



NEWS

2nd Quarter 2002

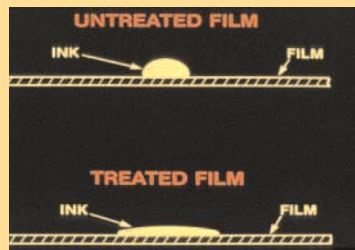
Narrow Web Surface Treating Technology

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Technically Speaking

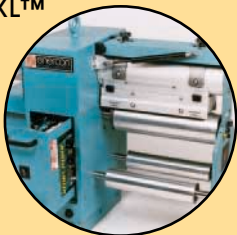


What is corona treating and why do I need it?

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Product Specifications

Easy to install and operate the TL Max™ and XL™



More science and less art makes printing operations more profitable.

Steve Utschig is a man of science. Not that he has anything against art. In fact, he helps people print works of art. But he knows a scientific approach to printing leads to repeatability. And repeatability breeds profitability.

His approach is well grounded and based on his 22 years of converting industry experience. As a Flexographic Printing Instructor at Fox Valley Technical College (FVTC) he teaches press operators how to take control of their printing process. Enercon Sales Manager Rick Young recently caught up with Steve at FVTC and took the opportunity to explore some of the key issues facing flexographic printers.



Fox Valley's Steve Utschig and Enercon's Rick Young in front of a Mark Andy press outfitted with an Enercon treater.

RY: What is the most common cause of down time and waste on a printing press?

Steve: It's the lack of preparation that goes into the job, based for the most part on the lack of understanding of how the flexographic printing process works.

RY: How do you control the process?

Steve: First you need to recognize the variables and determine which are within your control. There are too many interactions to control 100% of the variables, but with a scientific approach you can efficiently produce print jobs that are profitable and repeatable.

RY: What constitutes a scientific approach?

Steve: Knowing why you're doing something is critical. I'll ask a press operator why he did something and too many times I hear "because it works" or "that's the way we do things here." That's not an acceptable answer.

A scientific approach is grounded in understanding cause and effect. In order to do that you need to maintain a historical record of press jobs. It serves as a reference and it's invaluable when it comes to troubleshooting a job in the future. So whether it's first shift or third shift you can expect the results to be consistent.

RY: How do you properly set-up a job?

Steve: First, always review the job history or jacket to see if there were any idiosyncrasies when you've run the job in the past. There may be details you have forgotten or even another operator's notes that might tip you off to a potential problem.

The other way to prevent avoidable problems is to make sure to do a pre-flight check. It's an important step that, along with proper press maintenance, pays long-term dividends.

RY: Is ink control often overlooked?

Steve: Not only overlooked, but also misunderstood. Most printers don't use or get enough information from ink suppliers about the ink systems they use. Controlling the ink's recommended viscosity and PH levels for water based printing, and solvent blends for alcohol-based printing is critical.

And you can't mix and match ink systems and predict the outcomes. Each ink system has certain additive mix requirements based on its resin blend to perform, whether it be scuff resistance, heat resistance, etc...

Measuring and documenting are critical. Concocting a "witch's brew" without guidelines and documentation will yield unrepeatabile results.

Of course, once the ink is under control you also have to make sure your substrate is under control.

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Specify Enercon. From the ordinary to the extraordinary.

Why do I need Corona Treating and how does it work?

Corona treating increases the surface energy of plastic films, foils and paper to improve wettability and adhesion of inks, coatings and adhesives.

Treating works best when a substrate is treated at the time of extrusion and in-line prior to converting.

Corona treating increases quality and productivity through improved print quality, faster press speeds and less scrap.

Read on for more details.

why do i need it?

Polymer films have chemically inert and non-porous surfaces with low surface tensions causing them to be non-receptive to bonding with substrates, printing inks, coatings, and adhesives.

Pretreated films, that is films that have been surface treated at the time they were produced, exhibit a higher surface energy that is crucial to producing quality printed, coated or laminated products.

