# THE CUTTING EDGE DIGITAL EDITION

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THE CUTTING EDGE

"Your Definitive Industry Resource" SM

Vol. 36, No. 6 – June 2018

*Cover Story:*

# Rotary Diecutting Web Fabrication Solutions for Specialty Part Conversion



IADD INTERNATIONAL ASSOCIATION of DIECUTTING and DIEMAKING

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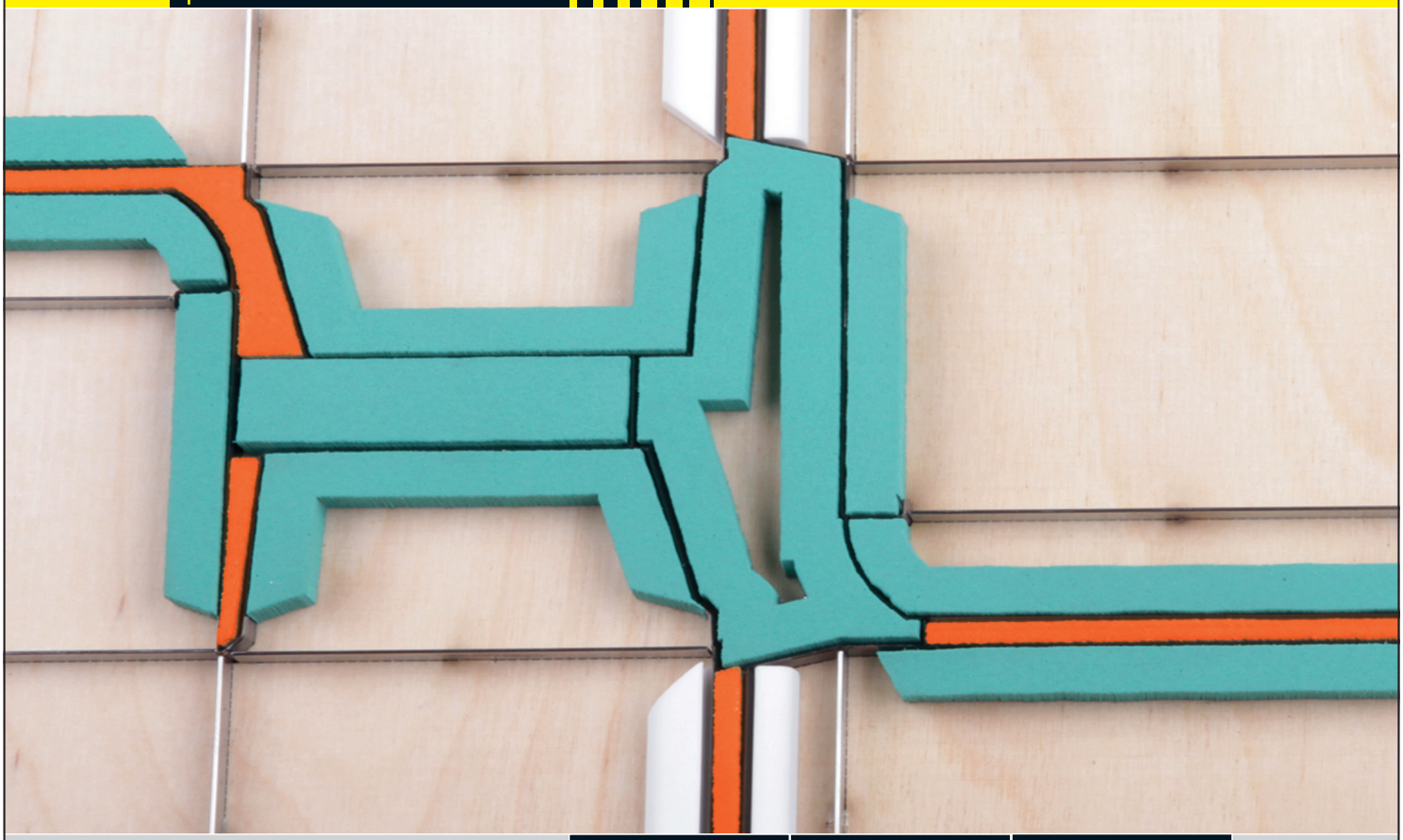

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# INSIDE THIS ISSUE




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# FROM THE PRESIDENT

Dear Friends and Colleagues,

**"The technical expertise and information imparted, the camaraderie, networking and leadership training—you can't help but profit from chapter participation."**

One of the unique things about the IADD is that we provide local educational programming and social outings in the form of chapter events. There are nine chapters that cover the US and Canada. Each one has a goal of creating an environment where you can exchange ideas, discuss issues, compare notes on new products and establish business relations.

Chapters are a great way to get involved. Each chapter has an elected chair, vice chair and a secretary/treasurer. These teams work independently to come up with educational programs or social events that would serve the best interest of the converters and diemakers in their territories. These positions are a great way to get involved in the IADD. Almost everyone I know who's serving on the IADD Board right now has been involved at one time or another as a chapter officer. I have fond memories of my time as a chapter officer. It truly sharpens your leadership skills if you take the time to work it.

Local programming for diemakers and converters is the educational and informational drive behind putting on these meetings. Recently, one of the best attended Twin Cities Chapter meetings near Minneapolis, MN, USA featured a presentation by Randy Norman of Preco, Inc. Randy spent the whole evening blowing people's minds with the information he provided on converting different substrates—things that people thought just could not be converted.

Social outings are the fun part. Typically it's a golf outing like the one Darrel Griffin puts on for the South Chapter every year, or a holiday tiki boat cruise like the one done by the Southwest Chapter in 2015. There have been professional baseball and hockey games, but one of the more unique events I participated in featured a presentation on teamwork followed up with some fun in the "Extreme Sandbox." They literally let you play on construction equipment. I got to drive a 26-ton (23.6-tonne) excavator and bull-

Randy Norman shares his substrate cutting expertise with Twin Cities Chapter attendees

Leadership training + heavy equipment adventure

dozer for FUN! After all, who wouldn't want to participate in a heavy equipment adventure?

By far, the connections you develop are tge most important part of these meetings. It's impossible to put a value on these. Industry experts who have the same challenges and have achieved success come with a willingness to share. You can get to know your competitors and your vendors in a more intimate setting than just over the phone or via email. Personally, I have connected with a few people over the years who have really encouraged me and helped me advance my career. These people have become good friends and "go to" connections in my time of need.

So if you're reading this and I have sparked some interest in you, I say go for it. Get involved in your local chapter. Even if there is not a position open you think might fit, they would love to have you on board helping to plan the meetings. Contact Juliana, the Chapters, Meetings and Marketing Coordinator at IADD, at juliana.leprich@iadd.org or 1-815-455-7519, and ask how you can be of service.

I think Michael Barkin of Advanced Die Supplies, Inc. said it best: "The technical expertise and information imparted, the camaraderie, networking and leadership training—you can't help but profit from chapter participation."

Sincerely,

Shaun A. Larson

*If you wish to reach Shaun directly, please contact him by phone at 1-612-240-2323 or by email at slarson@joncodie.com.*

**Get involved in your local IADD chapter. Contact Juliana at juliana.leprich@iadd.org or 1-815-455-7519.**

# Rotary Diecutting Web Fabrication Solutions for Specialty Part Conversion

*Butch Schomber, RotoMetrics, Eureka, MO, USA*

*Editor's Note: This article was abstracted from a presentation made at the 2017 IADD•FSEA Odyssey. For more information, visit www.OdysseyExpo.org.*

We're going to discuss rotary diecutting and the innovations coming that are helping converters create new parts on a rotary press.

Rotary presses offer not only speed, but also precision. The tolerances that we can hold on an engraved tool are within tens of thousandths of an inch, depending on the material being cut, the location and whether it is a machine-finished or hand-finished die. With a machine-finished die, we're holding tens of thousandths, and on a hand-finished die we're holding about three- to four-thousandths (0.076 to 0.1mm). This is repeatable, it's able to be duplicated over and over, and speed does not change that.

The rotary web fabrication market continues to grow, offering new and exciting opportunities. A lot of people think rotary converting is just labels. We are way past labels. We are into gaskets, medical products, automotive products, acoustics and foam. These markets just continue to grow.

New and innovative material management products are opening up exciting new process applications that are reducing secondary handling steps, increasing speed and profitability. Now we can do things in one pass, with a finished product at the end of the machine, rather than having 10 or 15 people knocking out holes and completing hand work. Rotary converting increases speed and profitability.

The evolution of diecutting platforms is allowing tighter registration between die stations, resulting in higher tolerance control. One thing that allows the diemaker to excel is the equipment. With today's presses, there is a clear line between labels and what I call "widgets" or specialty converting. The printing presses are getting better and better at printing photographs, and the specialty converting presses are getting better and better at holding registrations and at being able to see what the die ahead of it did. The product line is growing based on what is available and can be made on a rotary press.

## Waste management—slug removal and control

There is a lot of material movement and slug removal with auto, mechanical, medical and industrial products. The removal of slugs has always been a challenge for converters. What in the past was done with knock out tools, slug cutters or by utilizing foam to force parts out can now be done in more efficient ways.

There are three methods of material movement and slug removal:

1. air
2. vacuum
3. pin ejection

We offer cavities through which air literally can be introduced (via the journal/axle of the die), blowing the cavity clear and collecting the slug in a vacuum box. Or we can make a tool where you can mount a vacuum pump or a shop vacuum to the end of the journal. You cut the part, pull it through the die and expel it outside the journal. There are new tools called pin ejection. These allow us to eject parts from the web down to a 60-thousandths (1.524mm) hole, which could not have been done in the past. The pin ejection does a really good job.

## Air ejection dies

Compressed air is used to blow away the waste or diecut part from the die (see Diagram 1). Air is offered in different versions:

- Air eject: Simple, engraved dies that utilize compressed air to blow the part out of the cavity. Assists in cavity collection and minimizes blade breakage, but does not guarantee part ejection.

- Focused air: Requires a probe that is key slot cut, allowing for the timing of the air blast to blow the part. The slug is then collected with a vacuum box.

- Manifold or multi-port air eject: Utlizes side-mounted manifolds to time the air blast, resulting in better control and higher ejection pressure. May also combine air and vacuum to offer timed ejection for removal or replacement (see Diagram 2); this feature is also available on anvil rolls (see Diagram 3). With the air eject, we cut the slug, blow introduced, compressed air into the journal and then, as the part cuts, it expels from the web. A vacuum box mounted behind collects the part.

### Focused air

With this version, we have introduced a rod through the center of the die so that we can better time that blowing action. This allows us to somewhat control when we are going to blow it to aim it where we want.

### Manifold or multi-port air eject

The focused air technology was outdated, but has gotten better in that we can offer manifolds at the end of the die that mount right into the side between the gear and the body. Now we can gun drill the body at the row of cavities and time when that air will be introduced to that particular row of the cavity. This provides better air control, giving you more forceful air and blowing that part harder out of the web in a more focused direction.

Manifolds can also be used in certain applications where we introduce vacuum and air at the same time. As the die revolves, we can cut a part, hold it in the die and hold it to where we want to release it. In a rotary diecutting machine, usually the last station is where you are doing your metal-to-metal diecutting. The parts are either going into a box or onto a stacker conveyor, but you are collecting them either way. If you are diecutting in that last station, many times you will run into the waste, polluting either the stack and/or pulling into your rewound roll. Now you can time it to where you want to cut it, hold it and bring it over where you might have more real estate to mount a vacuum box and collect the parts. You can also cut, hold the part in the die and actually transfer it around and reposition it onto a new web. There's a lot of technology that will couple with press designs.

Diagram 2 shows a manifold die. The die has been drilled for air. We introduce air as the die spins, and as each one of these rows reaches the port hole, it gets blown. So it's kind of a "shock air." We've always recommended about 110 pounds pounds per square inch/psi (758.4 kPa) of pressure for the old-style tools. All the holes were leaking at one time, eating air up quite a bit. The creation of air is very expensive and very loud, so we went to the focused air which helped control that better. Now with the manifold, we are giving the full 110 pounds psi (758.4 kPa) of air at one time, in one shot, into that cavity.

### Cost

I've been asked how much a manifold adds to the cost of the tooling. It may seem to add 10% to the cost; however, the manifolds are probably the biggest part of that. Remember, if it's an air eject tool, we have to drill it anyway. Therefore, the only additional work is the gun drilling and the manifold. Manifolds range from maybe $50 to $150 USD, depending on the die. Now if there are 25-gun drills on the end of the tool, that many may increase the cost more than 10%. However, it's not that great of

