Blown Film Internals®

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

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New Ideas: The Core to Being Competitive

New ideas or innovations are the core of what moves all companies along in the competitive stream of the marketplace. The trouble with new ideas is the inherent delay to payback time. It simply takes too long (relative to financial goals) to mature an idea into payback. Most of us tune out raw ideas and instead look for the mature ones simply because the payback is more immediate. The trouble with only skimming for mature ideas is that the payback potential is lowered by the fact that your competition is also implementing the same idea. The real skill is picking which ideas can provide significant competitive advantage before they become trends. Those that trail blaze these ideas into fruition have the biggest advantage over the competition.

The concept of embracing new ideas is the theme of this issue of Blown Film Internals. Look with us at new ways to manage your production environment and your company. Some of the ideas pertain specifically to equipment we provide. Other ideas will provide significant benefits when applied to other devices or processes.

The Seal Cut is the first example of a new idea still maturing. Those who have already embraced the technology are way ahead of their competitors in terms of seal quality and strength. The Seal Cut is proving itself to be of great value, particularly when running film thicknesses greater than 2.5 mil. The beauty of this machine is its ability to run light and heavy gauges with exceptional strength and quality. (See the article on page 2).

Enhanced customer support is another area of new ideas. As our customer base develops, we are finding more and more people who are incorporating our remote diagnostic capabilities into their standard operating procedures. Providing this support in a timely manner requires significant resources from our organization, so we are developing the Paid Advanced Support Services (PASS) program. This program will formalize a service that we have been providing for several years. Read the PASS article on page 4 to find out more.

Don't think we have lost our focus with all of these new developments - we are still internal bubble cooling guys at heart. We are just applying our "When You Need Solutions... Not Just Answers" motto to another facet of film production. Both the IBC and the new Seal Cut have been upgraded to make them easier to use and more productive in your environment. The upgrade corner (page 5) keeps you informed about the new upgrades available, and starting this month, all possible upgrades are listed on our web site. Simply go to www.drj1.com and click on upgrades link in the middle of the page. If you are unable to find the link, enter www.drj1.com/ugprades.htm into your browser to see the page.

All of us at DRJ hope you have a great summer and that your families are doing well. Think about some of the ideas we have presented here and give us a call to begin the process of improving your organization's performance in a very competitive marketplace. ◆

Ethernet is here!

All of our IBC controllers and the latest versions of IBC Viewer now support Ethernet. This opens new doors for system integrators and remote trouble shooting options. Our next issue of BFI will have information on how to leverage this Internet technology to best benefit your organization. ◆

