

Blown Film Internals

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

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Happy Holidays!

Happy Holidays from all of us at D.R. Joseph! We hope that you and your families have a wonderful holiday season and a Happy New Year. We are sorry you haven't heard from us earlier, as normally we are sending out Christmas cards this time of year. We decided to double up and send you both a holiday greeting and a newsletter.

A lot has happened since our last newsletter. Most significant is our new strategic alliance with Kundig Control Systems of Ruti, Switzerland. Both companies share nearly the same customers but provide different product lines. Believe it or not, our temperament is quite similar, so we get along quite well. We've implemented a state of the art ERP system to support their North American service parts and service operations and have already significantly improved their service levels. You can read more about it in the article "Kundig International."

We reorganized our personnel to concentrate more energy on sales and customer service support. We now have a total of four people dedicated to these tasks (as compared to one dedicated person before). We've added a new customer service department to increase quality and speed of service and we continue to enhance our telesupport capability. Check out the Who's Who section at the back of the newsletter to catch up on our personnel changes.

We've added new features to our web site, including a technical support knowledgebase that is updated regularly, a FAQ section for new customers and a section to let you know what conferences or trade shows we will be attending. We've enhanced our web technical documentation which now includes frequency drive interface drawings, and operator and system manuals. Check out the changes to our web site at www.drj1.com.

D. R. Joseph, Inc. was featured on a television news show that aired

November 22 on the AmericanLife Television Network (a cable channel). It was a half-hour news format program hosted by William Shatner that covered our company and our industry. You can read about it in, "Heartbeat of America" where there are also instructions on how you can order a free DVD of the program.

We now have two new features for the IBC System. We have incorporated a new Kundig interface which allows the integration of your Kundig bar layflat control reading with our ISIBC1 internal bubble cooling (IBC) system. We have also created a solution for supplemental cage control which gives you the ability to control both the upper and lower sizing cages. (See article "New Options for the IBC").

We look forward to sharing these solutions with you in more detail as you read this newsletter. We hope to see you at the upcoming events including the Advances in Blown Film Conference in December, the Resin to Revenue Symposium in January and the NPE Conference in June. ♦

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Kundig International

In mid 2004, Kundig Control Systems approached D.R. Joseph, Inc. regarding the handling of their spare parts and phone support operations for North America (Canada, United States and Mexico). In August of 2004, the alliance was in place and in March of 2005 we were in full swing. While some of Kundig's customers were not initially happy about DRJ handling their service issues, it wasn't long before their mind was changed as we made sure that Kundig customers received the same level of support that DRJ customers receive.

Kundig International, Inc. of Grand Prairie, Texas now provides a complete line of service parts for FE-6, FE-7, K-100, and KNC-200 product lines. If you need a service part or technical support, you simply call 972-352-5311, Ext. 25 and Tamara Handley will take care of you.

If we don't have the part in stock, we can get it shipped in from Switzerland in a day or two. If you need to inquire about a new Kundig project, call the same number, select extension 18 and Trevor Grossklaus will get you a quote and coordinate your project.

If you have Kundig equipment that needs servicing and you are concerned about the details involved with sending it to Switzerland for repair... forget about it! Send the parts to Kundig International and we will take care of exporting and importing your repair.

One other thing that has come out of the Kundig / D.R. Joseph alliance is that DRJ will be offering integration options that allow our equipment to communicate and process data from Kundig devices. You can read more about this in the article "New Options for the IBC Control System". If you have any questions about who to contact or where to send parts, please give us a call. We'll be glad to help you. ♦

New Customer Care Department

Keeping our customers happy and making sure their DRJ equipment continues to run at peak performance has always been our top priority. We are constantly striving to come up with new ways to give you better service in a professional and responsive manner.

In order to take care of our ever growing customer base and the hundreds of DRJ products that are currently in the field, we have decided to implement a new Customer Care Department. As a result, we would like to introduce two new employees who have joined the DRJ team who will be responsible for handling your technical support needs.



Stacy Ellsworth is our new customer care representative and has been involved in the customer service industry for 11 years. She is handling all Paid Advance Support Service (PASS) setups, questions and service inquiries. Stacy coordinates all service inquiries, material returns, and repairs. In short, she will make sure that all of your service requests are handled properly.