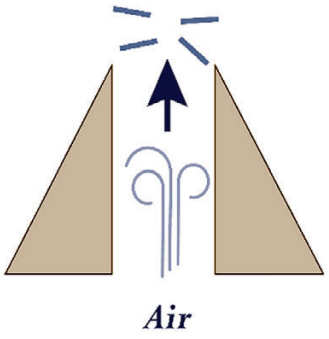


Diagram 1

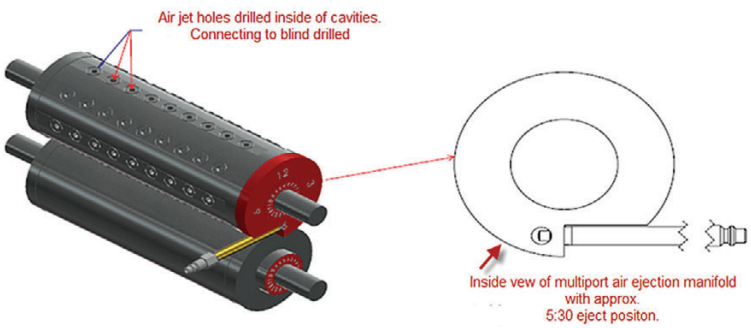


Diagram 2

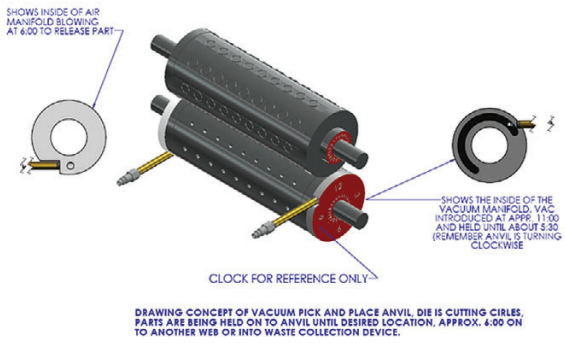



Diagram 3

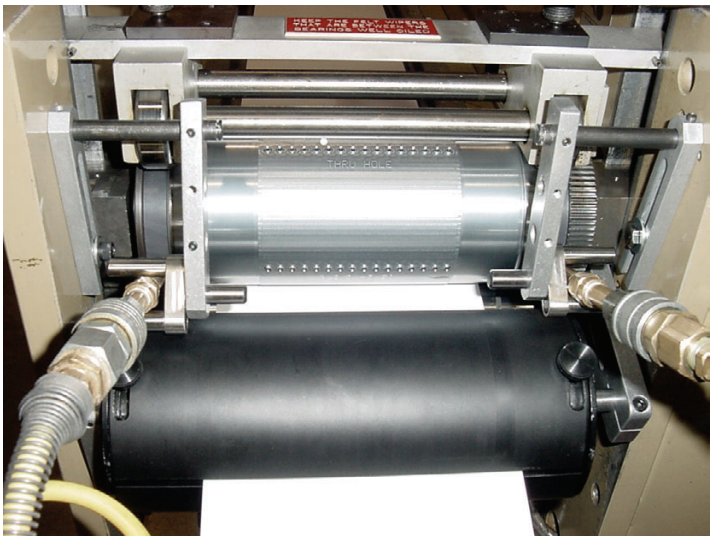


Diagram 4

Diagram 5

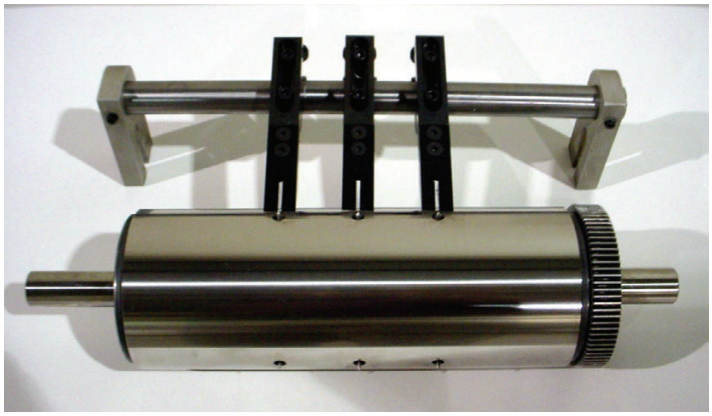


Diagram 6

an increase, and you have the savings in air production.

## Air pressure

We recommend 100 pounds psi (689.5 kPa) of air at the die for air inject and/or vacuum, and you have to have enough to do the job. People will break tools, whether they are manifold or air eject. I always ask, "Do you have 100 pounds psi (689.5 kPa) of air at the press?" And their answer is yes. What they are really telling me is that big compressor in the back room is pumping out 110 pounds psi (758.4 kPa) of air, but it was feeding every machine in the room—not just the press, but also the air cooler and everything else, before getting to the die.

In one case, they were running a machine that had built in the feature, but they had a very small air line that ran to the air box. Well, a 1/4" (6.35mm) air line can only move so much air. In reality, at the die they were running between 50-60 pounds psi (344.7-413.7 kPa) of air. We got a main air line and popped it onto that focused air tube, and the result was pretty funny. The operator's eyes lit up because we were blowing slugs 15 feet (4.6 meters) away from the machine. We were clearing the die; he had never seen that before. This is why I recommend a straight air line, because there would be no fluctuations.

Now, it's fine if even just 100-110 pounds psi (689.5-758.4 kPa) of air is getting to the die. Remember that more holes are going to demand more volume. It's really a mixture of volume and pressure. We need the 110 psi (758.4 kPa), but if we run a little three-horsepower air compressor, it's not going to keep up. You have to make sure the source is big enough to keep it fed.

Others agree these dies work, but say you absolutely need the air flow. They report you can sometimes feed from both sides of the tool because running air through one side in many cases does not give you the even air eject or air that you need. They agree you should take note of what is going on in the factory; if it is running off a main line, it is like putting a hole in your air reservoir, and you have to make sure you have enough to run the rest of your plant.

## Air and vacuum

Depending on the real estate on the machine, we can actually add air and vacuum on one side in the same manifold. What you can do is have two tubes running into the manifold, add a hole to hold it with the vacuum until the right time and then introduce air. We indicate when we would like to hold the part and when we would like to release the part, like the face of a clock (see Diagram 3). That would tell us the timing on the manifold. Diagram 4 shows a multi-port/manifold die using both vacuum and air in a press in a station. The manifolds fit on the side where the non-gear is, and between the gear and the body. We have introduced vacuum, so we cut the part at six o'clock. We can hold the part to whenever we want to release it, then

introduce air, so the manifold lines up with the gun drill and spits the part out of the way.

Diagram 5 shows that we can also use this same principal on an anvil roll. Depending on the part we are cutting, we can now cut all in one pass and introduce vacuum through a pattern of holes for the ID. The OD goes onto the stacker or the collection device. The ID stays under the anvil, and the anvil holds it until we can expel it when there is room for a vacuum box.

### Picker pin

Another way of removing parts is the picker pin (see Diagram 6). This is mainly used for large cavities that we aren't able to blow and/or vacuum. We modify the anvil to match the repeat of the die and install pins into the anvil. The die has a female hole in the cavity. As they roll with each other, the pin actually pierces the material as it revolves around it, and it will pull the window with it. It runs through what is called the comb. As that comb passes through that pin, it pulls the piece off and collects the pieces into a box or a vacuum.

## Vacuum ejection dies

Earlier we were using air to expel the part, and now we are going to talk about using a vacuum to remove the part. A vacuum is used to pick waste from the web and pull it through the die journal using a vacuum attachment (see Diagram 7). The vacuum source connects to the journal end and removes slugs from the end of the die (see Diagram 8). We can cut the part and vacuum it out the little holes. When the part is cut, the perimeter is shaped to a liner. The inside shapes are metal-to-metal. The metal-to-metal cuts go through the vacuum port into the bore of the die and then get sucked out at the journal. Nobody is picking parts, there is no collection of parts and there is no debris around your shop.

These dies are clean, effective and efficient.Vacuum is offered in two versions:

1. Vacuum punch
2. Hollow lock vacuum insert

The problem with a vacuum punch die is that we need an insert. The insert has to be large enough to hold the cavity that we want to remove as well as a bolt holding that insert into the die. Which means the insert size may limit the spacing or nesting, which also limits the positioning. Locating next to the cutting blade may be difficult, resulting in the need for two-die registration. Instead, the need for a vacuum was elimitated by something we call a hollow lock vacuum die (see Diagrams 9 and 10). With the hollow lock vacuum, the benefits include:

- Better positioning since multiple vacuum cavities can be clustered or nested.
- Less waste and registration challenge for converters.
- Perfect for most materials.
- Allows a move from a two to a one die station set-up.

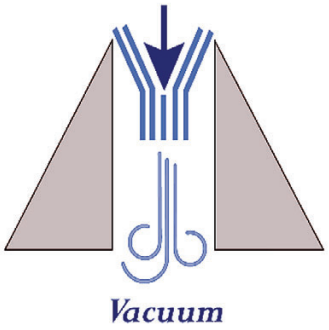


Diagram 7

We've designed an innovative way to engrave both the metal-to-metal vacuum part of the cavity *and* the pressure sensitive material on the same die. This means we have a negative relief on the inside of the cavity, allow-

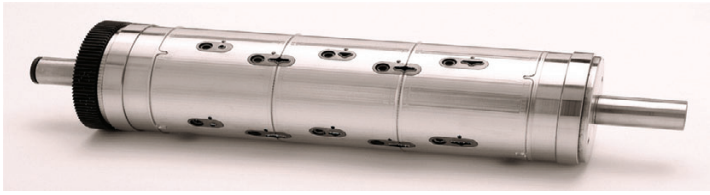


Diagram 8

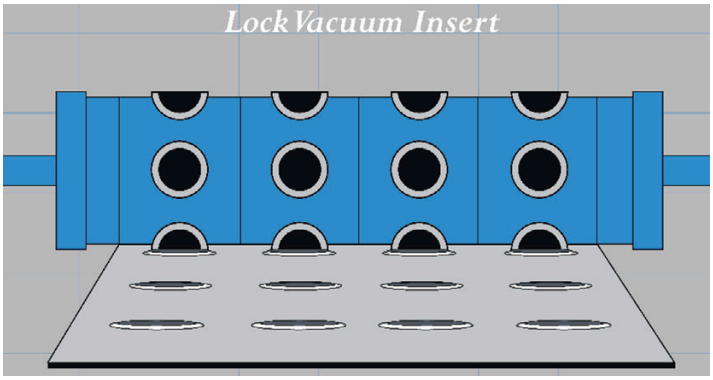


Diagram 9

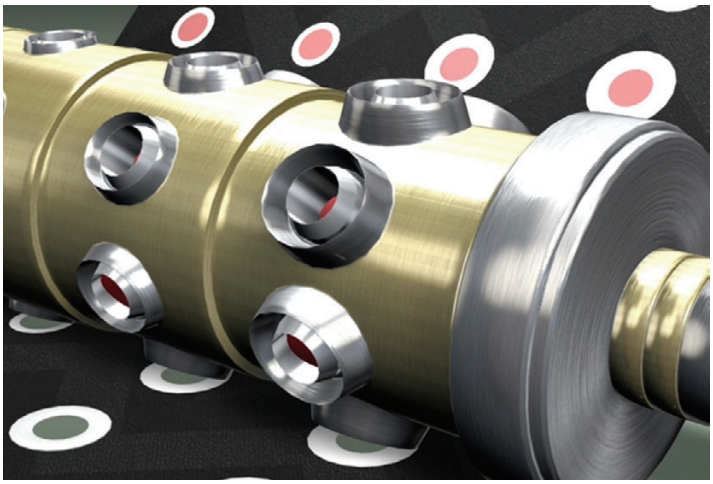
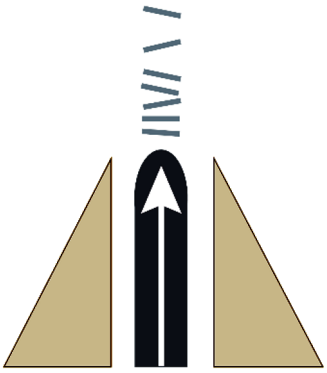


Diagram 10

ing us to cut the part and vacuum the part through. Because we have eliminated the need for the insert, we can nest these together now, putting blades 1/16" (1.59 mm) apart. The first customer who used it was cutting medical grade foam, and his material waste was cut by 65% the minute he turned his machine on. It paid for the die within a couple of hours since we could get those cavities a lot closer.

One more thing regarding the finishing or resurfacing of the hollow lock blades is that the die life is the same as a regular engraved tool. They are machine finished. Some of the inserts, depending on size, will be done by hand because machine cutters can't get small enough to get down into some of those holes. However, they retool just like a regular die and have no issues.



*Ejection*
Diagram 11

## Pin ejection dies

Air eject and vacuum are very good tools to eliminate parts of a certain size. However, when you get into the smaller cavities, it's very difficult to drill a through hole that will allow enough air volume and pressure to blow some parts out of the web. You're only going to get so much air through a 40-thousandths of an inch (1.02mm) hole. For many years in this industry, that was just part of life and the cavities would fill up with parts. You'd blow the blade off the die and you would have to buy a new die. You would try packing it with foam to try to keep them from building up, but you just couldn't get around it.

Diagram 12

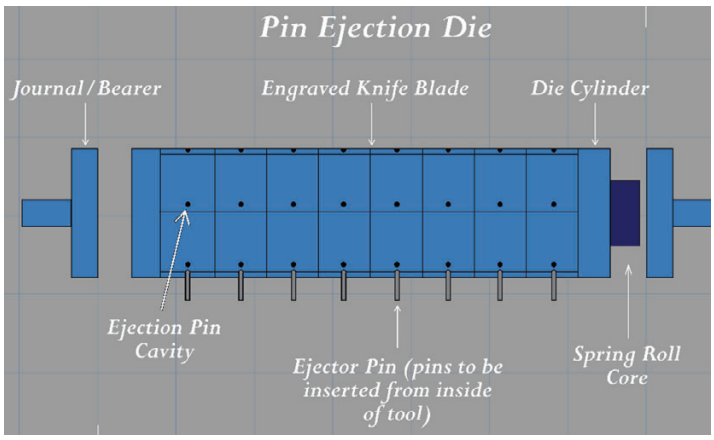



Diagram 13

A product that is available now is called the pin eject tool (see Diagrams 11 and 12). With the pin eject, pieces are pushed away from the die utilizing the built in compression system in the die. A special, compressible core material allows the hardened ejector pins to compress into the die upon anvil contact (see Diagram 13). As pins rotate off the anvil surface, the unique, engineered core forces the pins back out of the cavity, removing the waste slug from the cutting die. As you comb your web, you bring it up at about a 15-degree angle. That pin is able to push the material all the way through the carrier liner.

The result is about a 99% ejection rate of the part in the web. In the past, whether it was foam packing, air eject or some other method used for ejection, you might have a 60-65% success. And some methods caused huge problems with debris throughout the shop. We had dots everywhere—in the ink, in your hair, everywhere. You'd have to pay to get them all cleaned up. Now they can be better controlled; you can knock them right into a vacuum box.

Pin eject is offered in two versions:

1. Standard pin eject for metal-to-metal or pressure-sensitive cutting
2. Adjustable PS switch that can be used to eject slugs or press them back onto the liner or assist in stripping

The benefits include:

- Proven, highly efficient solution in high speed, high volume converting applications for the automotive, medical and non-printed electronic markets.
- Positive method of preventing build-up of small diecut slugs.
- Assists in the removal of these parts from converted web.
- Designed for challenging cavity sizes as small as 0.0625" (1.6mm).
- Proven solution for metal-to-metal cutting challenges.
- Also allows diecut of small irregularly-shaped parts that need to be cut but retained on carrier liner (see Diagram 14).

Pin eject has not only improved current manufacturing methods, it's also opened the door to new markets that require small diecut shapes. I've been asked what the life of the pins is given the urethane core on the inside. With over 3,000 of these tools made, we have had only three dies fail because of pin life.