Table of Contents

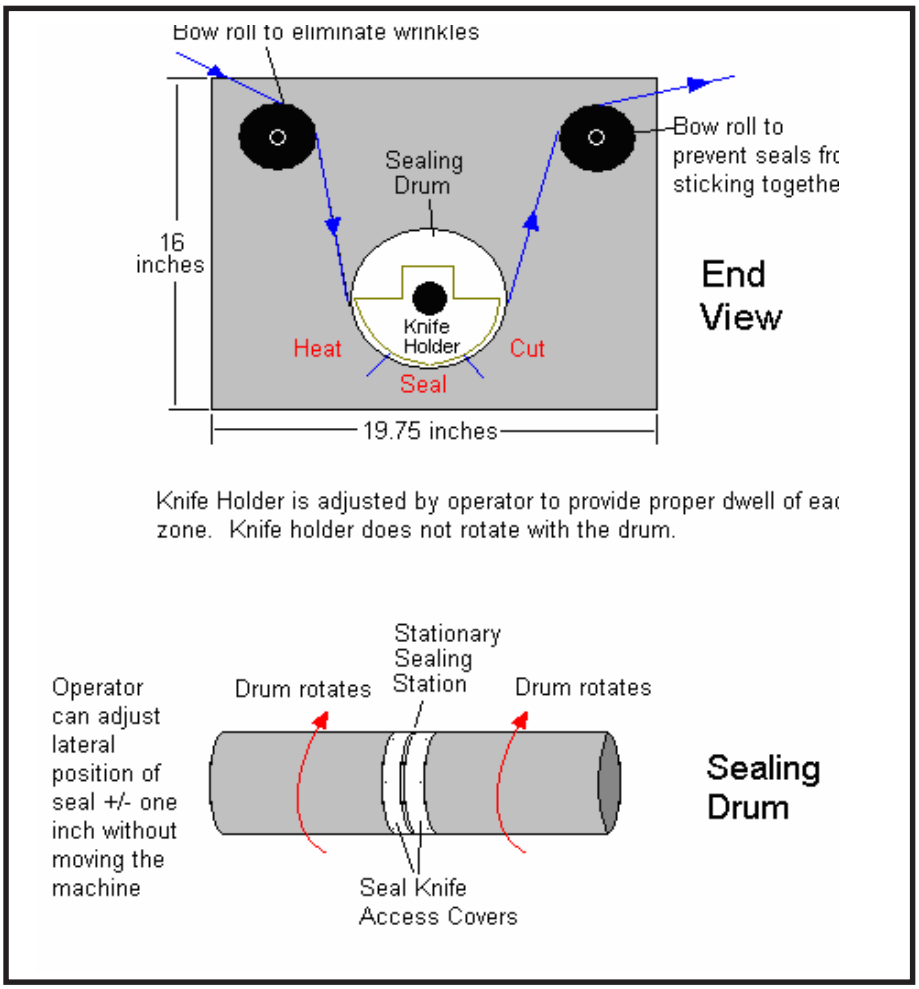
New Seal Cut Technology – Part II

In our last issue of Blown Film Internals we introduced you to the new Seal Cut system. In this issue we want to provide you with more information to allow a better assessment of this innovative, patent pending technology. To provide a quick overview, the Seal Cut reverses 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 split. This results in a clean seal, even on materials up to 6.0 mil. The greatest interest so far centers on the ability to provide a quality seal on materials over 2.5 mil.

For most materials, we use a significantly lower sealing temperature than the hot knife systems. For instance, a hot knife is usually run between 700 and 900 degrees F. The Seal Cut can be run at about half that temperature. For materials with low seal capacity (like 100% low density), we use more heat than would be required for materials containing linear low density or metallocene. The seal strength is excellent in both the transverse and machine directions. The unit can seal 100% reclaim material. Materials that do not seal well with the Seal Cut unit are polystyrene, polypropylene and film that is biaxially oriented.

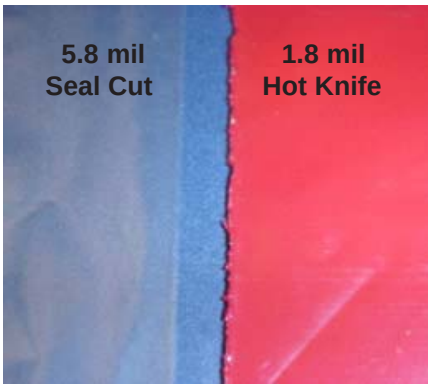
Film Path Through the Unit

We have received a lot of questions about the film path and how the sealing actually takes place. The diagram above shows how the film goes through the unit and gives a general idea of the size of the unit. The seal path is about eleven inches long, making the sealing process more gradual and less of a shock to the film. Sealing takes place through a process of preheating, sealing and finally cutting as shown by the three zones. The frame is designed so it can be installed in almost any orientation. Customers have built rolling supports so they can move the unit from line to line, or they have installed the unit permanently.



Results

Compare the seal edge of 5.8 mil, 100% recycled material produced by the Seal Cut to the seal edge of 1.8 mil material produced by the hot knife slit seal process. The visible quality is significantly improved and the seal strength is excellent in terms of burst, zipper tear, and stretch.



How to See Results with Your Film

If you are interested in seeing how the process will work for your material, we now have a lab in which we can run samples from your material.

