

MAINTENANCE

Surface Treating Technology

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www.enerconind.com/treating

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Compak™

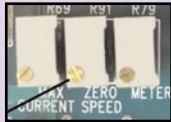
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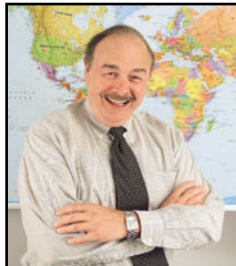
2004

Maintenance

Handbook



Everyone's Talking: Customer Service



Ted Cox

Vice President

At Enercon we're proud and confident when we say we're different. In fact, think about the newsletter you're reading right now. How many other suppliers provide you with a newsletter dedicated to your maintenance responsibilities?

It's critical that you're aware of all the resources Enercon has made available to you. It all starts with your ability to tap into our knowledge base free of charge. This benefit is as close as your telephone. And our lab is also available free of charge. We'll help you sort out those pesky wet-out and adhesion problems that always seem to crop up, or test your materials to determine the best surface treatment system for your needs.

These days it seems like Customer Service is all the buzz. Everyone's talking about it, but talk is cheap. Too many companies *over* promise and *under* deliver when it comes to customer service.

Did you know our sales team has more than a century of experience in the packaging and converting industries among them? They are always willing to listen and to help. If they can't give you the answers you seek, they can almost always point you to someone who can.

Our after sale service can't be beat either. Telephone support (a real live person) for your technical questions is available to you 24/7/365...and absolutely free of charge. Technical assistance can be dispatched to your site as soon as you determine that it is required. Our web site is chock full of application and maintenance information just waiting for you to access it, and Preventative Maintenance Service is available to you whenever you want it...at a 20% discount from our normal service rates.

We've got a lot to offer and we hope that you have had the chance to give us a try. If you haven't, please do...you won't be disappointed. Call us at 262-255-6070 and give us a challenge. You'll be surprised at how quickly and how well we will come through for you.

Frequently Asked Questions

Will a system from another location work on my line?

Each corona system is sized according to the specific material to be treated and with the desired performance results based on the customer's specific required parameters. The power available for each system is predetermined by the materials it is intended to be used with. In order for the system to perform, difficult to treat material or operation at extremely high line speeds will require higher available power capacity.

System design is developed from a few basic fundamental parameters: web width, line speed and required treat levels. Ground roll coverings and electrode type dictate the physical size and number of assemblies required to apply the necessary energy to the material width at the required line speeds to achieve the desired treatment. Of

Continued Page 3

Did You Know?

Did you know that Enercon's power supplies are universal by design? Our power supplies can be used on a wide variety of applications and with non-Enercon treaters.



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The Power of 
 Technology. Service. Expertise. Personnel.

Compak™ 2000 Zero Speed Adjustment

A treater's zero speed range is very useful if you are running material at a low line speed and don't want to treat it. However, if you are trying to treat at low line speeds, you need to be sure the zero speed range is not set too high.

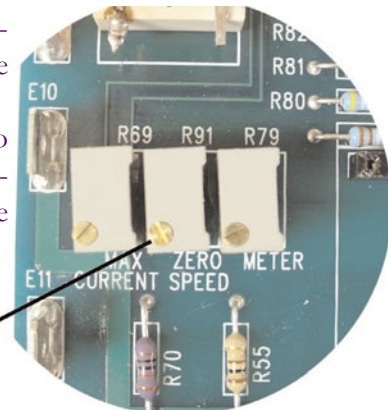
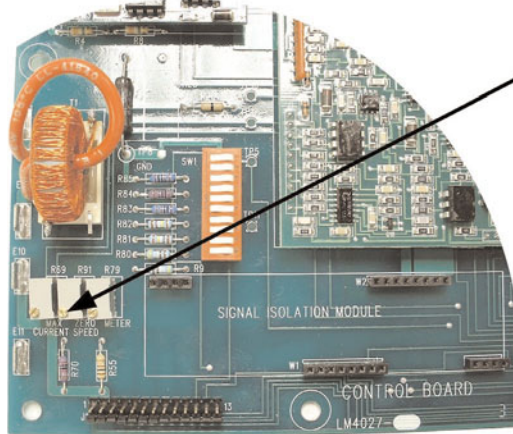
The Series 2000 power supply has an internal zero speed interlock. This interlock will not allow the power supply to start until a preset speed is achieved. In other words, the unit will not treat any material that is running under the preset speed whether the line has just begun running or has been running previously and has just decreased below the preset speed.

Generally the line speed is factory calibrated to 30 feet per minute. Depending on the line operational requirements, this may require field adjustment. This adjustment is a very simple procedure, only requiring the adjustment of a single potentiometer at your lowest line speed.

The speed circuit on the LM4027 control board (pictured) signal comes from the sensor mounted in the station. This sensor develops a pulse rate from either a 60 tooth gear, an

encoder (proportional speed) or from the bolt heads on a wheel (zero speed) attached to the ground roll. The speed range for the interlock can be adjusted using the potentiometer, R91 - ZERO SPEED, on the control board (Detail "A"). Turning the potentiometer clockwise will increase the zero speed set point, and conversely, turning the potentiometer counter clockwise will decrease the zero speed set point.

After making any adjustments to the zero speed set point, ensure that the power supply de-energizes when the line speed falls below the desired speed or when the ground roll stops.



