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Printing, like all manufacturing, is about increasing production, reducing waste and improving quality. All flexographic printers look for ways this can be done, especially when it comes to investing in a new machine. Truth be told, all major press manufacturers subscribe to similar sets of key performance indicators (KPIs); they simply identify them by different names.

At FTA member Poly Print Inc, long, small and medium jobs are all accommodated. Job value on small- and medium-sized runs is not usually high, and margins tend to be very tight. As such, changeover time and reduction of setup waste are extremely important.

They say presses come down to two major things: tension and ink. That isn’t too far from the truth. It is a printer’s challenge to conquer the art of matching target color on the first pull, sustaining consistent color throughout the print run and maintaining clean print. Many offline tools help measure quality and color, as well as help report on it. Over the years, spectrodensitometers have become more sophisticated, as has the software accompanying them.

Prepress has made progress by leaps and bounds with software that helps manage separations. Evolution of anilox technology for better ink laydown, higher linescreen printing, and even the methods to clean and maintain the rolls allow printers to hit targets and lay down vibrant colors. Continual improvement of printing plate technologies has made flexo a force to be reckoned with when compared to gravure, litho and offset. Flexo can now print at linescreens for which all the other printing methods were known.

There are so many different options available when designing and building a new press. It seems that most press manufacturers have an answer for nearly everything you could want or think you want. As a printer, it’s important to evaluate which options are going to be best.
for the markets you currently serve or want to serve. Most of these options come with heavy price tags, so while you may want to have every feature available and be able to say to your customers you can do something, be aware that it’s very expensive to do so. If you don’t have the market for it, it’s likely not worth spending the money on.

For some of the markets Poly Print Inc services, including food packaging, pet food and beverage, we noticed traction with spot gloss or matte varnish overprint. In some cases, we have had interest in printing on both sides of the web. With that, we invested in a re-insertion feature that allows us to print one side of the web and then put the roll back on the machine to print the other side. This is very popular in premium snack food brands and pet foods.

FEATURES & FUNCTIONS

Having all the right offline tools in place is just one important piece to solving the printer’s challenge. By themselves, and even together, these tools are useless. A press is what brings them all together to do their jobs. Having a machine that works in tandem with these tools is really the foundation to take a printer to the next level.

Our newest press, a 10-color, 44-in. Uteco Onyx, did a good job addressing the issues, thanks to some new features—one of them being an automatic washup system. This was a major jump from having to manually wash each individual deck, one by one. Wash-ups are done in a fraction of the time, are much more thorough and are performed with the touch of a few buttons.

Next on the list was setting registration and impression. Traditionally, that was accomplished with a skilled operator standing or balancing in an area at the press where there was good visibility of the web. Here, the operator could make adjustments via pendants to alter registration up and down and side to side. For older presses, this was accomplished with knobs to move the decks in and out. The process was done with the press moving, slowly, addressing each individual color one at a time. Either simultaneously, or after the operator had the job in register, the impression setting for each print deck was done.

The speed of this process was heavily reliant on operator experience and skill. With most press manufacturers recognizing this as a major area for improvement, their sights were set on making this process more efficient and accurate. The results of their focus work quite well and for the most part can set up jobs of up to 10 colors in record times. There are occasional jobs that do require adjustments to be...
made by an operator. The key to making these technologies work to their design is operator training, implementation and enforcement.

In addition to the washup and auto-register and impression-setting systems, there are a host of other new technologies and parts that help with fast changeover, short runs and waste reduction. Specifically, a completely redesigned and re-engineered doctor blade system that allows for consistent ink flow to and from the buckets, within the chamber and from the chamber to the anilox, has reduced ink starving, anilox scoring and chamber pressure. Toolless doctor blades allow for faster changing of worn blades and seals, and reduced downtime. Viscometers now measure ink viscosities based on vibrations and require little to no maintenance.

We opted for shaftless turrets at both the unwind and rewind. What we noticed here is that loading and unloading rolls is much faster and much safer. Gone are the days where the helper “forgot to put air in the shaft” and rolls at the rewind would exhibit telescoping or have poor conformity. Although this was quite a large expense, we are in here for the long run and wanted to make the job easier for current and future operators.

ACCESSIBILITY

Installing, trial testing and ramping up a press is not a simple task. There are many things to consider that may not be obvious to one who has never done it—foundation support, sleeve inventory, utility requirements and anilox selection are just a few.
Who is going to operate the press and peripheral workflows that affect production efficiencies? That’s a question that must be answered. At Poly Print Inc, we are fortunate to have installed our third printing press (along with multiple laminators, slitters, mounters, pouch machines and a regenerative thermal oxidizer or RTO). As such, we were prepared to onboard and ramp up very quickly when the press was installed.

Machine size and operation were very important considerations when reviewing presses—as they should be—and there are others. So many times, understanding the workflow from the operator’s and assistant’s perspectives are overlooked. Questions must be asked, specifically:

- Does the operator have everything needed at one station to operate the press once running, as well as to make adjustments, maintain and watch quality, and keep an eye on both the press area and its surroundings?
- Is the operator able to see both unwind and rewind turrets from their station to avoid running out of material or watching for good roll conformity at the rewind?
- Does the operator need to be running around the press, frantically trying to manage all these things?