Film that is not treated at the time of production will not accept printing, coating or lamination well. The opposite is not always true. Even if film is treated at the time of production, it will not always guarantee that printing, coating or laminating will be easily accomplished at any future time.

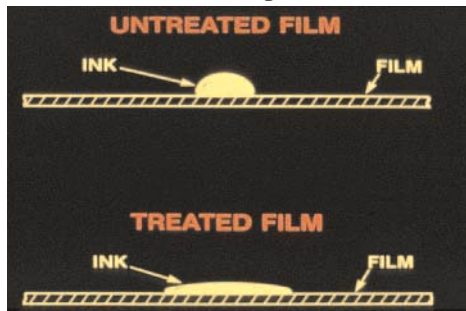
Each film type has an inherent surface energy (dyne level) that can be increased through corona treatment at the time of production. This level of treatment diminishes over time. So, film that can be easily printed and coated immediately after production can, within a few days or weeks, lose sufficient surface energy to become unprintable and uncoatable.

Since it's nearly impossible to guarantee that the film you receive

will be converted within the required time limit, retreating in-line is often a necessity. It's important to note that treating in-line cannot replace primary treatment at the time of production. In fact many films, especially polyolefins (Polyethylene and Polypropylene) are almost untreatable when they set after production.

To ensure consistent quality, use films that have been treated at the time of production and retreat in-line. In order to make a product that is of acceptable quality to the converter and to the end customer, the substrate must be corona treated twice:

1. At the time of production.
2. Prior to converting.



For best results use pretreated film and treat again in-line.

how does it work?

A corona treating system is designed to increase the surface energy of plastic films, foils and paper in order to allow improved wettability and adhesion of inks, coatings and adhesives. As a result, the materials treated will demonstrate improved printing and coating quality, and stronger lamination strength.

A corona treating system consists of two major components: the power supply and the treater station.

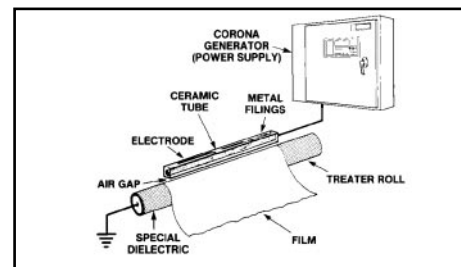
The power supply accepts standard 50/60 Hz utility electrical power and converts it into single phase, higher frequency (nominally 10 to 30 kHz) power that is supplied to the treater station.



A corona treating station with power supply and remote control.

The treater station applies this power to the surface of the material, through an air gap, via a pair of electrodes at high potential and roll at ground potential which supports the material. Only the side of the material facing the high potential electrode should show an increase in surface tension. (If treatment is applied to the other side of the material it is referred to as backside treatment.)

A corona treating system in its simplest form can be portrayed as a capacitor. Voltage is applied to the top plate which, in the case of a corona treating system, would be the electrode. The dielectric portion of the capacitor would be made up of some type of roll covering, air, and substrate in the corona treater.



Power is applied to the surface of the material through an air-gap.

The final component, or bottom plate, takes the form of an electrically grounded roll. In the corona treating system, the voltage buildup ionizes the air in the air gap, creating a corona, which will increase the surface tension of the substrate passing over the electrically grounded roll.

Enercon Narrow Web Surface Treaters are shipped ready for action

Adding a new component to your press is an exciting experience. Visions of improved quality and efficiency abound as you uncrate your new piece of equipment.

If the crate has an Enercon label you can be assured that your start-up will be a smooth one.

The systems are delivered ready to run and easily mount onto your press. Our standard designs fit virtually every press imaginable. And if you have a unique requirement we can customize the system to make mounting the unit a simple process.

Setting up the system for first time use is just as easy. Enercon's TL Max™ relies on the Compak™ 2000 power supply for power. As its name



Quick connections make for fast power supply installations.

implies this power supply is ultra-compact and can be conveniently mounted in virtually any location. The Compak™ 2000 features quick connections for all system in/out, safety and optional equipment interlocks.