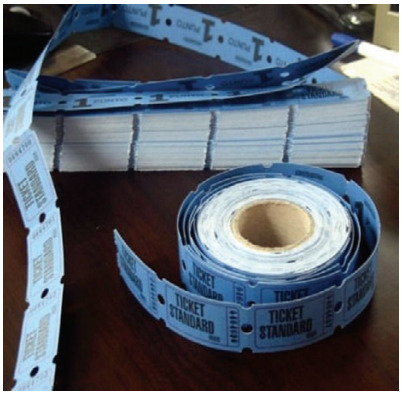



Diagram 14

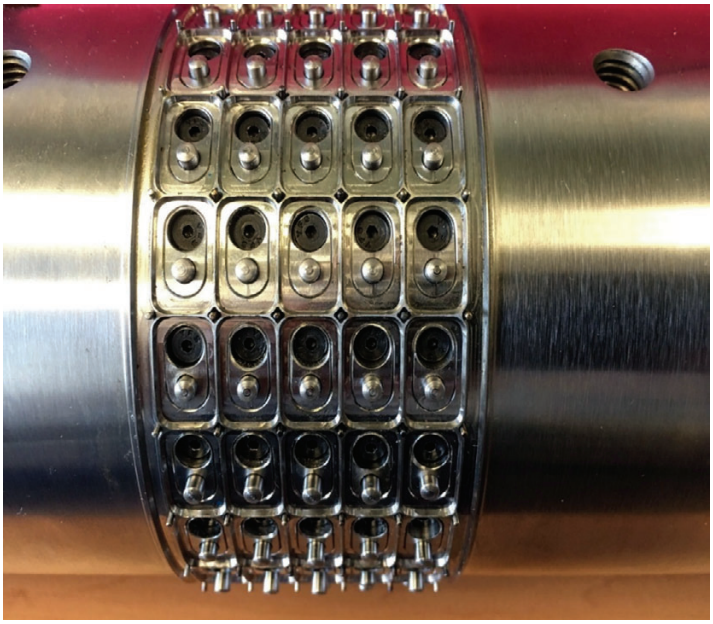


Diagram 15

Normally, the tools last between two million and three million cuts before they are sent back in. If it's not too bad, all we do is take them apart and inspect the rubber. If the rubber is not compromised, we turn it 25 degrees and you are on a new piece of rubber. If it is torn up, we put in another coring, which is very inexpensive.

The maintenance also needs to be handled by us your diemaker in order to keep your warranty. When we assemble these, everything has to be true and concentric. The moment you take apart that tool, there's no guarantee that you are going to get those bearers true again. The bearer and the journal are one piece with a hollow roll. If you were to pull it off and put it back on, it's going to be out of round. You're never going to get it round again. The method we use to put it on ensures concentricity and ensures we can make it, grind it and send it to you. We really don't recommend the customer taking them apart in their shop because we can't guarantee them.

## PS switch pin eject

Combining the versatility of the removable punch with the effectiveness of the pin eject feature, with the PS switch pin eject die (see Diagram 15) the converter can adjust pin height in house to compensate for material variance or customer expectation. This tool can be used for both metal-to-metal slug removal and pressure-sensitive placement with the swapping of pins of different height. It's quick, easy and affordable.

The PS switch takes the pin eject system a step further. For jobs that contain small holes and/or very small parts, because of the adhesive release being so light, it is very difficult to under-speed and remove the waste from around those parts without lifting the part and pulling it along with the waste. This used to mean hand stripping; paying someone to sit at the end of the line and pull off all the matrix.

Instead, the pin eject idea has been coupled with those vacuum punch inserts. Now we can control the height of that pin. The whole purpose is to push that part back onto

the liner and hold it there for an instant, then the waste starts to break around it and strip up into the waste removal. In some cases your customer might say, "I don't need the part removed, it's OK to leave it there." Or in the case of a very thick adhesive product where the release is really light, the standard pin eject could cause a dimple. Now, if your customer doesn't like the cosmetic look of the dimple, you can use shorter or taller pins, depending on your needs.

### Adjustability

As your material changes or your customers' demands change, using different layers or more layers, the height of the pin can be shortened or lengthened. This allows you to control the amount of pressure that pin is applying to that part as you are holding it down. It's a simple call. If you've ordered 750 size pins, or your diemaker tells you that's what they made, you can get 740s or 760s. And in your shop, you can take this tool apart, replace the pins, put it back together and fire the press back up. To do testing, you can use your different sizes of pins to find what works best for you. It's a very versatile tool, and you can experiment with the length of the pins without having to come back to your diemaker. The insert is removable. Using a hex key, you take a particular bolt out and the whole insert comes out. You are then able to access the pin from the outside. But you're never taking the die apart. You can grab the pin; it has spacers. You replace the pin, put it back down in the hole, put the insert back in and then bolt it in. This gives converters the ability to change the pins without taking the bodies apart.

### Pin size

The smallest pin size for the switch pin ejector is 40-thousandths of an inch (1.02mm). Although the switch pin is designed to be removable, let's say your need is set and we know exactly how high the pin could and should be. The question then becomes which way to make it. It can be made as an engraved tool that does not have removable inserts, putting those 60-thousandths of an inch (1.5mm) cavities very close to each other. But if you go with the ability to change pin heights, you are limited in spacing by the inserts. The smallest pin is 40-thousandths of an inch (1.02mm) and the smallest cavity is 60- to 62-thousandths of an inch (1.5 to 1.6mm). This is because we have to drill a 42- or 43-thousandths of an inch (1.07 to 1.09mm) hole to hold the pin. We can go up to a standard 1/8" (3.175 mm). We have 40-, 70-, 96- and 125-thousandths of an inch (1.02, 1.8, 2.4 and 3.2mm) pins. We are currently moving up to a 3/16" (4.76 mm) pin and doing testing on that now.

## Anvil or special rolls

Another method we want to talk about, and sometimes I think has held people back, is that while all rotary presses cut up against, we crush cut up against an anvil roll in the die station of the press. There are those who have figured this out, but I think it's a market that is untouched. The anvil just is another roller in the machine. We can utilize that to help make product by removing it and placing another roller in its place. In reality, it just becomes another die station; now you are doing it from under the web.

For example, we replace the anvil with a die and from underneath we cut the liner to the face, and from the top die we cut through the face to the liner in one pass, in one station. The dies are locked together with lineal register rings so the operator gets them right where they need them and within the spec of the customer's needs. With a phasing gear and timing gear on them, the operator can lineal register them together, and drop that bottom cut anywhere we like.

We've also had people use these in some really tough applications. For example, we can run a vacuum die from underneath and a pressure sensitive die from the top. We can do it all in one station, in perfect registration, because the machine doesn't know; it's just a machine. By utilizing both rolls of the station, sometimes you can pull off seamlessly what you thought was impossible. Anvil rolls are tools here.

Diagrams 16, 17 and 18 show anvil rolls and special rolls. In Diagram 16, we were cutting a cavity. It was a snap, like on a shirt, and they wanted us to push the little snap out—but not the form—and from the top of the snap. We just had a pin inside of it. It was extra deep, and all it was doing was knocking that thick part out. Diagrams 17 and 18 are ultrasonic welding rolls.

### Adjustable clearance anvil (ACA)

One of the challenges that we face every day as rotary cutters, and I'm sure in the flatbed world as well, is material variances and thickness. We can't control that from lot to lot. We're shimming dies and doing things to make them cut heavier or lighter.

With the adjustable clearance anvil roller (ACA), we replace the anvil roll in the machine with one of these units

## 2019 Odyssey Expo

Save the date! The 2019 Odyssey Expo will take place May 1-3 in Atlanta, GA, USA.

The Odyssey Expo is the only event in 2019 targeted specifically to diecutting, diemaking, foil stamping, embossing and bindery. As an attendee of Odyssey Expo, you will experience a unique, world-class amalgam of education and technology.

Presented by the International Association of Diecutting and Diemaking and the Foil and Specialty Effects Association, the Odyssey Expo focuses on innovative processes, next generation materials and unique industry services. The Odyssey Expo provides the perfect opportunity to connect with your fellow converters, industry and association leaders and suppliers.

For more information, visit www.OdysseyExpo.org, call 1-815-455-7519 or email staff@iadd.org.

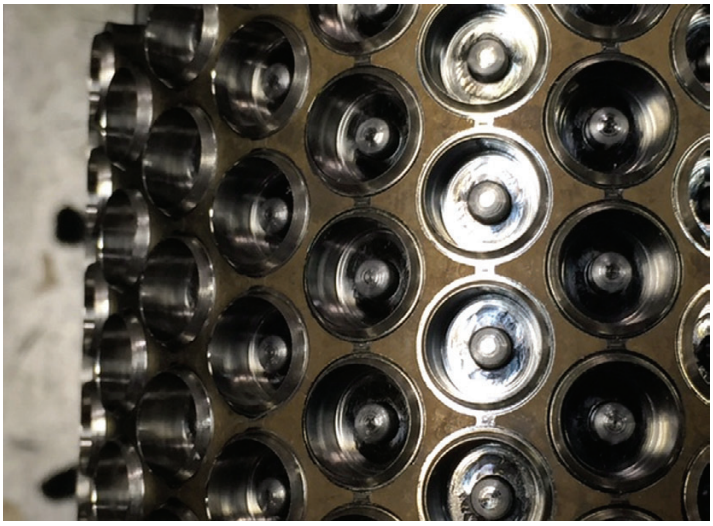


Diagram 16

Diagram 17

Diagram 18


Diagram 19

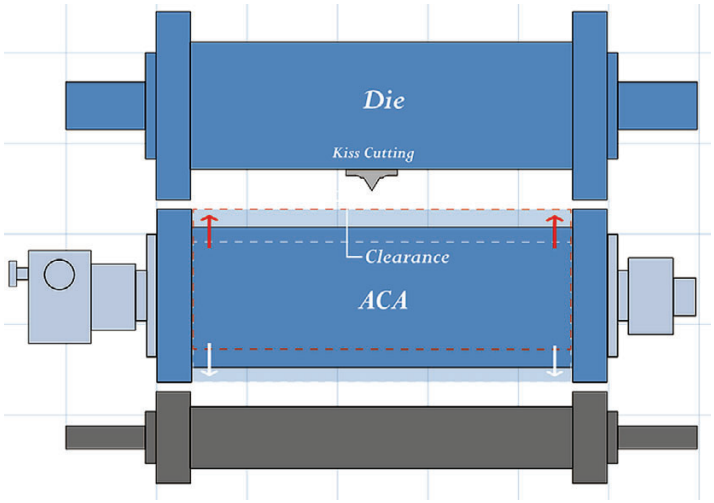



Diagram 20

Diagram 21

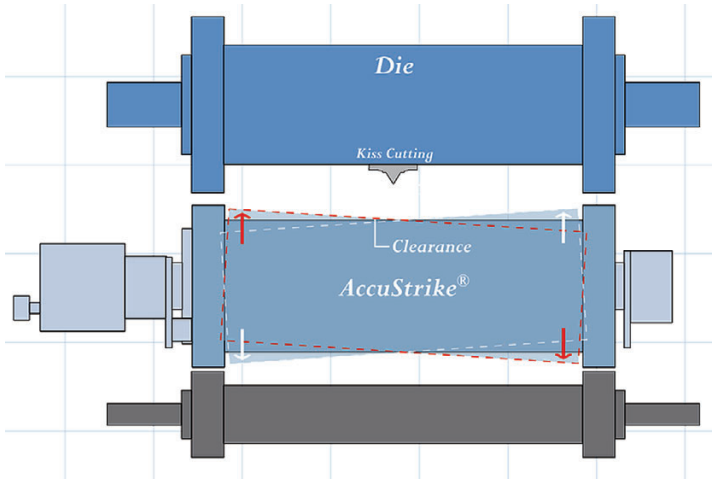



Diagram 22

(see Diagram 19). With simply a turn of the knob, the operator can control the body of the anvil roll, either raising it up, allowing the die to cut harder, or lowering it and causing the die to cut lighter (see Diagram 20). This allows for infinite and unrestricted adjustments to the depth of the cut, versus incremental adjustments. ACAs also offer:

- Precise control of a range of cutting depths
- On-press adjustment
- Easy to exchange with standard press anvils
- Highly recommended for thin film
- Compensates for variance in material thickness

As everyone knows, the material vendors get plus or minus 10% tolerance on their liner thicknesses. Sometimes that is the difference between success and failure. This is especially true in the world we are living in, with an extremely small tolerance between good and bad. So if the material is changing even a small amount, it's going to change the game. Running inline, under pressure and in speed, we can adjust the diecut.

AccuStrike® anvils adjust blade clearance with extreme precision (see Diagram 21). The benefits include:

- Maintenance and calibration free
- Parallel and/or individual adjustment of the bearers

*See ROTARY page 16*

# The Science of Die Ejection

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Continued from page 14

- Each adjustment increment is 0.0001" (0.002mm), with easy-to-use dial controls
- Precise adjustments over the full range from +0.001" to -0.004" (0.025mm to –0.102mm)
- Highly recommended for thin film
- Great for challenging materials
- Compensates for variance in material thickness
- Easy installation with minimal training required
- Requires no modification to existing die tooling inventories
- Allows use of entire web width and center mounting of flexible dies

Special anvils can also be used to stack with cutting dies to form or feed the web (see Diagram 22). Anvil rolls, or forming rolls as I like to call them, can be used for many things. We were talking about undercutting, but they can also make or form pockets for RFIDs, for chips or for images. In Diagram 23, two dies run together in tandem. They are actually helping to pull the material through the machine, so it's acting like drive rule. Anvils can do a lot of things, more than just diecutting rules or for cutting up against them.

## Blade angles

Web fabrication customers may benefit with special angles. Another thing that is not talked about very much is blade angles. By engraving blades, machining blades and machine sharpening blades, we are able to control the inside and the outside, not only the blade profile. Blades are kind of shaped like a pyramid with a finishing tip on their top. There's always land at the top of a rotary cutting die because we are crush cutting up against a steel rule. We don't make razor sharp blades. We have learned over and over that a solution to a lot of problems is modifying that blade profile. By modifying it and making compound dies where the inside might be sharper than the outside, it can combat some adhesive issues.