Understanding operator and assistant workflows is paramount to maintaining a calm process, delivering quality product, and having the ability to quickly recognize and address issues as they arise on press. During our quest for a new press, we discovered manufacturer offerings differ vastly with respect to this concern. We found some presses to be large and possibly intimidating for operators and helpers, while some presses were so compact that working on issues required steady hands and a person the size of an elf.

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The press you choose should satisfy all your practical needs, from a maintenance and operator accessibility standpoint to the actual setup and operation. In our case, all 10 ink well stations are in one straight line next to each other, making it easy to view how much ink is left in a bucket. The press is well lit, making it easy to view any possible ink leakage or safety hazards and from the operator station. All the tools to set up, print, adjust and maintain production are at the operator’s fingertips.

We opted for shaftless turrets at both the unwind and rewind. What we noticed here is that loading and unloading rolls is much faster and much safer.

CRITICAL INTERFACES

The internet has connected the world and makes it seem just a little bit smaller. Nowadays, most equipment comes with the option to allow for remote connections directly from the manufacturer right to the machine. We have seen this with most all the equipment we purchased, from presses to laminators, slitters, the RTO, pouch machines and so on.

New machinery, particularly the press, is so electronically advanced that it can be quite complex to figure out the root cause of maintenance-related issues when they come up. Most companies likely do not have someone on staff experienced enough to understand and fix all the issues that do come up. Having the ability to let the press manufacturer remote into the machine’s computer allows for faster diagnosis of issues and quicker resolution.

Matching color targets and maintaining color throughout the press-run is the challenge with which all printers are tasked. There has been much advancement in offline tools to help measure color, density and dot gain, as well as tools to tell how far off from a color target you are and what to do to bring it back into acceptable range. While the tolerances continue to tighten for customers and brand owners, it is...
ever so important that the tools, prepress and planning are carefully chosen, maintained and monitored.

Press manufacturers have recognized and re-engineered the flow of ink to and from the chambers, the chamber assemblies themselves, and the viscosity controls. It is certainly worth mentioning that quality inspection systems now play a huge role in monitoring color and print quality during the press run. Some of the new quality control (QC) systems are quite advanced and offer 100 percent web inspection to alert operators when there is a printing defect or a color falls out of range.

Ultimately, the key to getting the most from any QC system is training, implementation and enforcement. There has been a tendency for operators to use these units for a camera system only to monitor print quality throughout the run. These systems are so much more advanced now and can offer much more than that. It is up to management to understand fully how these units work and of what they are capable. Maintaining quality and preventing poor print from getting to the customer have become much easier.

TRAINING & SUPPORT

Training and support are at the top of our minds when considering new equipment purchases. Although the new presses out there should be easy to operate, vendor training and support are paramount to a successful install and operation. Some seasoned operators are capable of making a transition to the new presses and technologies. Certainly, the functionality of the machine is far from the days of manual tweaking performed by highly skilled operators. New presses are designed to work without the manual tweaks and continual adjustments to which seasoned operators are accustomed:

- Press components that were traditionally exposed and available for operators to make manual tweaks are now totally enclosed or nonexistent
- Automation, sensors, computer controls and pendants are what operate the press
- Drag-and-drop registration, viscometer control on a touchscreen, and control of deck movements are all done with the touch of a button

There is something to be said about all press components and major moving parts being enclosed in the name of safety. It’s obvious safety was a huge consideration in the new designs and functionality of modern-day presses. Safety should be the No. 1 priority for manufacturers of all kinds; it played a big part in which press we chose.

To say you do not need a skilled operator anymore is simply not true—It is the skill set required to operate the new presses that has evolved. Gone are the days of manual tweaking and adjustments. There are no more knobs and mechanical components that allow for such adjustments. The new machines are designed to be controlled and operated by computers and touchscreens.

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With so many new automations and electronics that operate the machine, we’re not looking for the same person we were all looking for decades ago to operate the press. There is a new generation in the workforce now and the press manufacturers know this. While you may not need a person well-versed in mechanics, you do need a person who has a basic understanding of computers and machine operations.

Proper training and support from the press manufacturer is a must. Follow-up training and pre-established site visits will go a long way toward operational success. Being that most press manufacturers are from foreign countries, it is essential to request trainers who can speak the language of your pressroom team.

Established training programs after initial training is key to longevity for operators and new employees who are added to the pressroom. At Poly Print Inc, our training programs include classroom training, hands-on training, testing, video training, refresher training and more. As always, proper management and enforcement of these programs are what drive its success.

PRINTED SATISFACTION

There is no perfect machine. There are, however, bad machines with bad designs that are not fit for a printing and production world—presses designed to work well in lab conditions, but not on a plant floor. I can say we did not get one of those machines.

About the Author: Joe Genova is vice president of Poly Print Inc, based in Tucson, AZ. The family owned firm specializes in flexible packaging production for a variety of applications, including food, beverage, pet food and nutraceuticals. Founded in 1992, Poly Print Inc operates out of a 77,000 sq. ft. facility and regularly employs between 75 and 80 people.