The second new member to our team is Gary Wielenga. Gary comes to DRJ from the telecommunications and semi-conductor industry and has 20 years experience as a service technician. He will be happy to assist with all your technical service and troubleshooting needs. ♦

Come See Us

Please come visit us at the following upcoming events:



Advances in Blown Film Conference (December 7-8th, 2005) This seminar is an intensive 2-day program devoted to technology developments in blown film. Learn how to extrude better film with increased line speeds at a reduced cost! Daniel Joseph will be speaking on "Maintaining Peak IBC Performance".



Resin to Revenue Symposium (January 24-26th, 2006) The Resin to Revenue symposium is the only technical symposium dedicated exclusively to the operations and materials in the process of Blown Film. Please come see Dan Joseph speak on "New Capabilities for Internal Bubble Cooling Systems".



NPE 2006 (June 19-23rd) D.R. Joseph, Inc. will be exhibiting once again at the NPE 2006 show in Chicago, IL. Please come by and visit our **Booth # 4339** to see all the latest enhancements in IBC control technologies. We will also have our seal-cut sealing device on display at the show. Please include D.R. Joseph, Inc. on your list of exhibitors to visit during your stay. We look forward to seeing you there. ♦

Signed up for PASS?

Paid Advance Support Service (PASS) has been in effect now for nearly a year. Many of you have realized the benefits to this program and have signed up. For those of you who are still hesitant, we would like to remind you what you receive when you sign up for PASS Connect.



- Unlimited telephone access to technical support during business hours.
- Unlimited direct connect log ins via modem by our technicians during business hours.
- After hours access for emergency product assistance when your critical operations are affected. Calls will be responded to within 2 hours.
- Free Software Updates.
- 5% discount on all on-site service, spare parts, and upgrades.
- 5% discount on PASS renewals.
- Discounts on Unattended Monitoring.
- Access to KnowledgeBase on the service section of our website.
- Email Query Submission – Ask a question by email.
- Subscription to Blown Film Internals Newsletter.

Being a PASS member can also be helpful when you need technical support quickly. You don't have to fish around for a purchase order or a credit card because you are all ready covered. For those not signed up on PASS, after the one year warranty period on new IBC systems

has expired, you can purchase Pre-Paid hours in advance (no expiration) or you can give us a PO or a credit card to cover the technical support inquiry. There is no discount on spare parts, upgrades or on-site service unless you are a PASS Connect Member. ♦

Stocking Stuffers

D.R. Joseph has a variety of small items priced under \$500 that are perfect for your year end budget purchases.

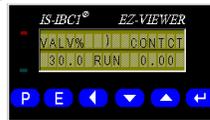
The **Laser Thermometer** uses infrared technology to measure the temperature of materials up close or from a distance. The laser thermometer assists in quickly locating the frostline on a blown film bubble.



Blown Film Extrusion is a technical handbook for beginners and experienced users. The easy to read

explanations of setups, trouble areas and how to read bubble instabilities make this book a must have for every company's library. Also available in Spanish

The **EZ-Viewer** is a user friendly maintenance interface that allows instant and easy access to the IS-IBC1 setup and control functions in standard and blower balance systems.



IBC Viewer is diagnostics software for troubleshooting, calibration, and

system setup for the IS-IBC1 system.

For more information on these items, please visit our site at www.drjosephinc.com/diag.htm ♦

Heart Beat of America

You never know who is watching you, and for any company it is always important to work hard to maintain a professional image. Several months ago, our web site caught the eye of a television news program production company from California. This production company was looking for potential candidates for their TV show and after four interviews they decided to do a program on D. R. Joseph, Inc. While you may not have heard of their TV show, **Heart Beat of America**, you most certainly have heard of the people who make it possible. William Shatner (from **Star Trek** and now **Boston Legal**), hosts the show, Bert Tenzer (most well know for his production of **The Tonight Show** with Johnny Carson), produces the show and Doug Llewellyn (best known as the host of **The People's Court** the forerunner of many of today's popular court television shows) does the on-camera interview.