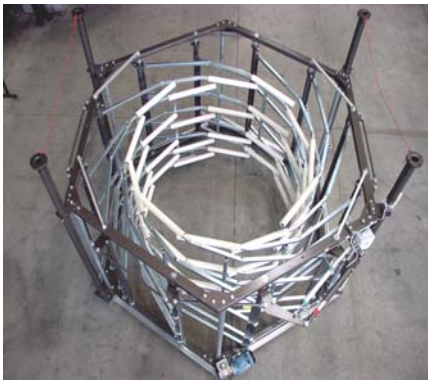
Here are the specifications for the rolls we need. Please send two rolls of each material you want to trial. Maximum roll width is 19 inches. Core size is 3 inches. Maximum roll diameter is 12 inches. If you cannot produce tubing that is 19 inches or less, you can submit c-folded film on a roll for testing. Please do not send single wound sheeting.

Send the rolls to:
D.R. Joseph, Inc.
2125 S. Great Southwest Pkwy, #101
Grand Prairie, TX 75051
Attn: Perry Champange

It is also important that we receive the following information for each sample you send to us:

- Production Line Speed
- Average Melt Temperature
- General Material Makeup
- Seal Criteria
  - Burst
  - Zipper Tear
  - Strain

Big Bubbles No Troubles



A sizing cage is an extremely important component of a blown film line. It is just as important to have a sizing cage for very large bubbles as it is to have one for smaller bubbles, but most companies do not use a sizing cage when running extremely large bubbles. The sizing cages are not used on larger bubbles for several different reasons.

The first reason sizing cages are generally not used on large bubbles is the notion that layflat tolerances are not as important on large bubble diameters. Due to the large amount of air volume you are trying to control, it is true that you are not going to hold as tight a layflat on 200" (5080mm) bubble as you are a 20"(508mm) layflat bubble. However, this is the very reason you want a sizing cage for these larger applications. The amount of air exchange that is transferred at a given time causes bubble movement which in turn causes more layflat variation. When using a sizing cage, you reduce the amount of bubble movement and layflat variation, which results in running less material or scrap and ultimately results in a better bottom line.

The second reason is selection. In the past, there was only a limited selection of large cage sizes and the ones offered were extremely expensive. The good news is you can now get a sizing cage for any size bubble at a very reasonable price and you can order it directly from DRJ. Up until now DRJ only offered a sizing cage up to 108" (2750mm) total layflat. You can now purchase a sizing cage up to 205" (5210mm) total layflat.

A very important consideration in using a sizing cage for your larger bubbles is you can utilize all the features on the D.R. Joseph IS-IBC1 internal bubble cooling control system. The IS-IBC1 system comes with 1,2 or 4 IBC sensors that all mount and move with the sizing cage. Sensor mounting brackets are supplied for easy installation and all maintain a constant distance from the bubble. The IS-IBC1 system can also be equipped with the optional automatic cage control feature. This feature allows the operator to type in the layflat target they want to run and the IS-IBC1 system automatically sizes the cage to the correct layflat size.

All sizing cages are supplied with motorized vertical and horizontal adjustment, and manual "X-Y" axis adjustment for centering the bubble over the die. Each level of the larger sizing cages are packaged in two pieces and will fit in a single shipping container to reduce shipping costs, uncrating and installation time (refer to picture below). The larger cages come with 4-5 levels with 12 roll arms on each level.

The new roll arm consists of a roll-insulating sock to ensure no film marks are created by the rollers. The surface of the roll combined with very low rotational friction eliminates pinching, scratching, or any damage to the film quality. The socks can be easily replaced or washed and reused. One set of replacement socks is supplied with each sizing cage.

If you are interested in a new sizing cage for any size application, please contact us for a quotation. ◆

In the Moment

Sometimes it is necessary to get objective feedback from your customers in order to improve your company's performance. The challenge is that no one wants to do a survey, particularly an unannounced or lengthy one. If you do get them to participate, you have to wonder, "How useful will responses be from someone who does not want to be bothered with this survey in the first place?"