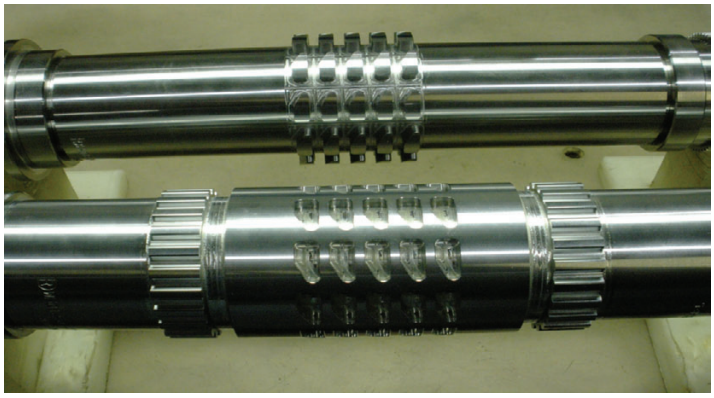


Diagram 23

Special blade profiles may be called out or suggested to converters who are cutting special products or material. For example, we can use a wide blade angle on the outside of the cavity and it displaces the adhesive away from the finished product. When we strip the waste, we reduce adhesive lagging. Or in the case of a tight tolerance part, we could put the sharp blade, as I call it, toward the money.

Special or compound blade angles are offered to assist in part removal, adhesive displacement or cut edge requirements. Sometimes in converting, we are cutting out the part that's going to be used. And in some instances, what's left is what's going to be used. We can modify our blade angles to overcome adhesive issues, provide a much cleaner cut for materials like tag stock and cut and reduce dusting and hairing in woven materials.

As materials change, so does expectation. It's always down to what is expected from the tool. Which is the part we are selling, and what is it that we are trying to overcome? We have about seven standard compound blade angle features, but we are open to always trying new things. And new stops are coming every day. We all know that. We're always playing around and testing. Die suppliers should be working with you to offer the best solutions to your challenges. Special angles may be one of them.

### Thicker materials

I've been asked how to handle thicker materials to compensate for the shaving or tapering of the edges. Rotary has a harder time handling these thicker materials when compared to a stamp press or flatbed cutting. This is because our blades paddle wheel in and paddle wheel out of material, and we end up with angled sides. We cannot eliminate these, but we can help.

One way is we can increase the diameter of the die. Now, there's a pushback from that because of course you are spending more for your die. But what this does is change the entry and exit position of that blade. In some cases, we make blades very shallow. This means we can compress that product to its thinnest point and then cut it.

We can control how the web goes into the die and how it exits the die. Sometimes you can get a full wrap on your anvil, and when you come around, you'll get a completely different angle than if you come straight through.

We've played with blade profiles. I dream of the day that I can build a blade that's reversed angle so it enters

late and comes out early, but I can't figure out how to keep it from rolling over. We continue to work on that because it is one of our biggest challenges. The thicker the material, the more the bevel.

## Summary

Engraved solid rotary cutting tools have come a long way in the manufacturing of special materials and products.

Innovative solutions are constantly being developed, allowing us entry into new markets and new opportunities. I hear many comments about how people have always wanted to try some of these ideas, but it was not cost efficient. Rotary might be the answer for that. Rotary can run hundreds of feet a minute, with the finished product at the end of the roll, and then it's out the door. Things change every day; there are things we still can't do. But in your world, the flatbed dies are growing and changing and expanding the same as in the rotary world.

Rotary also helps eliminate secondary handling steps, which will always improve production and profitability. Fifteen people standing at the end of the machine knocking out the part or packaging or stacking them up is eliminated with many of these tools shown here because they do it in one pass.

I see myself as the luckiest guy in the world because I love my job—and I've been doing this for 38 years. Every Monday, I come in to work and my life is changed. Somebody comes in with a new stock, a new shape and a new challenge that allows me to think outside of the box. Anyone coming in now is lucky because they are coming in while we are going through a big change. Whatever type of converting you do, everything is changing. It's an exciting job.

*Butch Schomber is the New Product Innovation Manager for RotoMetrics. Butch may be reached at 1-800-325-3851 or by email at butch.schomber@rotometrics.com. For more information, visit www.rotometrics.com.*

# Five Great Podcasts You Should Start Listening to Right Now

## Change Your Business (or Personal) Life for the Better

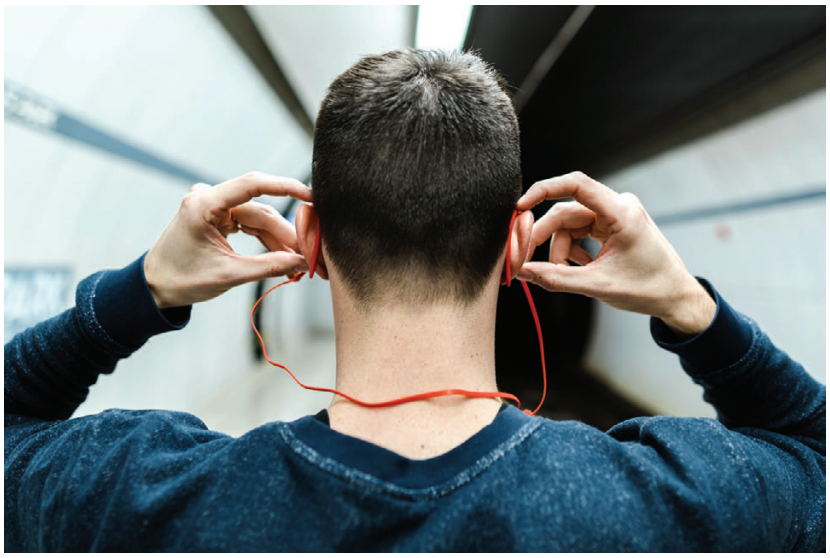
*Jeff Haden, BlackBird Media, Inc., Harrisonburg, VA, USA*

I don't need to convince you to start listening to podcasts.

But I do want to convince you to give these podcasts a try. (Some are a little off the beaten business podcast path, but in a very good way.)

### 1. *WorkLife* with Adam Grant

Hosted by Adam and produced by the TED folks (and Pineapple Street Media and Transmitter Media), *WorkLife* is the Porsche of podcasts: interviews with people like Susan Cain, Ray Dalio, Trevor Noah and Celtics coach Brad Stevens, insightful commentary from Adam. They're like mini-documentaries (if all documentaries were fast-paced, entertaining and engaging.)



Yet while the production values are exceptional, the focus is on aspects of professional life that apply to almost everyone.

All of which means you'll learn—about doing better work, and about yourself—without feeling taught.

### 2. *The Moment* with Brian Koppelman

Brian is the co-creator and executive producer of *Billions*, the best show on television. (And I do say so myself.) But while *The Moment* does include occasional conversations about show business, the podcast features Brian's deft interviews of people from his extensive Rolodex, like Seth Godin, Jon Bon Jovi, Danny Meyer, John Grisham and Asia Kate Dillon.

Brian's goal is to discuss the pivotal moments that sparked and fueled incredible careers. If you haven't found yours, this is the show for you.

And if you have, it's also the show for you, because you can learn how to be even more successful—in whatever way you define success.

### 3. *Safe for Work*

The goal of this new podcast by Liz Dolan, the former head of marketing for Nike, Nat Geo and the Oprah Winfrey Network, and executive recruiter and comedian Matt Ritter is to have thoughtful, in-depth conversations about work subjects you don't often get to talk about, especially with your peers or your boss.

Like when and how to take risks, knowing when (and when not) to speak up, and knowing how to navigate your first days in a new job.

And if you follow *Safe for Work* on social media, you can ask the hosts a question—and possibly appear on the podcast.

### 4. *Here's the Thing*

Granted this podcast rarely has anything to do with business. But that's OK, because Alec Baldwin is an incredibly good interviewer. While it was a no-brainer to listen to a conversation with Cameron Crowe or Carly Simon or Questlove, I never would have imagined I would enjoy a conversation with the director of the New York Philharmonic, or a documentary filmmaker, or a conservation biologist.

But I did. And so will you.

### 5. *How I Built This*

Stitch Fix. Warby Parker. Dyson. The Knot. Kate Spade. Patagonia. Zumba. Instagram. Southwest Airlines.

Guy Raz talks to the entrepreneurs and innovators behind (seemingly every) well known company, which means it's the perfect show for anyone hoping to start—or grow—his or her own business.

*Jeff Haden is a ghostwriter, speaker, LinkedIn Influencer and contributing editor for* Inc. *He learned much of what he knows about business and technology working his way up to managing a 250-employee book plant; everything else he picks up as a ghostwriter for innovators and business leaders. He's written more than 50 nonfiction books, including six Amazon Business and Investing No.1s, along with hundreds of articles and reports. And he's collected four years of tips and advice in his book* TransForm: Dramatically Improve Your Career, Business, Relationships, and Life…One SimpleStep at a Time. *For more information, visit www.blackbirdinc.com or follow Jeff on Twitter @jeff_haden.*


## Bonus Podcast:

### 6. IADD's *Die-Verse Talks*

Did you know that you can bring all of the industry information, tips, solutions, trends and training that the IADD provides with you on the go? With the IADD's industry podcast, *Die-Verse Talks*, you have access to all of this and more, whenever and wherever you want to tune in.

As of this month we now have SEVEN episodes available for your listening or reading pleasure—we also have transcripts for every episode. And the best part is that they are all completely free to enjoy. You can check out any or all episodes at www.iaddmedia.org/podcasts. Happy listening!

For more information, contact Gigi Trejo, IADD Social Media, at 1-815-455-7519 or gigi.trejo@iadd.org.

## What do YOU Listen to?

Let us know your favorite podcast and we'll share the answers in an upcoming issue. Email your suggestions to gigi.trejo@iadd.org.

# TechTeam™ Digest



*Editor's Note: Certain technical questions received by TechTeam don't lend themselves to a full article write-up. However, since they may contain useful tidbits of information, from time to time we present a digest of responses in a more casual format.*

## Rotary Die Sharpening Machine

*IADD TechTeam – Ticket 1731*

Process: Diemaking—Rotary Machined Crush Cut Tooling

## Question

We manufacture sponge, foam and rubber gaskets. To do so we use rotary dies with shapes/patterns or simple score and butt dies (illustrations not included due to confidentiality) on a Manhassett press (see Diagram 1). Currently we purchase the dies from another company and send them for sharpening as well. But we are looking to move the sharpening process in house. Therefore I am contacting you to help me find a machine that can sharpen these dies (see Diagram 2).

## Answer

The challenge to machine sharpen rotary dies goes well beyond just the machine. Sharpening a rotary die to cut different materials would require specific machine cutters to create the profile of the blade for not only the base angle, but also for the sharpening angles. These angles may change depending on the material and/or result that you are expecting. The software or programming required to trace the particular shape would also be an obstacle to overcome.

Diemakers themselves are challenged with the same tasks; if one does not have the original program and cutters available, it is impossible to machine resharpen competitive tools.

Also needed in the resharpening process would be a grinder to reestablish concentric-

Diagram 1

Diagram 2

ity and reset cutting blade height. You may also need the ability to strip chrome from product and then reapply depending on the tools you are trying to resharpen.

It is also likely impossible to do properly if you are buying tools from more than one source.

## Reply

Thank you, this is the information I was looking for, and I received it very promptly. Thank you very much again for your service.

*Ticket #1731 was answered by TechTeam member Butch Schomber of RotoMetrics. You may reach Butch at 1-800-325-3851 or by email at butch.schomber@rotometrics.com. For more information on the IADD TechTeam, visit www.askTechTeam.org.*

# Die Shrinkage and Expansion

*IADD TechTeam – Ticket 1724*

Process: Diemaking—Flat Steel Rule Die—Carton

## Question

We have been getting out of the ordinary shrinkage and expansion on our dies. Have you been hearing this from other people? Also, do you recommend coating the dies or UV coated boards?

## Answer

Please give us a little more detail concerning your dieboard growth issues. Are you having a problem with the dieboard changing size during knifing or between diecutting runs? Are you using matrix, phenolic counterplates or milled steel counterplates? Do you save your matrix or counterplates on 1mm (0.039") thin plates? Are you pulse lasercutting or CW cutting?

Regarding coating the boards, many of us consider that practice to be proven ineffective. First you apply liquids and then they evaporate over time. We usually prefer the UV or plastic coated dieboards.

## Reply

We were using a laser cut birch dieboard and the growth was between runs. No bar scores, just 60% partial cut scores. The material is 0.038" ( 0.96mm) chipboard.

## Answer

What specific problem is your dieboard growth or shrinkage giving you during diecutting? You stated that you do not use creasing rules in this cutting die-just 60% halfcuts. Generally, dieboard growth or shrinkage causes problems with creasing when the creasing rules in the die are no longer centered over the crease channels on the cutting plate. You stated that there are no creasing rules. Besides print-to-cut issues, what else could be the problem you are having during converting?

In general, to reduce dieboard growth or shrinkage, we can suggest a couple of best practices. The first would be to use a UV or plastic coated dieboard to reduce the effects of moisture. Second, we would not use the CAD system bridging defaults for the number of bridges in a line, their size and placement. Wider bridges and more bridges per line segment make for a stronger dieboard. Try to line the bridges up from in both directions to yield a more rigid dieboard.

Sometimes, the handling a dieboard receives as it is taken out of storage, locked up and then returned to storage is much rougher than the beating they receive during the diecutting process.