The TV program about D. R. Joseph, Inc. aired on the AmericanLife TV Network, November 22, 2005 at 9:00 am EST. Since this is hardly a convenient time for anyone to be at home watching television, we have made arrangements to have the program copied to a DVD. If you are interested in seeing the show, you can request a free copy of the DVD either by going to our website: www.drj1.com/dvd.htm or by filling in the request form included with this newsletter and checking the box "FREE DVD" After viewing it, let us know what you think! ♦

New Options for the IBC Control System

Kundig Integration and Layflat Calibration

Customers continue to look to DRJ to provide innovative solutions, in particular, for the task of true auto start and operation of a blown film extrusion line. The Kundig FE-7 layflat bar integration feature provides the customer with an accurate means to calibrate the IS-IBC1® layflat control system. This feature provides several advantages over our standard layflat control feature.

It first eliminates the need to manually measure the flat width. For bubbles over 72 inches (or over 2 meters) in layflat, this step normally requires two people to measure the web. Next, it means that the FE-7 can be placed down near the winder where final layflat is the most accurate. Remember, extensible films lose size as it traverses down the tower due to tension effects. Finally, it means that size management is now absolutely accurate. Data from FE-7 is stored in the IS-IBC1 which means that data collection systems can use the data for quality control purposes.

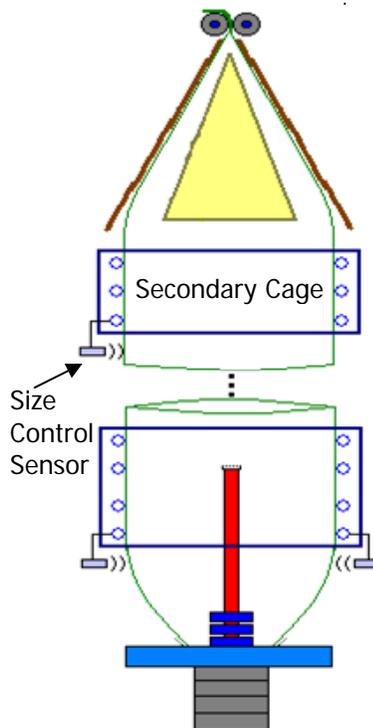
In addition to the measurement data, we also store status information about the FE-7 which means DRJ is able to provide telesupport on all Kundig devices connected to the IBC system. This new feature is available on any 32 bit ISIBC1 that has the color touch screen interface.

Secondary Cage Control

Another new feature is the secondary sizing cage control. The secondary sizing cage is used to stabilize the bubble as it enters the collapsing frames and is typically used on tall towers or in cases where critical centering is required before the film enters the collapsing frame.

The reason a control system is important for this cage is that the operator cannot physically see the cage in order to position it without the use of dual operator controls (controls located both downstairs and upstairs).

By adding the secondary sizing cage controller to the ISIBC1 system customers don't have to even think about the secondary cage. The system keeps the cage away from the bubble until it is stabilized and then holds the bubble with the prescribed pressure automatically. If the operator changes size, the auto cage control system communicates to the secondary cage system to prepare for the size change by maintaining a safe distance from the bubble until the size change is complete. After the size change is complete, the system reverts to holding the bubble as mentioned earlier.



Secondary Cage Controller

Because access to the secondary cage can be difficult, we added several convenient features that eliminate the need for precise sensor positioning or cage speed calibration. We also added sensor fault detection and automatic diagnostics as we have on all the sensors used on the

IS-IBC1®. The secondary cage feature is available on any 32 bit ISIBC1 controller with automatic cage control. If you have an 8 bit system, don't worry, we can upgrade it to the 32 bit controller.

For additional information on the Kundig integration and auto layflat calibration, or supplemental cage control you can contact our office (ask for Trevor) or visit our web site at www.drj1.com.

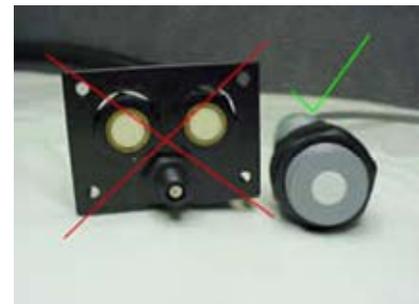
UPGRADE CORNER

These are not new upgrades, but both are very important to the optimum performance of your ISIBC1 system. Remember the old style sensors and proportional valve are no longer available and the upgrade units are 100% compatible with your existing system.