The all-in-one XL treater is even simpler to install. The system's power

supply is built into the treater. Just add power and you're ready to go.

Simple Station Operation

Both the TL Max™ and the XL™ systems provide narrow web operations with the reliability required for maximum uptime and productivity.

Set-up: Hinged electrode assembly is counter-balanced for easy threading.

Operation: High-powered ceramic electrodes provide reliable and efficient performance without dielectric roll coverings. Air flow sensor monitors exhaust stream.

Treating power: Unique electrode designs offer more power capacity per electrode.

- Power Electrodes:

Deliver 40% more treating power than standard Bare-Roll ceramic electrodes.

- Power² Electrodes:

Available for the TL Max™ deliver 100% more treating power and dwell time than standard Bare-Roll ceramic electrodes. No other electrode type treats to higher levels.

Cleaning: Pivoting electrode assembly promotes up time with easy clean-in-place design.



The XL™ treater features a built-in power supply.



Easy access assemblies make set-up a snap.

Maintenance: Removable electrode cartridge requires no tools, realignment or air gap adjustment. Hinged and slip-off electrode cartridge makes all preventative and other maintenance functions simple and quick.



Easy to use power supply interfaces.



Power Supply Control

The remote power supply interface that comes with the XL™ features the same interface as the Compak™ 2000, which powers the TL Max™. It's well-proven design provides operators with all the information they need in a clear and logically laid out format.

For more info on these products e-mail us at enews@enerconind.com.

Why converters use Enercon Corona Treaters

We hear many reasons why converters corona treat and why they rely on Enercon.

Here are a few of the more common reasons:

Why Corona Treat?

- Improve our print quality
- Run new materials
- Reduce product waste
- Avoid pinholing
- Increase press speeds
- Guarantee surface energy
- Take control of our process

Why the TL Max™ or XL™?

- Reliable power supplies
- Max treating power per electrode
- Hinged electrode for easy-set up
- Compact design
- No tools set-up and maintenance
- Quick connect power supplies
- Competitive price

Why Enercon?

- Reliable equipment design
- Application expertise
- 24 hour support
- Worldwide sales and service
- Reputation
- Responsiveness
- Value

More science and less art...continued from page 1

RY: How do you control the substrate?

Steve: Whether you're using water or solvent based printing you want to ensure the surface energy of the substrate is as consistent as possible. The best way to guarantee ink adhesion consistency is with a corona treater.

RY: Do many solvent printers reject the idea of treatment.

Steve: If there are printers who think that, then they should possibly reconsider their thinking. Films are pretreated, but they're not guaranteed to be perfect when it comes time to print. Treatment degrades over time so that's one issue you have to contend with. Even if the



For more of Steve Utschig's insights visit www.enerconind.com/enews/features/fvfc.html

film makes the grade on a dyne test you still have the possibility of additives rising to the surface. These surface imperfections can result in pinholing and other quality issues. A corona treater can help to eliminate these problems.

RY: So you would always have a treater on your press?

Steve: Absolutely. For the price and quality assurance they give you they're a great value. Besides it only takes one or two rejected jobs or quality issues to justify the cost of a treater. Whether I had a water or solvent based press operation I'd have a corona treater on it.

More Info Available On-Line

www.enerconind.com/enews/features/fvfc.html

Log onto Enercon's website for more of our conversation with Steve Utschig, including his insights on setting up a press and common mistakes to avoid.

You'll also find more information on Fox Valley Technical College.

2002 Upcoming Events

Info Flex & FTA Forum
Booth #114
Washington, D.C. May 5-9

TAPPI
Film Extrusion and Coextrusion Short Course
May 20-22
New Orleans, LA

TAPPI
Troubleshooting Short Course for Extrusion Coating & Flexible Packaging Converters
June 3-6
Green Bay, WI

CEMA Annual Meeting
June 25-29
Lake Tahoe, NV

Chinaplas
September 9-12
Shanghai, China

TAPPI Fall Conference
Presenting Paper
September 10-12
Boston, MA

TLMI Annual Meeting
November 3-7
Las Vegas, NV

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