*Ticket #1724 was answered by TechTeam member Patrick Quinlan of Channel Creasing Matrix, Inc./ CCM Die Supply. You may reach Patrick at 1-304-616-1288 or by email at pquinlan@ccmdie.com. For more information on the IADD TechTeam, visit www.askTechTeam.org.*

# Mounting Counter without Locator Holes

*IADD TechTeam – Ticket 1722*

Material: Paperboard Clay Coated (24pt C1S)
Process: Diecutting—Flat Steel Rule Die—Carton

**This is the information I was looking for, and I received it very promptly. Thank you very much again for your service.**

SCORES ARE CURVED, CANNOT USE MATRIX
MISSING COUNTER LOCATOR HOLES

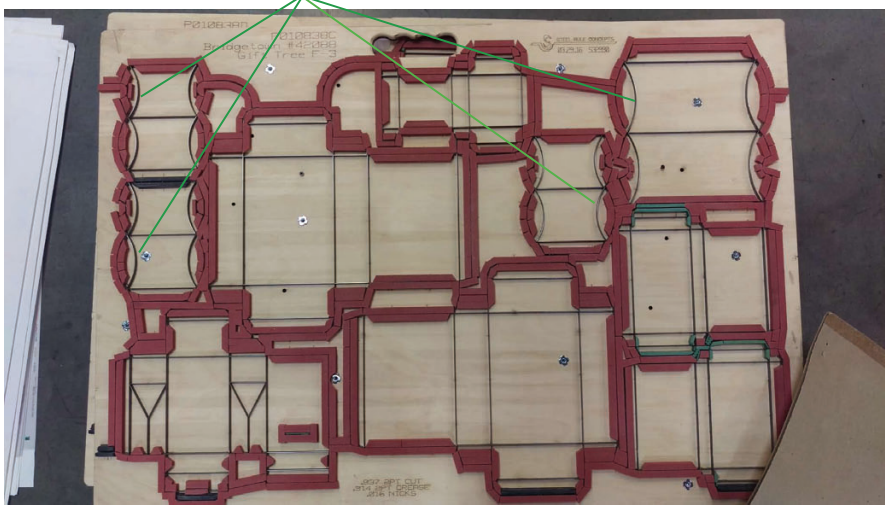


Diagram 3

NORMAL DIE WITH LOCATOR HOLES AND COUNTER

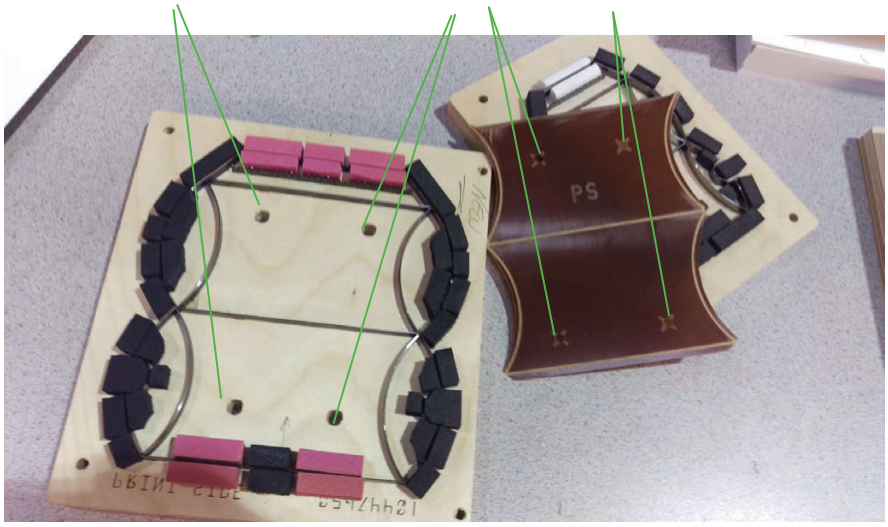



Diagram 4

## Question

We received a die from a customer that has curved scores (see Diagram 3). Normally there are "locator holes" (see Diagram 4) to put pins in that are in the die and counter. I was told there used to be a product called Dr. Patch out of Japan; however it is no longer available.

So, I am asking if there is a way to apply a counter to a die that does NOT have the "locator holes." Worst case scenario, I will re-make the die. It seems to be a waste of a brand new die to do that though.

## Answer

Dr. Patch did make some magnets to locate the counter, but they would not work on curved creasing rule (they only work on 90 degree angles). We suggest checking the creasing rule height on the curved part, as it looks off. Perhaps the die was made to be used with matrix? We don't think matrix will work for this, so although it is a shame, the die would likely need to be remade.

Another thought we have is a trick we do with hot foil dies, and that is to cover the counter in thick grease, stick it to the engraving and then transfer in the machine. It works surprisingly well in that application, as there are normally lots of contours/detail/edges for the counter to nest in on the engraving. If you are in a pinch, it's worth a try. We would recommend putting grease in all of the channels on the counter, fitting it to the die and CAREFULLY put it in the machine and transfer. You can actually help hold the counter in place with small pieces of tape very close to the edge of the counter and tape them to the die rubber. Don't put it too far inside the counter, as you will not be able to remove it after transferring. If that does not work, it is an error by the diemaker after all, and will require reworking.

It is always a good rule for diemakers to add counterplate transfer holes to all dieboards even when counterplates are not produced for a particular job. How else will the toolmaker aid a customer with an unexpected on-press problem if the tool that was prepared is not ready to accept alternative crease channel options? While most of us feel that this dieboard should have been re-cut and replaced immediately, there is an "old school" alternative to consider.

Back before the advent of matrix and counterplates, pressmen used to hand cut crease channels. This was done by first gluing vulcanized pressboard to the cutting plate. The thickness of this pressboard would be 0.937" (23.8mm) less the height of the creasing rule in the die. Next using carbon paper, an impression of the creasing rules would be imprinted on the pressboard. All the cutting rules would also easily imprint on the pressboard. The crease channels are then cut into the pressboard using a special double-blade cutting tool centered over the crease impressions. The spacing of the

double blades should be the desired crease channel width. The silhouette of the desired counterplate image is then cut with a single blade knife and removed. The resulting outside silhouette will look just like the shape of the counterplate. Now the outside silhouette shape would be sanded to eliminate any product marking.

Crease channels were made this way for decades before CNC converting tool production became common. Double-blade crease channel tools are available from most die supply vendors as well as the vulcanized pressboard. We do not think that there is an accurate way to position an existing counterplate onto a dieboard without using transfer holes. If the toolmaker had been more proactive, all of this extra work could have been avoided.

## Reply

Thank you for all the suggestions. We also came up with a kind of crude idea, which was inspired by your good suggestions and got me thinking in different ways. It seems to be working. I really appreciated the Team's efforts. Having access to people with way more expertise than me is extremely helpful.

*Ticket #1722 was answered by TechTeam members Patrick Quinlan of Channel Creasing Matrix, Inc./CCM Die Supply and Rob McCann of Bobst North America Inc., with a special assist by John Dickison of Bobst North America Inc. You may reach Patrick at 1-304-616-1288 or by email at pquinlan@ccmdie.com. Rob may be reached at 1-973-226-8000 or by email at robert.mccann@bobst.com. John may be reached at 1-973-226-8000 or by email at john.dickison@bobst.com. For more information on the IADD TechTeam, visit www.askTechTeam.org.*

# Soft Kick Wrinkling

*IADD TechTeam – Ticket 1697*

Material: Corrugated Paper Single Wall
Process: Diecutting—Rotary Steel Rule Die—Soft Anvil

## Question

We are noticing a fair amount of wrinkling on the back side of die-cuts that are running cross corrugation (see Diagram 4). The wrinkling is taking place along the straight scores that are going "with" the corrugation. That being said, the "inside" of the diecut looks perfect, with crisp scores, and shows no signs of dimpling from the rubber. We have tried using strip scores as well as 4x8 rule to no avail. We would rather not use any strip rubber since we don't want to add additional crushing to the carton. We are running roll end trays as well as roll end trays with the cherry locks in both B- and C-fluted paper. We thought it was our sample machine running at slow speeds, but we didn't see much improvement during the production run. We also made a flat roller press die to test as well and it had the same results. This isn't just a problem on soft kick dies alone; we are experiencing the same issues on normal diecuts along with the corr scores, only some diecuts cut more than others, but those scores usually have strip rubber on them as well. Thanks in advance for your help!

Diagram 5

## Answer

For the most part, this is an ongoing unresolved issue in the industry. There are many different beliefs of what causes it. One is that it is caused by the two surfaces (cutting die running circumference and the anvil) not traveling at the same surface speed. Due to this, the top liner is being pushed faster or slower than the bottom liner. Since the flutes are running across the cylinder, you have no tensile strength to keep the wrinkling from occurring. Naturally it will bunch up when you stop the push or drag when a horizontal crease comes in contact with it and then begin the push/drag again. We have seen operators (with minimum success) adjust the VSA (variable speed anvil) in an attempt to get the surfaces traveling at the same surface speed. We have never seen any amount of additional or less rubber combination, or difference of types change the outcome. We have seen a proprietary product called Full TopMatrix™ either reduce it dramatically or eliminate it all together. We apologize for not having a better option, but the TopMatrix is the only solution we have seen.

*Ticket #1697 was answered by TechTeam member Clint Medlock of Stafford Cutting Dies, Inc. You may reach Clint at 1-704-821-6330 or by email at clintm@gostafford.com. For more information on the IADD TechTeam, visit www.askTechTeam.org.*

**I really appreciated the Team's efforts. Having access to people with way more expertise than me is extremely helpful.**

**Have an alternative suggestion?** We want to hear from you! Email jholliday@iadd.org.

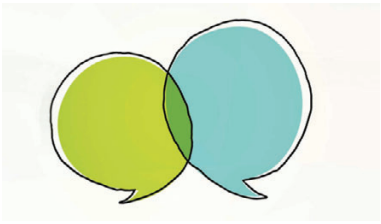
The IADD TechTeam is a dedicated and experienced team of industry professionals who quickly research and answer IADD Members' technical diecutting and diemaking questions in an unbiased, confidential, current, and direct manner. Any use of the suggestions provided by the TechTeam is at the user's risk and should always be implemented with full adherence to all pertinent laws and proper business practices. TechTeam does not endorse any products contained in its answers. All product, trademark, company or service names mentioned herein are the property of their respective owners.

# Satisfying a Demand for Dialog

## Routine Employee Feedback is No Longer Optional

*Kate Zabriskie, Business Training Works, Inc., Port Tobacco, MD, USA*

Not so long ago, most people in the workplace received feedback once a year during a performance review. An employee didn't expect a development plan, a career track or anyone to take an interest in his or her professional growth. That responsibility was often a solo activity. In fact, as recently as a couple of decades ago, there wasn't a great deal of help on the road to career success, and most people didn't complain. It simply was what it was.



But times change, and norms evolve. The practice of once-a-year feedback is fast becoming an anachronism and as out of place in the modern office as the fashions people once wore when holding those annual reviews.

The reason the average worker has evolved to expect a steady diet of attention and conversation is debatable and perhaps worth scholarly inquiry. In the meantime, however, a demand for dialog exists and must be answered.

So, why should managers take action, what does it take to establish and maintain an ongoing give-and-take and how can managers balance the constant conversation with their own workplace responsibilities?

## Why bother to give regular feedback

For some, accepting the new reality means moving past the fact that they came along when life was hard. Sorry, it's time to get with the times, and get over it. Practices have evolved. If you don't expect employees to accomplish their work with a typewriter and rotary-dial desk phone, then it shouldn't be too hard to figure out that in addition to advances in technology, management practices have also improved.

First-class organizations have career paths, they invest in employee development and their managers engage in regular dialog with their direct reports. Bottom line: If you want a top-notch worker, you better start acting like you know what to do with one.

## How to establish and maintain a dialog

Once you've bought into the notion that routine conversation is a must, the next step is knowing how to guide interactions.

### 1. Take an interest.

Very little builds engagement as well as a manager who seems to genuinely care for people, promotes their success and has the ability to develop them. This is not an annual affair. Rather, you've got to have a range of formal and informal conversations throughout the year. To get started, ask questions and pay attention to the answers.

- What are you working on that's exciting to you?
- What aspects of your job do you enjoy the most?
- If you could eliminate parts of your work, what would you stop doing?
- What used to be interesting to you that's now become mundane or boring?

*See DIALOG page 26*

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* "Industry 4.0 Model Factories", April 2016, Ernhard Feige et al, Mckinsey Digital

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*Continued from page 24*

- If you could try something professionally with a limited chance of failure, what risks would you take?
- Tell me a little about what first attracted you to this organization. Has anything changed about how you feel about your work here?
- How do you feel about our interactions? Do I give your development the right amount of attention, and do you receive the right amount of feedback?

There is no limit to the questions you could ask. The key is showing a sincere interest in the answers, withholding judgment about what you're told and taking action when you can.

### 2. Be observant.

As a manager, your job is to focus on the work that gets done and how it gets done. When you pay attention and are specific with your feedback, you show you've spent time to notice what's working and where opportunities exist. In other words, it's important to communicate to people they matter to you.

- Tim, I thought the graphics you used on those PowerPoint slides were very strong. You chose the unexpected, stayed away from heavy text and did something a little different than what we are used to seeing. I think your approach answered the challenge Roger gave us to think outside the box.
- Gina, I'd like to talk with you about the report submitted this morning. Specifically, I want to discuss the proofreading process you're following. I noticed a few errors, and I want to see if there is a way we can reduce the mistakes. If we could increase the accuracy of the reporting, I think we would improve our department's credibility. Is now a good time for you, or should I schedule something for this afternoon?

## Finding the time for planned dialog

There is no clock fairy or magic solution to time management and fitting feedback and development conversations into a regular workload. It's an effort that requires discipline. To ensure planned dialog happens, you need to put formal meetings on a calendar, schedule them at regular intervals, show up


## IADD & INDUSTRY CALENDAR

**Jun 05, 2018 -- Jun 07, 2018**

### ESKO WORLD
**Location:** Hyatt Regency Hill Country Resort and Spa, San Antonio, TX, USA
**More Information** eskoworld.com/events/eskoworld-2018

**Jun 05, 2018 -- Jun 07, 2018**

### EXPO PACK MEXICO
**Location:** Expo Santa Fe Mexico, Mexico City, Mexico
**More Information** expopack.com.mx/2018/en

**Jun 19, 2018**

### IADD LAKE MICHIGAN 11th ANNUAL GOLF OUTING
**Location:** Bartlett, IL USA
**Program:** Join us for a day on the green with lunch and networking opportunities! More information will be available soon!
**Contact:** Juliana Leprich, IADD Chapters, Meetings & Marketing, Tel: 1-815-455-7519 Email: juliana.leprich@iadd.org

**Jun 21, 2018**

### IADD SOUTH CHAPTER TECHNICAL MEETING
**Die Ejection: How to Achieve Speed and Accuracy in Your Diecutting Operation**
**Location:** Atlanta, GA USA
**Program:** Dave West will present a new way of looking at die ejection and explain the differences between the old and the new methods. !
**Contact:** Juliana Leprich, IADD Chapters, Meetings & Marketing, Tel: 1-815-455-7519 Email: juliana.leprich@iadd.org

**Sep 05, 2018 -- Sep 07, 2018**

### ICE SOUTH EAST ASIA
**Location:** Bangkok International Trade and Exhibition Centre, Bangkok, Thailand
**For More Info:** ice-southeastasia.com

**Sep 25, 2018 -- Sep 27, 2018**

### GFA FALL MEETING
**Location:** Seattle Marriott Waterfront, Seattle, WA USA
**More Information:** gasketfab.com/events.phpwww.gasketfab.com

**Sep 25, 2018 -- Sep 27, 2018**

### LABELEXPO AMERICAS
**Location:** Donald E. Stephens Convention Center, Rosemont, IL USA
**More Information** http://www.labelexpo-americas.com

**Sep 25, 2018 -- Sep 27, 2018**

### FACH PACK
**Location:** Nuremberg, Germany
**More Information** Christiane Drescher, Phone: +49 (0) 9 11.86 06-86 76 or Jessica Kent, NürnbergMesse North America Inc., 1 (770) 618-5837, www.nuernbergmesse-north-america.com

**Sep 25, 2018 -- Sep 27, 2018**

### 2018 CORRUGATED WEEK
**Location:** TBD, Indianapolis, IN USA
**More Information:** tappi.org/Events/Event-Calendar/2018-Corrugated-Week/

on time and put the smartphone away.