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



PA340 Proportional Valve – 30% faster than the 2nd Generation BBH series, provides easier startups, and is less expensive than the BBH series valves.



Digital Ultrasonic Sensors - More power, easy to install and compatible with all systems. Ask for the PP4 upgrade package.

TECH TIP

Doing IBC Ducting Right

Ducting is probably the least thought about component of an IBC system. While most will focus on the control system when things are not going well, the integrity of the ducting is more often the cause of poor IBC performance. To confirm this, we decided to do a study of over 1000 service incidents to see what causes the most problems. What we found more than confirmed our suspicions. Ducting failure was the highest ranked cause of failure for bubble stability problems by more than 2 to 1.

What sort of ducting problems did we find to be most problematic?

- 1) Leaking joints
- 2) Leaking seams
- 3) Over use of flexible ducting
- 4) Accumulation of oil residue in large ducts
- 5) Accumulation of hardened residue in the small die exhaust pipes

For the first three problems, the main issue is the original ducting installation. A commonly overlooked consideration when planning an IBC ducting installation is the high pressure and vacuum the ducting must withstand. Typical IBC ducting installations must be able to withstand static pressures and vacuums of up to 50 inches of water column without leaking or collapsing.

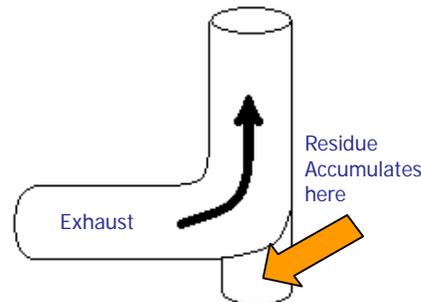
If a Heating Ventilation and Cooling (HVAC) contractor is hired to do the installation, their standard installation will not handle the high pressures or vacuums. The best advise you can give to your ducting contractor is to tell him the pressures and vacuums involved, tell him the duct has to be water proof, and tell him any use of flexible ducting should be limited to short, straight runs. If you provide them with this

information, they will select either PVC or welded seam ducting material. Schedule 40 PVC is always good for the supply run. If you have long unsupported horizontal runs for the exhaust, it may be a good idea to install Schedule 80 PVC for those cases.



Excellent Ducting Installation

The accumulation of oil residues cannot be avoided completely, but good ducting layout helps reduce the cleaning frequency and time required. Ducting bends that transition from horizontal to vertical are prime locations for oil residue accumulations. It is recommended that these transitions be placed off the floor so it is possible to install cleaning traps that allow residue to accumulate outside of the main flow path of the duct.



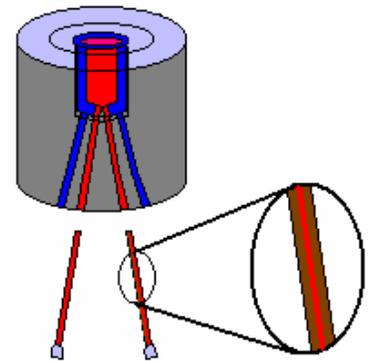
Trap is designed to be easily opened and cleaned



In Only 6 Months The Duct is more than 40% blocked.

The accumulation of baked resin oils in the die exhaust pipes is the most difficult problem to avoid completely. The pipes are located inside the die and the most difficult to inspect. To further complicate the issue, small diameter pipes are more prone to clogging than larger ones. Finally, the type of resin used also has a bearing on the accumulation rate. Reclaim resins accumulate residue faster than most virgin resins. Fortunately, the ISIBC1 system provides an indication that the exhaust pipes are clogged and require cleaning. The best method for handling clogged exhaust pipes is to develop a preventative schedule of cleaning before the pipes are so clogged that production rates suffer.