There is a way to get solid feedback from your customers without them thinking the word "survey." The best time to talk to them is right after you have done something good for them. When the customer is feeling good about their relationship with you, they are more apt to answer a focused question or two. You will find that your best responses will come from questions that pertain to other departments within your organization. In other words, don't ask about their perceptions of your department. Someone from another department will have to do that at another "in the moment" time. Instead ask them about one or two other departments. This will do a lot toward accomplishing the goals of knowing what is really going on inside the customer's mind. Give it a try and you might be surprised with what you learn about your organization. ◆

Paid Advanced Support Service

There has been more than one occasion in which we have visited a customer to install a new machine only for us to find that another machine is running at a less than the optimum rate. Sometimes the customer notices the drop in rate but generally they are not certain of what to do to correct the problem. Some think the operators are at fault and others think the control system is not functioning properly. What really ends up to be irritating to our customers is how little time it takes us to solve these types of problems, as it is almost always an airflow issue. Things like clogged filters, clogged or broken hoses, outside air issues (see Tech Tip article) or resin build up in the air passages can all adversely affect the production rate. The problem of course, is all that lost production capacity means more pressure on the production department. It would be very beneficial to every customer to keep their lines running at the optimal rate at all times.

One approach to keeping production rates up is educating the customer. This includes on site operator and technician training, providing documentation in several formats, making technical information available on web sites and putting self-diagnosis tools right in the machine. DRJ has been working with this model of customer support for more than seven years now and to be frank, we have found that the actual benefit to the customer has been quite limited. The reason is two-fold. First, customers have real difficulty in deciding if they can spare downtime to restore the higher production rate. Part of this stems from the lack of a good action plan, which then leads to an open-ended time estimate. Production managers cannot support open-ended downtime on a machine that is running, even if it is running slower than normal.

The second reason is really the root cause of the first problem; the customer's troubleshooting ability is hampered by the fact that the machine has been reliable. The irony of this situation is technicians are very good at fixing machines that are always failing. Even annual retraining has limited effect if the occasion to use the training is limited to one or two times per year.

This problem has led to our development of the PASS program. The idea behind the program is that DRJ, either directly or through trained independent technicians, will act as a partner with our customers to keep every IBC and Seal-Cut system running optimally. Our job is to catch slipping performance before it has an adverse affect on production capacity. We plan to do this through a variety of methods that vary in scope and cost. For instance, a scheduled onsite review of each system is the most comprehensive method to ensure each machine is configured and running properly. A more economic method for IBC systems is a periodic data connection to each machine. This allows us to monitor and account for about 80 percent of issues that affect the machine, but at about 20% of the cost of an onsite visit. With this option we can email management reports that show how well the machine was utilized along with any exceptions or problems that were found. The report can also point out any changes made to the system configuration. We are also looking into providing periodic emails to alert maintenance personnel when preventative maintenance tasks are due. Another reporting option is to build a secure web page for each customer so they can view the maintenance activity for each of their machines via the internet.

Regardless of what method the customers select, there are definite benefits to signing up for the program. Reduced labor and spare parts costs and free software updates are provided for every machine covered by the program. In addition, we will be looking at providing extended hours phone support if we get sufficient interest in the PASS program. The only obligation the customer has is to keep their PASS contract paid up, make the machine available for any scheduled onsite preventative maintenance, and keep a phone line or Ethernet connection available.

With the advent of the PASS program, the current program of unlimited free logins will be changed to a 90 day free login period starting with the first request by the customer for each machine. After the 90 day period expires, the customer needs to select the appropriate PASS option or they can elect to pay a flat fee for each log in request.