## The payoff

While increased levels of informal feedback and scheduled conversation can seem overwhelming at first, the more often a manager engages, the easier it is, the franker the discussions become and the greater the understanding between the employee and the manager grows.

With whom should you be having conversations?

*Kate Zabriskie is the president of Business Training Works, Inc., a Maryland, USA-based talent development firm. She and her team help businesses establish customer service strategies and train their people to live up to what's promised. For more information, visit www.businesstrainingworks.com.*

# Machine Maintenance

## Proactive vs. Reactive Strategies

*Rob McCann, Bobst North America Inc., Roseland, NJ, USA*

*Editor's Note: This article was abstracted from a presentation made at the 2017 IADD Anuual Meeting. for more information, visit www.iadd.org/programs.*

No matter what type of equipment you own or operate—from diecutting presses to waterjets to the simple printer in your front office—you need to be aware of the various maintenance strategies and philosophies in order to make good decisions about equipment maintenance. With time and successive production cycles, even the best machine in the world may experience a drop in performance or even failure. The purpose of this article is to help you understand the difference between proactive and reactive maintenance strategies, the pros and cons of each and which strategy is best for your situation. Do you know how to determine what can and should be done in-house and when to use the original equipment manufacturer (OEM)? Are you aware of how internet machine connections are changing equipment maintenance and whether you can take advantage of predictive technology to maximize your machine's life cycle?

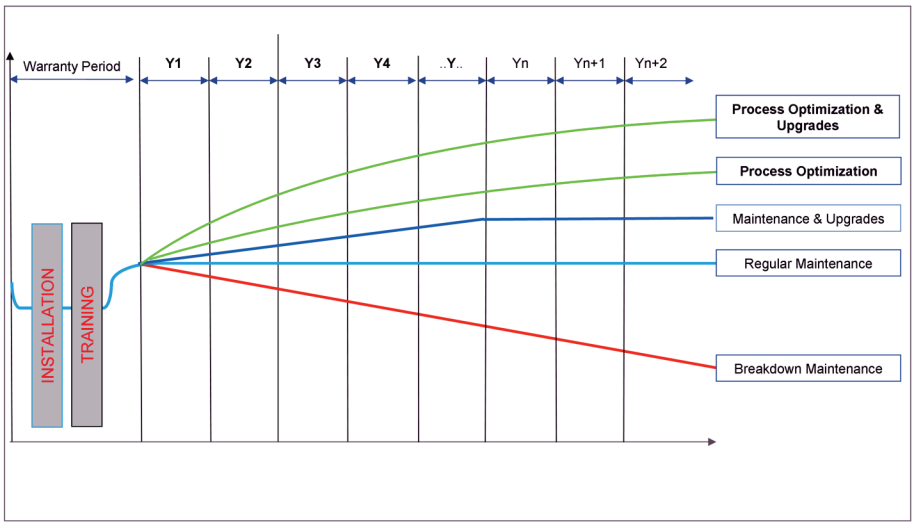



Diagram 1

## What is machine maintenance?

Whether it is your car, your copy machine, your laser, your router or some other machine, maintenance is the process of maintaining or preserving something. Preventative maintenance is regularly performed maintenance on a piece of equipment intended to lesson the likelihood of failure. The key word is regularly. Preventative maintenance is performed while the equipment is still running so that it does not break down unexpectedly, at the worst time.

Often there is a misconception that maintenance results in equipment working better than it did beforehand. With diecutting presses, we sometimes see machines that have been untouched for 10, 20, 30 years. We'll go in and replace parts and there is a big hefty price tag because of all the neglect. So the customer will expect some big output returns. However, maintenance isn't designed to boost productivity. It's designed to maintain your equipment as close to OEM specs as possible. Similarly, if you take your car for an oil change, it doesn't necessarily drive any faster on the way out than it did on the way in. But you are prolonging the life, so it is important to understand that regular maintenance is not a method to boost productivity.

When we talk about maintenance strategies (see Diagram 1), we need to include breakdown maintenance or run-to-

failure, which I will talk about in a bit. Regular maintenance is just doing what the OEM standard specs say you should do just to maintain the life of the equipment. Maintenance and upgrades means a new product or service has come along, but that's not an indefinite increase in productivity because you increase your productivity only as much as your service will get you. Process optimization can be had through consulting services or interaction with the customer to create an action plan. So in Diagram 1, you can see the five different lines of productivity, depending on the strategy you choose.

## Maintenance strategy

One of the key characteristics of a maintenance strategy is consistency—regular scheduling. Regular scheduling often is a big challenge due to production. Everyone would like to fix their machine or replace their part, but at the same time they want to get those jobs or those tools out the door, so they postpone it to tomorrow, next week, next month, next year…never. It's important to know who the person is in your facility who is authorized to make that call, and for that person to understand the ramifications of putting off maintenance. Often it comes down to, you can pay now, or you can pay later; and if you pay later, it will be much more costly than paying now. Most OEMs want their equipment to run the best it can, and they're not averse to selling you the parts or service to do so. At Bobst, we are very strong advocates for consistent maintenance, which is why we have annual or bi-annual programs and often work with customers on monthly preventive maintenance.

Another key characteristic is to follow your OEM's guidelines. What does your manufacturer recommend for maintenance? Using diecutting presses as an example, typically it should be a 52-week detailed schedule. We see a lot of instances where instead of a strategy, customers will do the same task 52 times. So, they will have their list, saying we are going to grease this, change that, fix this and blow that filter out. They do that 52 times over and over and over, and they only do the things that they can reach. They don't do the in-depth stuff. This will lead to equipment breakdown. Do you have daily, weekly, monthly maintenance? Do you actually do it? Unless you break it down into a 52-week schedule, you will only get the easy stuff done. You are going to see that they are pumping new grease out of something that they just greased six days ago. So on the seventh day they go around and hit all the grease fittings that the operator or the maintenance crew can easily hit; they never get in there to take covers off, or to get into the assemblies that need to be taken apart and properly inspected and properly lubricated. Do you kind of just go through the motions or do you have diligent maintenance? What's the condition of your equipment? Is it temperamental? Does it follow your schedules? Does it behave for you?

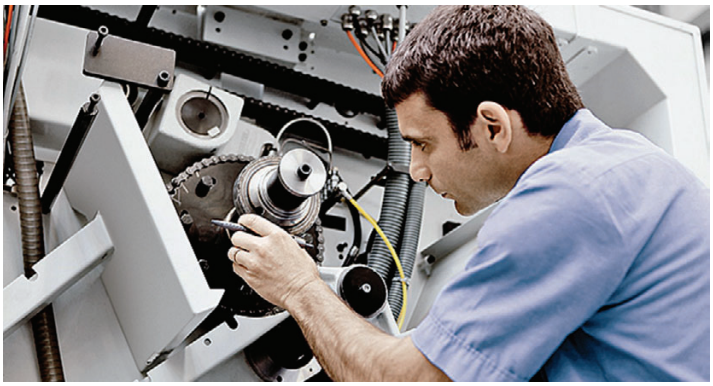
## OEM maintenance

One of the benefits of your OEM providing maintenance is that they are machine specialists who have familiarity with the equipment and who see the equipment in all applications and in all environments. Do you have dedicated in-house maintenance, or is it just everybody does everything?

What we see with a lot of converters is that they will have dedicated maintenance but very, very few will have it dedicated to specific departments; whether it's printing, converting or finishing. So there are these general technicians who before lunch are fixing the fork lift and after lunch they are fixing the Bobst machine. That doesn't mean they aren't qualified; it just means they haven't seen everything the Bobst experts have seen. So the OEM's experts not only have specific training, but also the advantage of seeing the machine in all the different environments running in the different applications

Another benefit of using your OEM is the training opportunity it provides. When your OEM comes in, you can assign your own employee to learn from them so that if this happens again, they can handle that repair or that part replacement. If you just think, "OK, I'm paying the OEM employee to do that job, I'm going to have my guy do something else while that machine is down or being fixed," you are missing out on an opportunity.

Other benefits are service packages, discount labor rates, parts, etc. A lot of machine manufacturers today are realizing they can't just sell an infinite number of machines, so there is a really, big push for service packages, not just bumper-to-bumper warranty stuff, but routine maintenance. You know you see these things with your car. Buy this car, get this package with oil for life or tires, or windshield wipers or whatever it is. So, more and more manufacturers of equipment are realizing that. Many manufacturers used to not care about anything other than manufacturing a machine, thinking, we make a good machine, what you do with it is up to you. That was wrong. It's in the manufacturer's best interest to have your machine running well, not to men-



tion there is money to be made off of service. On the other hand, many of us are not interested in service contracts because we don't want to spend the money; yet when the machinery fails and we have to replace it, it's much more costly.

Depending on your machine's warranty, you may be required to use your OEM for service or installing parts, or the warranty will be negatively impacted. We don't have that at Bobst, but I know there are some manufacturers of equipment who do, if it's not their guys working on it. We have a parts warranty, so even if you put in the parts, we will still warranty the parts. If you are going to have a warranty claim, what we will do is ship out the part to get you back up and running and then we work through it later unless we see that you put the thing in backwards or upside down. Our experience at Bobst is that we want you to choose us for all the right reasons, not to force you contractually. On new equipment we find that because our technicians are visiting the customers, they can more easily determine what's needed to keep the machines in top working order. But it's up to the customer how they would like to handle this.

Another good reason to choose OEM maintenance is that documented service brings higher resale value to your equipment.

## New equipment

I wish I had a dollar for every time I heard this: "They don't make them like they used to." No, they don't. Some of that is intentional; if you make a washing machine that lasts 30 years, how many washing machines are you going to sell? Most equipment and machines are less robust than they were before. It doesn't mean that products and material haven't improved, but it's a fact that most require more maintenance. Presses are no exception.

One thing for sure is there are more electronics, so often the assemblies require mechanical and electrical service, which means they require more specialized technicians. Also, higher run speeds demand higher precision and tighter specifications. In the past, there were situations where you might "beat" the old equipment into submission to make it work. With new, more complicated equipment, you can't just kick it in the right place to make it work. The newer machines require a greater amount of OEM service.

Still using presses as an example, one of the big issues we found initially was a lot of our sub-assemblies or controls require mechanical and electrical service. And in our company, at least we have a very, very clear segregation in mechanics and electricians. I'm a mechanic, so for many years when I was in the field, I thought, if it's got a wire, it's not my job; you'll have to call somebody else. We weren't trained electrically.

Today, we don't have as many mechanical switches, we all have encoders. That means we have to go into the program to tell the machine what the positions of things are. We can't just move it into position and say, "OK, you are home now." We have to deal with essentially programming the machine to learn that it is the right thing. So, even something like the pile trays that move the loads up and down, if the chain wears out or snaps, you change the chain. You then have to go in and reprogram the machine because it already learned what that dimension was. It didn't go mechanically up until it hit a switch. It went by electronic position. So, if you changed even a chain in the machine, you had to be able to program the drive.

When our first generation of machines came out, we didn't know enough and had to be trained. So that was a real struggle for our customers because we would get our mechanics into something and they would say, "I've gone as far as I can, so now you need an elec-

*See MAINTENANCE page 32*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*Continued from page 30*

trician to finish this up. There were some cases we didn't know that going in, so shame on us. But that was reality. Looking at the types of newer equipment you use in your shop, do you find something similar to this with needing to have more specialized people, and does it force you to have more OEM service? Do you prefer to run older equipment for that reason?

In today's production environment, we also see a lot of shorter deadlines or the "just in time" approach. Nobody wants to be stocking parts and goods. If we look around customers' shops at the work in progress, it mostly has diminished. You used to be able to find complete warehouses full of work in progress. That's money on a shelf today that they are not invoicing for. If it's on your shelf, it's not in your bank account. So everybody wants everything out just in time. This philosophy puts the demand that all the equipment is up and running.

Due to the high output of modern machines, often less equipment is in operation. This puts tremendous importance on each and every piece of machinery. Machine downtime is many times the most costly aspect of failure. Think about it. If you had two presses running 4,000 sheets per hour and trade them both in for one that goes 10,000, you are plus 2,000 until the day it goes down. Now you are at zero. When you limped along with 4,000 and one of those goes down, at least you had something to get you some product out the door. Now with the consolidation of the equipment and with the automation of the equipment, there's more importance on each piece of equipment because it holds a higher role in the whole productivity chain. So, what we accomplished with more machinery we are now accomplishing with less machinery and people, which makes each one play a larger role. This will influence your deciding factors in your maintenance when you're thinking about OEM or in house repairs.

Some other questions to ask yourself are whether you prefer to run older equipment because it is less expensive to operate? How do part prices compare for older versus modern equipment? What is the availability of repairs from your OEM versus doing it in house?

Sometimes with some of the newer machinery there is internet access attached to it. That wasn't always the case with the older ones. But, that has limits. And it limits basically to software corrections; it doesn't address mechanical replacement of parts. So sometimes they identify the problem and they ship you the part. Are you comfortable with putting it in? And if it is mechanical, sometimes there are mechanical things that are beyond our scope because we are not necessarily machinists. When somebody comes out to service our machines, we have someone follow them around asking questions, so they might be able to perform a little bit more the next time.

## Run to failure

Is running something until it breaks a viable strategy? After reading all these paragraphs about preventive maintenance, your first reaction might be to say no. But I would say that it is a strategy that can work, as long as you have thought about how you will handle the situation when it inevitably happens. For example, if you know the motor on something is going to wear out, and you have that motor available to you, why would you switch it before it fails? You are potentially leaving life in your machine.

Obviously, using a run to failure strategy only works in certain situations. If you plan to take a machine out of service on the 15th of the month and you know you'll be down a shift for one day, you've planned for that and won't have unplanned down time. If you don't know when your motor will fail, you're taking the risk of it going down at a critical time. But if you know you can swap it out in a short period of time and you have the motor in stock, then why not run it until it fails?