Standard Multiple Pipe Die



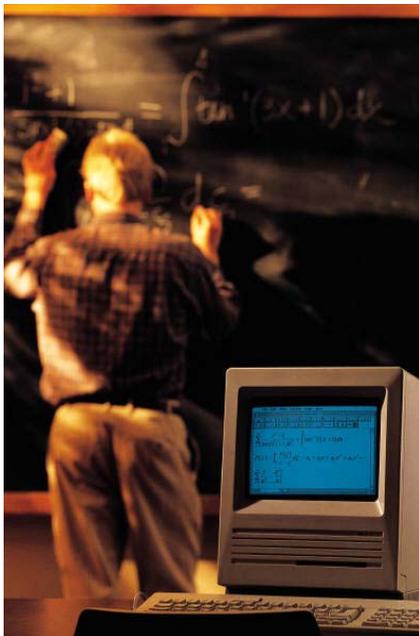
Exhaust Pipes

Heat hardens residue and air passageways reduce dramatically

To review, good IBC ducting systems must withstand the high pressures and vacuums inherent to IBC systems, withstand the heat of the exhaust, and be nearly leak free (small parasitical leaks are not a problem). PVC or preformed steel ducting does the best. Keep the use of flexible ducting to an absolute minimum. Short straight runs are rarely a problem. Don't ever use flexible ducting for 90 degree bends. Keep horizontal to vertical duct transitions off the floor or deck so an accumulation trap can be installed. Finally, develop a cleaning schedule for the IBC exhaust pipes that prevents significant losses in production from occurring. ♦

The Last Word

One of the disappointing trends I see is the decreasing number of people trained in science related fields. We recently ran an employment advertisement and I was shocked at the number of people that responded who claimed to have experience in technical support, yet had no technical background other than training they received from their employer. Then I read in a magazine recently, that in America, only 12% of the teachers in pre-secondary and secondary school have training or experience in the subject they are teaching. How can students catch the passion for physics, electronics, chemistry, or even industrial computer programming if the teacher has no training or personal experience in the subject?



I'm not sure we realize how much of a problem this is. Solid training in math and science is critical to the infrastructure of any nation. While my introduction to blown film is a story in itself, I think the reason I had the skills to do well in the field of blown film extrusion is equally

important. The teachers that really made the biggest impact on me were those who had industry experience. Some had as much as 25 years experience in industry before they decided to change their career path to teaching. I can't remember all their names, but I do remember all their faces and how I felt going into their classrooms. I looked forward to it each and every day. What stories these professors would tell! Someone would usually ask a question about how a technique would be used and often the professor would tell us a real life story of how that technique was used to solve a real problem. From physics, to data processing to electronics engineering to aviation engineering these guys made the science and math based subjects come alive. They effectively passed the torch to those of us intrigued enough to carry it forward.

I know a certain number of our readers are nearing the end of a full career in blown film. Instead of imagining all the golf you can play once you retire, I'd like to encourage you to think about all the young people's lives you could enhance by teaching what you've experienced. I realize that not everyone is cut out to be a teacher, but I think you would be surprised how easy it is to teach on a subject when you can use your career experiences to bring it to life.

Yes, teaching has gotten a bad rap, but not because of the skilled teachers. No, teaching won't be an opportunity to significantly improve your earning potential, but it is an opportunity to give back to society more than it has given to you. If you are nearing retirement call a local high school, private school or community college and find out if there is a need you can fill. I'm sure you will find an opportunity to help future engineers, managers, and scientists find and build a career path

that helps keep the nation strong. Passing the torch to the next generation is our responsibility. ♦

Who's Who at DRJ?

President

Daniel Joseph - Ext. 11

Sales Department

Sales & Marketing Manager

Trevor Grossklaus - Ext. 18

Spare Parts / Sales Assistant

Tamara Handley - Ext. 25

Website

Shawn Smith - Ext. 21

Production Department

Production Manager

Perry Champagne - Ext. 12

Shipping/Receiving

Ely Leos - Ext. 17

Service Department

Customer Service

Stacy Ellsworth - Ext. 10

Technical Support

Gary Wielenga - Ext. 26

Accounting Department

Accounts Payable

Denise Joseph - Ext. 13

Accounts Receivable

Stacy Ellsworth - Ext. 10 ♦

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, Phone (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 layflat control systems for blown film extruders. President: Daniel Joseph; Managing Editor: Tamara Handley