It is our objective to keep our customer's competitive progress steady and not going in circles. That is what the PASS program is all about. Because we are still in the development phase, we are looking for feedback on what will make the program the best value for our customers. If you have a specific idea please give us a call or send us an email. Call us at 800-767-4470 or email us at pass@drjoseph.com ◆

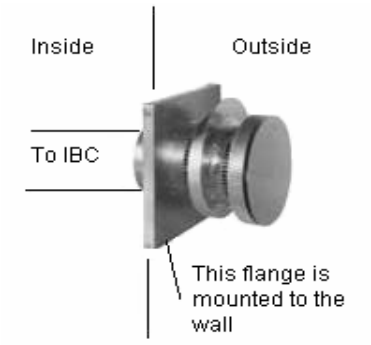
TECH TIP

Outside Winds Affect Bubble Stability

When ducting the inlet and outlet blowers for an IBC system to the outside, you must also consider how wind effects can disturb the airflow in and out of the bubble. These types of problems are most noticeable in the winter when the plant is totally closed, but can occur at any time there are large gusts of wind. Customers most often report a sudden loss in bubble stability that lasts for several seconds and then is gone. Others report an ongoing, high-speed layflat variation that seems to have a random pattern. The problem is most often caused by a wind gust to the inlet blower, although it can have an opposite effect on the outlet blower as well. The gust provides a temporary supercharging effect, making the blower more efficient. Of course, the spike in efficiency is not entirely muted by the IBC system because of the instant appearance of a change in air flow. The result is the bubble suddenly grows in size when the gust starts and drops in size when the gust relents.

Verify the Problem

The easiest way to verify the instability is coming from wind effects is to disconnect the inlet and outlet blowers from the outside. This means the inlet blower is drawing air from inside the building and the outlet blower is dumping the hot air inside the building. Although putting hot air inside the building is not a long term solution, for the short duration of the test, it will pose no significant problems.

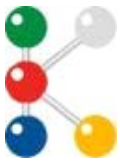


Solution

If disconnecting the blowers from the outside eliminates the variation problem, the solution might be installing end caps on the outside portion of the IBC ducting. There are two styles, vertical and horizontal. If your ducts go out the roof of the building, select the vertical end caps. Likewise, if the ducts go out a wall of the building, select the horizontal end caps.

The function of these caps is to disrupt the wind effects so there is no change in the back pressure in the duct when the wind blows. The solutions shown are for residential fireplaces, but the principle is the same for any outside duct. If you find you have a problem with wind effects, contact your HVAC vendor and ask them to provide the appropriate end caps for your installation. As always if you have any questions, give us a call here at D.R. Joseph. ◆

The K-Show



The K-Show in Dusseldorf, Germany is upon us once again. The show dates are from October 20-27th. D.R. Joseph, Inc. will have an IS-IBC1 internal bubble cooling control system running at the show. Dan Joseph will be at the majority of the show and will be available by an appointment only. If you would like to see the IS-IBC1 system in action or schedule an appointment with Dan Joseph, please feel free to send an e-mail to danielj@drjosephinc.com or call 972-641-7711. We look forward to seeing you at the show. ◆

UPGRADE CORNER

NEW!

New 32-bit Processor

We are introducing an incentive program for all customers who have the old style processors. For a limited time we will provide a $2000.00 credit when any old-style processor is upgraded to the new 32 bit processor. The new processor brings increased production rate and improved layflat control. It also has significantly enhanced remote diagnostics support (quicker repairs).

PREVIOUS UPGRADES

The ultrasonic sensors for the MC1 measurement controller (above left) and the BBH series proportional valve (below left) are no longer available.

The good news is that we have an excellent replacement path for both components. You can upgrade your current MC1 measurement controller with the new PP4 position processor which supports the latest in ultrasonic technology. You can also upgrade the BBH proportional valve to the PA340 proportional valve. The PA340 has an extended cycle life and 30% faster response time. For a complete list of all our available upgrades, please visit our website at www.drj1.com/upgrades.htm. ◆

The Last Word

Work on the Elephants, not the Ants!