## Predictive maintenance

Industry has come a long way, from Industry 1.0 (mechanization using water and steam for power), to Industry 2.0 (mass production, assembly line/electricity), to Industry 3.0 (computer/automation) and now Industry 4.0 (cyber connections, data exchange, cognitive computing). Cognitive com-

puting is when the machines are learning. We used to say you get out what you put in. Even that is changing, now machines can think, learning from their experience.

Here at Bobst we have around 3,900 machines connected worldwide, exchanging different levels of data. Our kind of frontline is what we call remote troubleshooting. If your machine goes down, we can see specifically see what is down and can fix it, depending on what it is. If it's a program drive, you can swap out the drive and we can program it remotely. If it's an encoder and has lost its position (going into safe mode and not moving), we can tell it remotely where it is. If an electronic component fails, we can tell you what component it specifically is. If it's a customer in New Zealand, we can determine what the part that has failed is and ship the technician and the part at the same time. So, if it's not something that we can remotely troubleshoot, at least we can know what it is, and we can get it on the way there along with a technician.

Previously what would happen is a machine would go down and you'd call for help. The technician would come and start troubleshooting; then he'd have to order the part; then wait; and you lose however long it takes for the troubleshooting and the delivery of the part.

Now with predictive maintenance, we are beginning to know about the trouble before it happens. Predictive maintenance is based on usage rather than intervals. The new KPIs to predict failure include vibration, temperature, TIR (total indicated runout), energy consumption and current fluctuation.

Utilizing data from past experiences, we can predict how much usage usually leads to failure. So rather than changing something out every set number of days, instead you would make changes based on average use. Coupled with remote monitoring and troubleshooting, this allows us to diminish the times where you are changing out good parts.

At Bobst, we're beta testing virtual reality glasses where we can see what you see. And we can make you see what we see. So, you put on these glasses and we can tell you to look at this screw on the right side or can sit at our desk and highlight something and say look at that. We can put parts books up in your eye while you are looking, and we can say, see this thing here, well underneath there it's going to look like this. We can put those pictures in your field of view. So, we can start to troubleshoot that way. This is still in development, but it should lead to your being able to use your own employees to competently make repairs. In a world that is short of mechanics, this might be one of the solutions.

## Join Us in Seattle, WA, USA!

Also serving as the annual business meeting of the Association, IADD's 2018 Annual Meeting will be held October 25-27, 2018 at the Kimpton Hotel Monaco Seattle. Room reservations are available at our special rate of $225USD/night.

The schedule for the meeting is as follows:

Exec Committee Meeting: Wednesday, October 24, 2018

Board Meeting: Thursday, October 25, 2018

Programming: Friday, October 26, 2018

Awards Dinner: Friday, October 26, 2018

Programming and Business Meeting: Saturday, October 27, 2018

For more information visit www.iadd.org/programs or contact Juliana Leprich, IADD Chapters, Meetings & Marketing Coordinator at 1-815-455-7519 or by email at juliana.leprich@iadd.org.

## When should equipment be replaced?

How do you determine when to replace equipment? A lot of factors go into the decision, including the cost of parts, lead times for obtaining parts, machine downtime, whether quality and/or performance are declining and labor costs. Other questions to ask are whether you see a value in displaying new equipment to your customers. Do you indicate on your website the equipment you operate, and will your customers be looking to you to have newer machinery? For some, customers expect their supplier to use leading edge equipment and to be ahead of the technology curve. Others look at how you are investing in your business and use it as an indicator that you're gong to be around for the long term.

However, the answers (and strategy) will not be the same for every company.

*Rob McCann is a Process Optimization Manager for Bobst North America Inc. Rob may be reached at 1-973-226-8000 or by email at robert.mccann@bobst.com. For more information, visit www.bobst.com.*

# Do Just One Thing Differently to Learn Faster and Remember Longer

## No Extra Time, Effort or Technology Required

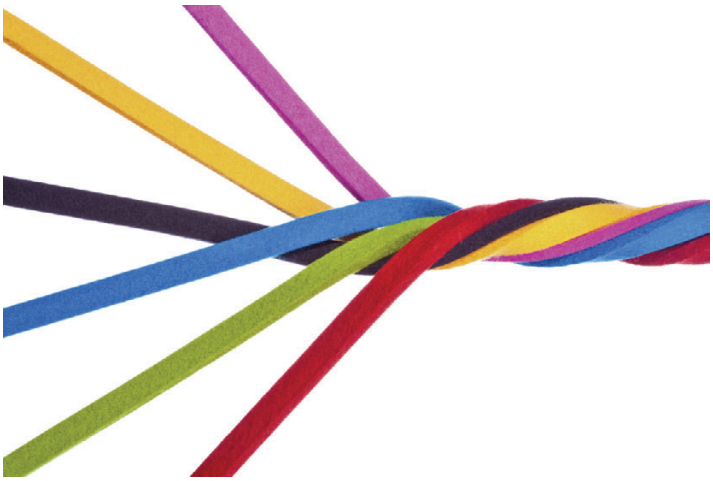
*Jeff Haden, BlackBird Media, Inc., Harrisonburg, VA, USA*

Even though many people feel that success is all about whom you know, success is almost always based on what you know. That's why so many people want to learn faster, retain more information and improve their memories.

And that's why most successful people are constant learners; that's how they stay successful.

So if you want to improve your ability to learn, here's an approach you should try: Instead of blocking (focusing on one subject, one task, or one skill during a learning session) learn or practice several subjects or skills in succession.

The process is called interleaving: Studying related concepts or skills in parallel. And it turns out interleaving is a much more effective way to train your brain (and your motor skills).



I know what you're thinking: If interleaving works better, why do we tend to practice one skill at a time? Partly that's because blocking is the way we're taught to learn. Blocking is how students are typically taught in schools and how employees are taught during training, if only because those sessions are easier for a school or company to schedule and administer.

Here's an example: I'm trying to learn to play guitar. (I should just say "learning to play guitar," but the jury is still out on whether I'm actually learning. So let's stick with "trying.")

Most of the instructional guides, online programs, etc. that I found are based on blocking: One session might be scales, another chords, another arpeggios. In contrast, a program using an interleaving learning style would alternate practicing scales, chords, and arpeggios within the same session.

Or if you want to think of it another way, instead of going to the driving range and just hitting fairway woods, instead you would hit a few shots with a driver, then a few with a mid iron, then a few with a pitching wedge . . .

Why? One theory is that interleaving improves your brain's ability to differentiate between concepts or skills.

*See LEARN page 36*

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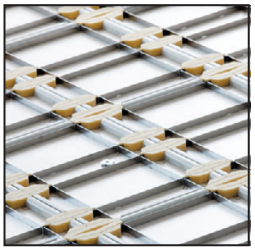

böhlerstrip

**Die Supply Guys** ~ Phone: 416-801-5071 ~ **derrick@diesupplyguys.com** ~ **www.diesupplyguys.com**

## LEARN

*Continued from page 34*

When you block practice one skill, you can drill down until muscle memory takes over and the skill becomes more or less automatic. When you interleave several skills, any one skill can't become mindless—and that's a good thing. Instead you're constantly forced to adapt and adjust. You're constantly forced to see, feel and discriminate between different movements or different concepts.

And that helps you really learn what you're trying to learn, because you it helps you understand at a deeper level.

To test the principle I decided to learn three simple guitar riffs: "Smoke on the Water," "7 Nation Army" and "Iron Man." I blocked them out, spending 20 minutes on each in separate sessions.

How did that work out? If sounding like a five year-old guitar player was the goal, I was wildly successful.



Then I tried learning three more riffs: "Highway to Hell," "Dirty Deeds" and "TNT" (because too much AC/DC is never enough.) But this time I tried interleaving; once I had the basic chords kinda/sort down, I alternated playing those riffs during three 20-minute sessions.

Interleaving definitely worked better. I sounded like an eight year-old guitar player. (Woo hoo!)



Keep in mind interleaving isn't just a better way to learn a motor skill. In a three-month study with 7th graders, students who learned using interleaving scored 25 percent better than those who learned by blocking. Better yet, when tested on the same material thirty days later, the interleaving group scored 76 percent better than the block-taught group.

That means interleaving not only produces better short-term results, it also results in much greater long-term retention—which is incredibly important in the real world where the point of learning isn't to simply remember something long enough to pass a test.

If you want to learn better—and retain what you learn for longer—try interleaving instead of blocking.

My guitar says it works.

And so does science.

*Jeff Haden is a ghostwriter, speaker, LinkedIn Influencer and contributing editor for* Inc. *He learned much of what he knows about business and technology working his way up to managing a 250-employee book plant; everything else he picks up as a ghostwriter for innovators and business leaders. He's written more than 50 nonfiction books, including six Amazon Business and Investing No.1s, along with hundreds of articles and reports. And he's collected four years of tips and advice in his book* TransForm: Dramatically Improve Your Career, Business, Relationships, and Life…One SimpleStep at a Time. *For more information, visit www.blackbirdinc.com or follow Jeff on Twitter @jeff_haden.*

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# Ways to Spot a Potentially Violent Person in the Workplace

*Source: www.entrepreneur.com*

How many times have you read about a workplace shooting, and the employees said something like, "I'm not surprised he did this," or, "He always gave me the creeps, but I never thought he'd actually kill anybody"?

Workplace violence will never disappear, as illustrated all too frighteningly, all too often. That's why people have to be educated. Remember the Washington Navy Yard shootings in Washington, DC, USA? I'm a security executive who appeared on CNBC at the time to discuss that incident as well as the prevention of future ones.

As I said at the time—and still do—unfortunately there's no magic pill, no super-technology to prevent violence on the job.

I remember how the CNBC anchor for that interview asked why the NSA, or other high-tech agency, could pick up people's online chattering but not prevent workplace shootings?

Well, not to be snarky, but…just how can technology predict that Joe Schmo, having eaten his breakfast of corn puffs and bacon, will then arrive at his former employer's company, walk into his former boss's office and whip out a big steak knife before slicing up his boss?

Even that scenario assumes that the company doesn't have a metal detector. Joe won't be getting past security if his former boss works at the county courthouse. But what if his place of former employment is Walmart? You could walk in there with a gun any time and nobody would ever know it.


Nevertheless, completely ignoring the issue isn't the answer. Experts on workplace violence offer a psychological profile of the typical perpetrator, and it's worth the while of businesses to know the signs:

1. A controlling nature. This person is not the industrious take-charge type, but a true freak when it comes to controlling other people. Change unravels this type of person.
2. Obsession with power. This point has some overlap with number one, but the perpetrator will go as far perhaps as having a gun collection, or a subscription to some kind of ammo or paramilitary magazine or online community. He or she might also be obsessed with law enforcement.
3. Violent opinions. These people tend to blame victims and revel in news about the latest school or workplace shooting, bombing, etc.

4. The inability to get along with others. This person is often rude and uncaring and blames his or her problems on coworkers.
5. An assumption that others are out to get them. It's one thing to accuse several coworkers of gossiping about you or stealing your stapler, but true paranoiacs will believe that coworkers are poisoning their coffee, tapping their phone to listen in on conversations, etc. They might even believe that coworkers are following them around on the weekends.
6. A tendency to sue. This type of person is constantly filing lawsuits or formal grievances against not only coworkers, but neighbors and others not related to work.
7. A tendency to play the victim. These people have a blame-the-victim mindset, but then play the victim themselves by never taking credit for the bad things that happen to them; it's always the result of "someone else's" stupidity. Even a ticket for blowing through a red light isn't their fault.
8. Frequent use of malicious references. They like to say things like "She had it coming," or, "Karma is a great thing and will come back to bite him in his ass."
9. Ongoing anger. These people seem to be always seething about something. But it's everyone else's fault that their blood pressure is always high.
10. A lifestyle that is anything but health-conscious. These people often smoke and/or drink, rely on pain pills all the time, are hooked on sleeping pills, eat junk all the time and are the last people you'll see at the gym performing heavy deadlifts or taking a high-impact aerobics class.
11. A weird personality. They're the oddballs, the ones who stand out. They don't get invited to parties coworkers throw.
12. A work history of having been recently fired or laid off. Losing a job can send someone over the deep end for several reasons: loss of income, or the fact that they defined themselves by their jobs. That loss can trigger a homicidal rage.

Keep in mind that a person who doesn't exhibit most of these traits isn't necessarily immune to bringing a gun to work and shooting people. However, more times than not, a violent person shows most of the aforementioned traits. Employers need to know these traits, though some of them are obvious, like not fitting in or having a drug addiction.

In the end, workplace violence can't be prevented with a steel wall, security cards and guards, metal detectors or video surveillance. Even the violent individual unable to access the company building can easily wait in the parking lot to ambush an intended victim, or spray bullets at workers exiting the premises for lunch.

So, trust your gut if you feel that a person is potentially dangerous. Too many people are afraid of hurting someone's feelings by speaking up. But if someone's antisocial behavior and vindictive comments have you concerned, chances are this person may not be as sensitive as you think.

So, speak out if you ever find the hairs standing up on the back of your neck.

*Jim Lehrke is President of Safety Connections, Inc., a safety advisor company capable of working with businesses of all sizes and types. Their focus is about changing the work culture and focusing on safety first. The result is dramatic reduction of injuries and worker's compensation costs. The bonus is increased productivity and quality. Safety Connections provides a weekly safety tip at no cost. Workplace safety is a vast area and Safety Connections offers products and services that address all safety aspects. Further, Jim speaks at seminars, does team building training and motivational speaking. Safety Connections, Inc. is committed to RESULTS. If you're interested in talking with someone from Safety Connections, Inc. please don't hesitate to call 1-920-457-4866.*

## IADD Welcomes New Members

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### Melissa Monster Appointed Managing Director of PolyMX

With the appointing of Melissa Monster-van Golverdingen as Managing Director of PolyMX BV, international specialists in ejection materials for cutting dies, the management team has been strengthened.

Since 2002, Melissa has been involved with the family business, established in 2000 by her father Cees van Golverdingen. In her new position, she will be responsible for the day-to-day running of the business, and strategic decision making.

The development of Polytop MX, a durable synthetic ejection material introduced to the market by PolyMX in 2007, marked the start of growth at the business. Having spent some time in ICT, where Melissa was employed at Triple P as Marketing Manager, she decided in 2010 to focus fully on the marketing and sales of PolyMX, to further direct the growth of the company. Among the results of her efforts is a partner program with very reliable and forward looking partners throughout the world, and since 2017 membership of the CITO Group. This has led to a further acceleration of all developments. As a consequence, the business will be moving to larger premises in mid-2018, with additional production capacity, a new, modern fleet of machinery and further automation.

