1.com\corner.htm◆

Who's Who at DRJ?

We have made a few changes since our last publication:

President

Daniel Joseph - Ext. 11

Sales Department

Sales & Marketing Manager
Trevor Grossklaus - Ext. 18
Spare Parts / Sales Assistant
Tamara Handley - Ext. 25

Production Department

Production Manager
Perry Champange - Ext. 12
Shipping/Receiving
Ely Leos - Ext. 17

Service Department

Customer Service
Beth Bagby - Ext. 10
Technical Support
Gary Wielenga - Ext. 26◆

The Last Word

There's still a lot to do this year and I'm glad many of you are working on ways to make your company more innovative and unique in its capabilities. It's a mandatory objective; staying competitive in the marketplace. It is, however, an objective that is made a lot easier if you've embraced the continuous process of innovation.

Innovation is more than coming up with a new idea and getting it to market. I prefer to think of it as a continuous process; developing small idea after small idea. Avoiding stops and starts keeps the process moving and vibrant with new ideas. In effect, innovating is about tool making. Not hand tools, but tools that can take the form of anything from a more efficient procedure or software to a breakthrough in polymer science. Each innovation is a possible tool that can be used to meet a customer requirement.

Start Innovating

The best time to start innovating is now. Pick an area where you spend most of your time. For instance, the inner workings of product development is a great place to innovate. Innovations at this level will help reduce your time to market. As you reduce the time-to-market overhead, margins will improve. The company's confidence to tackle more difficult tasks will improve. As long as modest steps are taken, the company's consistent growth will be less dependent on big bang projects.

Right Place, Right Time

Timing plays a key part in the usefulness of an innovation. Innovations not ready for market acceptance fall into three categories:

1) **Innovation ahead of it's time** – Texas Instruments had these types of innovations during the 70s and 80s . TI's offering was the superior computer, but technical and marketing difficulties resulted in lackluster sales and eventually the product line was sold.

2) **Innovation without a problem** - regarding these types of innovations, I like to say this, "Just because you can, doesn't mean you should." Enough said.

3) **Innovation dependent on other innovations** – this type of innovation requires additional innovations to be useful. This was partially the reason TI's TI99/4A was not successful.

Build the Solution Sets

As you can see, for an innovation to be truly useful in the market, it has to be properly matched with the customer's requirements. Any dependent innovations must also be completed. Perhaps your company has plenty of good ideas but very few of them get off the ground. I believe this problem is caused by the lack of a *master innovator;* a person whose job it is to use the company's many innovations to create a group of product solution sets. These solution sets are incorporated into products that are then matched to customer requirements. I know you must be thinking that I have that backwards. Surely the customer comes in and states their requirements and stuff is innovated to meet their requirements. That is how product development works, but some of the best innovations are developed without a specific customer requirement in mind.

Why all this effort?

It's payoff time. Your company's ability to incorporate innovations into the marketing, product development, sales and service processes will become part of what the company is known for. New products that come out will be expected to feature the same innovations as previous products. For instance, upgraded service features for product A will undoubtedly be expected on product B. This expectation is a powerful marketing tool as it can be leveraged against the competition's offerings.

The innovative capabilities become the edge that gets your company out of the commodity business and into the custom business where margins are more satisfying. By the way, this can occur, even if you are selling a commodity. If you don't believe me, take a look at how well Dell Inc. has done in the commodity computer business. Their key to success; innovate everything. ◆

Blown Film Internals® is published annually by D. R. Joseph, Inc., 2125 S. Great Southwest Parkway, Suite 101, Grand Prairie, TX USA Email: admin@drjosephinc.com, Phone +1 (972) 641-7711 or (800) 767-4470, Fax +1 (972) 641-8747 Website: www.drj1.com. DRJ manufactures the internal bubble cooling and film sealing systems for blown film producers. President: Daniel Joseph; Managing Editor: Tamara Handley