If you are getting ready to buy a new line or upgrade an existing one, you obviously need to produce a quality product with enough margin to cover your expenses and make a profit. When comparing IBC systems for instance, you might think that a lower priced version will save you money. It may seem easy to demand lower pricing from your machine supplier and get it, but for every penny you demand, you are losing something. Sometimes the pricing pressure produces a new efficiency, but more likely, the vendor is going to reduce the performance of some element they feel is unimportant in order to meet your price target. How do you know this element is not important to your customer? By asking vendors to lower their prices you might be compromising the quality that will actually save you money in the long term. Let's take a look at how shopping for price is really like focusing on the ants when you should be addressing the elephants (how to get the best processing tool for your resin).

Save Money, Lose Safety Margin

In basic terms, safety margin is the extra capacity put into an element of a product to ensure that under worst case conditions, the element does not fail. When there is excessive pressure to cut costs, vendors often resort to shrinking the safety margin. The reason for this behavior is simple. The effects of a reduced safety margin are hidden from view for a large portion of the designed use. It is only under worst case conditions that a reduced safety margin becomes apparent. Perhaps you can live with that, but are you sure your customers can? Make sure you know how reduced safety margins will affect your customer before you agree to the tempting cost savings. Be willing to ask the question, "What did I give up to get this lower price?"

Where is the Service?

Another area where vendors can reduce costs is in service. This cost reduction does not have an immediate effect on the product. As machine prices go down, service capability also drops, meaning that even if a failure is covered by the warranty, the amount of down time will increase because of delays in getting a qualified technician to work on your machine. The last time I checked, there was no "blown film technical support" section in the yellow pages. Good technical support personnel are hard to find and forcing your vendor to give you a lower price on the machine can have an effect on their ability to provide you with timely service. Ask the question, "What levels of service can I expect at this price?"

The Accounting Shuffle

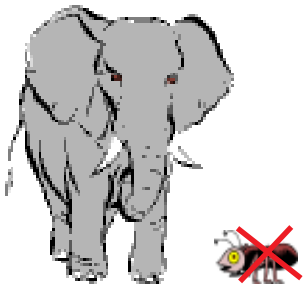
I hear customers talk about paying for different things from different accounts, but eventually every account falls through to the bottom line. If a $150,000 savings in capital equipment expenditure results in increasing maintenance costs, your company loses no matter how it is totaled. The question you have to ask yourself is this: "Am I really saving money or did I just shuffle my costs to someone else's budget?" The result of this action is the same as cost hiding or using a pyramid scheme. Eventually, the costs catch up to you. Just ask the guys at ENRON.

Keep Wowing Your Customers

Dealing with competitive pressures is not just about the machine and the resin. You need to keep wowing your customers. Keep up with what product elements are really important to your customer and do not let anything stop you from improving those elements. If you need to spend money on research and development, spend the money. If you do not have the means to control a critical element during production, make sure your next machine is capable of controlling it. If downtime is a real problem for you, make sure your suppliers can provide the quick service you need. Do not be afraid to pay for good service. The value of having fast service for your machine is priceless when your customer's deadline is staring you in the face.

Concentrate on the Elephants

If you are concentrating on machinery costs because resin prices have you in a pinch, you have to remember that the resin, machine function and machine reliability constitute the elephant. The machine cost is the ant. A good machine can do a tremendous amount of work for your organization. A low price may make it easier to get the machine but it may make it harder for your organization to keep your best customers; who by the way pay most of your bills. One final thing, you only pay once for a machine; from then on it either pays you or steals from you every minute of every day for a very, very long time. ◆



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. Don't delay – get the parts you need today. ◆

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Email: admin@drjosephinc.com, Telephone (972) 641-7711 or (800) 767-4470, Fax (972) 641-8747 Website: www.drj1.com. D. R. Joseph, Inc. manufactures the internal bubble cooling and film sealing systems for blown film producers. President: Daniel Joseph; Managing Editor: Tamara Handley