"When I tell people that I manage a plastic production company, they often do a double take. 'Do you actually enjoy it?' they often ask, but I think it's fantastic! My parents established a portfolio of niche products, every single one of them technically advanced and capable of delivering remarkable high quality to the satisfaction of their clients. And that itself gives a real kick," explained Melissa Monster. "I was recently given a photograph of a very complicated cutting die for folding cardboard. It made me feel proud that it was something our team was able to produce! You may well ask yourself how you can possibly find a cutting die attractive, but it just happens…"

Founder and originator of Polytop MX, Cees van Golverdingen, is taking a step back in the business, but will continue to be involved in the background. He will remain as consultant and co-developer for new products. This year the company expects to introduce a number of innovations including the Shore A10, a solution for the problems of tearing in recycled cardboard.

Cees van Golverdingen, founder of PolyMX said: "Nothing is easy in our sector, but we enjoy a challenge and always come up with new solutions to problems that help our clients improve their service. I am extremely proud of what we have already achieved, and I am happy to pass on the batten of day-to-day management to Melissa. Over the past few years, she has more than demonstrated her capabilities, and I look to the future of PolyMX with confidence."

Part of that future is a new business location. Growing demand for the projects means larger premises have become necessary. As well as offering three times the floor space, the production line will be completely renewed with an additional robot in combination with the introduction of various other forms of automation.

Contact: Laura de Waal, PolyMX BV. Phone 31-416 353498; Email l.dewaal@polymx.com.

## Utah Paperbox Installs Heidelberg's First Diana Eye 55 in US; Gallus Group Integrates with Heidelberg

After installing the Diana Eye 55 inspection machine last year, Utah Paperbox Company is capturing additional business with pharmaceutical and luxury products customers. The industry-leading inspection device is Utah Paperbox Company's first investment with Heidelberg and the first of its kind in North America.

After seeing the Diana Eye at drupa for the first time, Mike Salazar, the Vice President of Operations at Utah Paperbox Company of Salt Lake City, Utah, knew that this was the versatile, high speed inspection equipment he was looking for. With the company focusing on the pharmaceutical and cosmetics industry, Salazar was intrigued by the Diana Eye 55—providing a full-fledged solution that provides 100% quality control of the entire image and all embellishments of every single folding carton.

At speeds of up to 120,000 cartons per hour, each folding carton can be inspected before advancing to the folder gluer. The combination of state-of-the-art camera technology and unique light sources enable the inspection of the printed image, hot/cold foil applications, embossing, hologram images, spot coating and drip-off varnish patterns and metalized surfaces.

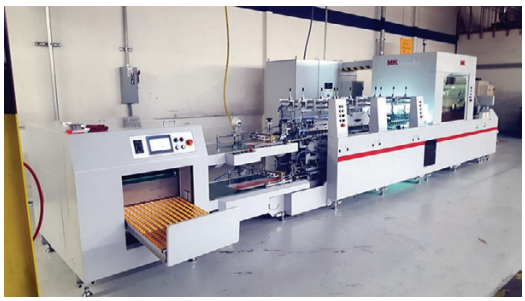
"When it comes to our other postpress equipment, we are not able to check everything on one piece of equipment," said Salazar. "The capabilities of the Diana Eye are incredible. We can do it all: print quality, color, gloss and special coating effects, foil application, metalized surfaces, windowing verification—many processes that we had to hand inspect before. That's really what drove me to purchase this machine for our business."

The heavy demands of the packaging industry, such as new, advanced embellishment techniques and the strict guidelines of the pharmaceutical industry, made the Diana Eye an easy choice, as the machine was actually designed with both industries in mind.

"I'm excited to be able to confidently provide my customers with 100% inspected boxes," said Salazar. "Our customers can be sure that they are getting what they paid for with the Diana Eye."

Thanks to the inline ejector, all defective blanks are removed but are not damaged. This means that they can either be resorted by hand, or by the Diana Eye itself—this is important during first time set-ups, when the sensitivity is defined. For repeat jobs, all accuracy settings can be stored.

While the Diana Eye is Utah Paperbox Company's first Heidelberg machine, the company is very familiar with Heidelberg's dependable, top-notch SystemService that is provided with their purchase. Heidelberg has the largest service coverage in the industry and offers a wide range of technical and performance services to ensure that customers are getting the most from their equipment. The wide network means that close-by technicians are readily available to help customers in need.



"Heidelberg is behind the product, and Heidelberg is servicing the product," said Salazar. "I believe that will keep the equipment robust for many years. The name 'Heidelberg' is what made the decision of purchasing this machine easy."

In other news, as of April 2018, Gallus will be fully integrated with the Heidelberg USA team in order to increase market coverage and efficiency in sales and service.

With this transition, Gallus customers will have access to the entire product and service portfolios of both companies from a single source. Customers will be able to retain their existing sales and service contacts with Gallus and continue to benefit from the specialist industry expertise, but they will also now have the comprehensive know-how of Heidelberg and the industry's largest service network at their fingertips.

The integration plan will allow Gallus/Heidelberg to strengthen its footprint in the North American label market. Since the Gallus Group was integrated into Heidelberger Druckmaschinen AG in 2014, joint technical developments have already taken place, such as the Gallus Labelfire digital label printing machine.

"Gallus has been selling its products in the US for many years," said Christof Naier, Head of Business Unit Label. "Now we have the unique opportunity to be stronger in the U.S. market by combining the best of both organizations, without losing the Gallus touch."

Heidelberg/Gallus will provide customers with a complete print shop solution including reliable equipment, parts, service and consumables support. With 24/7 call intake, customers can expect quick reaction time. They will also receive fast technician scheduling due to Heidelberg's established service network and extensive parts availability as well as timely delivery coordinated by Heidelberg's experienced parts department and local warehousing in the United States.

*See MEMBER page 43*

# PATRON SALUTE

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## MEMBER

*Continued from page 41*

Heidelberg's performance offerings will also be extended to the Gallus product line, including performance services for maximum output, predictive monitoring for preventive maintenance and reliable production, and Heidelberg Assistant for customers to conveniently manage their business.

"Customers' requirements for efficiency in all manufacturer and supplier sectors are increasing due to the growing digitization in the print media industry," said Felix Mueller, President of Heidelberg Americas. "In response to the changes in our industry, this move is a key signal of partnership with our current and new customers in growing profitably in the label market segment. We are very excited to participate in this dynamic market segment."

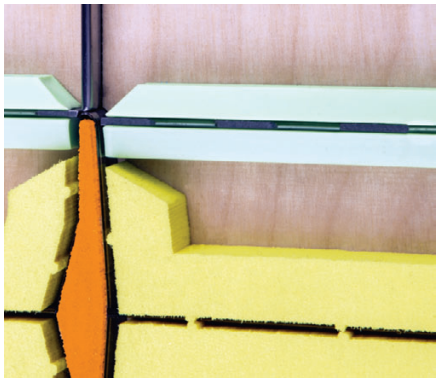
Contact: Rebecca Melville, Heidelberg USA. Phone 1-770-419-6518; Email rebecca.melville@Heidelberg.com.

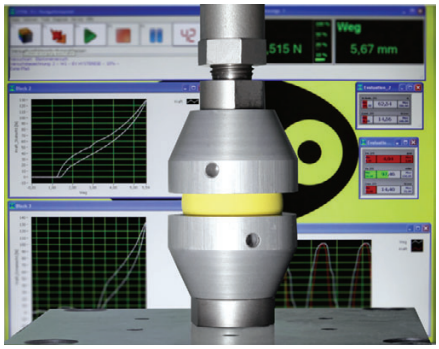
### Certified Materials for Your Cutting Die—CITOject F

Are the materials in your cutting die safe with respect to food packaging? With a view to everyone's health, it is of course essential that only safe packaging is used to pack foods. But what good is this if the safe cardboard or corrugated board is contaminated during processing? This is why legislation is focusing more and more on materials that come into contact with food and fodder packaging during processing.

CITO has understood that its customers are increasingly having to face up to this responsibility. European legislators are currently taking a critical look at the possible release of contaminants during the use of plastic materials in the diecutting process. This practically affects all ejection materials that are used on cutting dies. After all, these do in fact come into contact with the packaging during the diecutting process. Therefore ejection materials can pass on contaminants to the packaging. Unfortunately, in our industry, materials that were not developed for this application on cutting dies, are normally used. Consequently, it will be extremely difficult to obtain a safety declaration.

This is why CITO has been working on developing special ejection materials for the packaging production process for many years now. This relates both to profiles for special technical uses and to plates too, such as are used widely on cutting dies. Developing these kinds of materials oneself, it is clear that we are not concerned solely with the material's safe use in the food industry but also with optimizing the performance during the diecutting of the packaging. The specific requirements of the packaging industry have been taken into account here: better compressibility to reduce the cutting pressure, quicker reaction to make the cutting process safer and to avoid interruptions in production, minimize horizontal expansion in order to support holding points, and of course a lower weight too so as to facilitate handling of the cutting dies.






Millions of pieces of data have been analyzed during the development of the CITO ejection materials, data that was gathered specifically from the cutting process for packaging made from folding boxboard and corrugated board. The development process also included endurance tests on our own simulation systems, a high-speed video analysis of the cutting process and of course, innumerable practical tests on diecutting machines. One result of these many years of development work is the ejection material CITOject F. This material is miles ahead of any other elastomer. The demand for this material, which has been specially developed for cutting dies, is increasing rapidly. It goes without saying that CITO also considered the material's safety for the production of food and fodder packaging during its development from the very beginning. This is why CITOject F has corresponding safety declarations from the ISEGA testing and certification institute.

But this is not all by a long chalk: CITO is constantly pursuing an integrated approach that also includes the production process for the tools. What is important here is a closed structure of the material so as to avoid any contamination during cutting with a water jet. In addition, only adhesives that are safe too may be used. Cyanoacrylate adhesives are still being used in the production of cutting dies, an absolutely absurd situation in connection with food packaging. This is why you should use CITOject F with EasyFix—both of which have been classified as safe by ISEGA. The difference in price to conventional ejection materials is marginal, and even if a cutting die does cost slightly more, this possible disadvantage will be more than compensated by the higher productivity. So you can use safe materials and at the same time increase your productivity. So why wallow in the past and continue to use unsuitable materials and toxic adhesives? CITOject F—the solution for the present and the future.

Contact: Martina Zue, CITO-SYSTEM GmbH. Phone 49-911 95885 0; Email martina.zue@cito.de.

## CSW: Family-Owned Manufacturing Company adds New Jobs in 2018

CSW, Inc. plans to increase staff at Sylvania, OH, USA facility to meet growing demand.

Packaging prepress provider CSW, Inc. plans to invest in diemaking equipment and triple its staff in Sylvania, OH this year. The family-owned manufacturing company produces flexographic printing plates and steel-rule cutting dies in MA, NY and OH, USA.

"Our Ohio location was added in 2006, and has been a solid contributor to CSW's expansion into the Midwest market for corrugated print tooling," notes CSW President Scott Ellison. "Recent years have seen a lot more opportunity in producing tooling for corrugated die-cutters in this area, so we are upgrading and adding personnel to meet demand."

Established 80 years ago in Massachusetts, USA, CSW has evolved from a small manufacturer of metal engraving plates to a multimillion-dollar packaging prepress company. In addition to producing tooling for corrugated package printers, CSW also works with brands and flexible package printers to prepare color-managed artwork, 3D renderings and packaging mockups.

CEO Laura Wright, whose grandfather founded the company, observes, "Because we continue to diversify our product and service offerings, invest in R&D and develop our people, CSW has lasted for three generations of family ownership. We're hoping to keep it going for future generations, too."

Contact: Scott Ellison, CSW, Inc. Phone 1-800-800-9522; Email scotte@cswgraphics.com.

*The Cutting Edge* periodically publishes press releases and corporate announcements of general interest to the diecutting converting industry. These announcements are obtained from the companies themselves and a variety of other sources, and *The Cutting Edge* does not endorse any products or statements contained in press releases and cannot vouch for their accuracy. All product, trademark, company or service names mentioned herein are the property of their respective owners.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# CHAPTER UPDATE

*Plug into the powerful world of IADD Chapters and maximize the value of your IADD membership!*

## Central Big 6 Chapter

### Technical Meeting & Bowling

You're invited! The IADD Central Big 6 Chapter welcomes Butch Schomber of RotoMetrics to present on "Flexible Dies." The presentation will begin with a discussion on what is new in flexible dies, which will take and in-depth look at flat bed converting, full rotary label converting and sheet-fed rotary converting. Then Butch will discuss solid dies, web converting for web fabrication and slug removal, air eject, pin eject and vacuum dies and anvils. The presentation will be followed by dinner and bowling.

Date & Time: Thursday, May 31, 2018, 2:00—6:30 PM

Location: PINSTACK Las Colinas, 2750 W. Lyndon B. Johnson Fwy, Irving, TX 75063 USA

Registration Fee: $64.00 USD per Member; $69.00 USD per Non-Member (Deadline: May 7, 2018)

For more information or to register, visit www.iadd.org/?events or contact Chapter Coordinator Juliana Leprich at 1-815-455-7519 or by email at juliana.leprich@iadd.org.

## Upcoming Meetings

### Save the Dates!

More meetings are in the works! Keep the following dates in mind as you watch for more details in *The Cutting Edge* and on the IADD website at www.iadd.org/?events.

### Lake Michigan Chapter—11th Annual Golf Outing

Date & Time: Tuesday, June 19, 2018, 10:00 AM

Location: Bartlett Hills Golf Club, 800 W. Oneida Ave., Bartlett, IL 60103 USA

### Rocky Mountain Chapter—Technical Meeting

Date: Tuesday, May 22, 2018

Location: To Be Announced, Denver, CO, USA

Proposed Topic: "Foil and Diecutting Efficiencies" by Ross Hutchison of UEI Group

### South Chapter—Technical Meeting

Date: Thursday, June 21, 2018

Location: To Be Announced, Atlanta, GA, USA

Proposed Topic: "Die Ejection: How to Achieve Speed and Accuracy in Your Diecutting Operation" by Dave West of Essential Products

For more information, visit www.iadd.org/?events or contact Chapter Coordinator Juliana Leprich at 1-815-455-7519 or by email at juliana.leprich@iadd.org.

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