Detail "A"

The speed range for the interlock can be adjusted using the zero speed potentiometer.

e Quiz

Take the Corona Treating Challenge

Test your knowledge on Corona Treating. The answers for these questions are found on page 4. Congratulations if you answer all of them correctly.

1. T/F Dyne levels of treated materials are permanent. Substrates retain their initial treat indefinitely.
2. T/F Because the corona system has an exhaust blower, it is essentially a vacuum cleaner and therefore self-cleaning.
3. The most common source of preventable problems for corona treater stations and power supplies is:
 - A. Low input voltage
 - B. High input voltage
 - C. Dust and dirt build-up
 - D. Corona treater salesmen
4. T/F Before performing any maintenance on the corona treater station or power supply, insure that the system power switch is off and that the electrical disconnect is off and properly tagged.
5. If you call Enercon for service, parts, or technical advice, the technician will need to know the nature of the problem you are experiencing and
 - A. The weather forecast for Salem, Ohio
 - B. The color of the unit in question
 - C. Your Visa account number and PIN
 - D. The Model and Serial number of the unit in question

Frequently Asked Questions

(continued from page 1)

course cost is always a consideration, but performance and treatment requirements ultimately play a major role in the decision.

The type of ceramic electrode: round, rectangular or PV, stainless steel tube, segment, or finned aluminum all have a maximum amount of energy (in Watts) that can be discharged per linear inch. The type roll covering: epoxy, bonded silicone, silicone sleeve or ceramic have a specific amount of surface area necessary per kilowatt of power to safely operate. Provided with the line specific parameters of material, treat width, line speed and application required treat levels, the system's remaining size factors are derived. The roll diameter is determined by the type roll covering used or if added spacing is require for electrode assembly placement around the ground roll.

The electrode type is generally a customer specification, but can be dictated by the type of material treated (i.e. a metal electrode cannot be used to treat conductive substrates).

Many manufactures of films are consolidating or re-using "moth-balled" equipment. In some cases, this practice is possible. However, it is important to understand that the original material specifications determined the design of that treating system. Often the "shelved" unit may not fit the specification needs for the application.

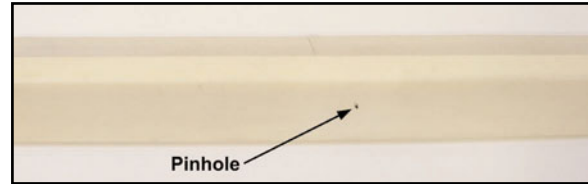
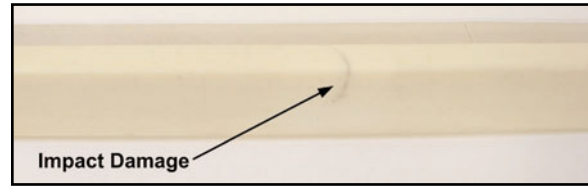
With summer approaching what can I do to ensure optimum performance from the treater?

The majority of corona treating system problems are a direct result of station failure. Problems in the power supply usually are the ultimate result of station breakdown. Dirt, moisture accumulation and film residue create a destructive combination resulting in high voltage breakdown. Blocked cooling paths, dirty electrodes, and build-up on electrode insulators and high voltage component supports all are potential points of failure. The best action to ensure reliability is keeping these areas clean.

Why are the electrodes failing?

Electrode failures are usually a result of either physical contact, or inadequate cooling. Each type of failure exhibits specific tell-tale signs as to the cause. Physical damage, seemingly obvious, may not be so in all cases. Upon close examination however, usually hairline fractures are visible emanating from the area of impact. Also, the more common sign is the electrode is fractured around the circumference of the tube, not along the length.

Failures that result due to heat as a consequence of inadequate cooling are usually focused or form a pin point, hence the term pinhole type failure. The electrode heat results in a



mechanical failure of the ceramic dielectric. These type failures usually result in a specific or concentrated failure point due to heat build up. Cooling related failures that occur where the cooling passages are blocked off are easily understood.

Electrode failure near severely carbon tracked insulating shroud, or near the edge of the web are also a result of heat related failure. In both cases, the impedance of the carbon tracked shroud, or the open area outside the web path is less than the impedance offered to the overall length of the electrode, resulting in a greater amount of energy discharged in the smaller area. A breakdown or pin-hole in the dielectric occurs.

Can electrodes be repaired?

If the ceramic is broken or pin-holed, the electrode is not repairable. If the high voltage lead or mounting tabs are broken or damaged and the ceramic tube is complete, the electrode can be repaired. Credit may apply for useable length of ceramic.

What Information should be provided when calling for parts, service or technical assistance?

It is good practice to have the model or serial number of the unit available when calling for parts or service. This information helps our engineers and Customer Service Team to rapidly provide assistance, and ensure the parts are correct for the specific system in question. The system serial number is located on the red Enercon Industries label placed inside the power supply cabinet door, on the station, or on top of the high voltage transformer.

enercon
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Menomonie Falls, Wisconsin 53051
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RATING		PAT. NO.	
MODEL	LMXXXX-XX or IMXXXX-XX	MFG	
SERIAL	XXXXXX-XX or CXXXXX-XX	ID	
INPUT		OUTPUT	
VOLTS			
AMPS			
FREQ			
PHASE			

The serial and model numbers are located on the Red Enercon label.

Enercon Support Services

Preventative Maintenance

Let our PM Team tune-up your team's operating, maintenance and trouble-shooting techniques.

Receive audit reports with recommendations for your equipment and spare parts inventory.

Global Technical Service

"Hot Line" technical support is available 24/7/365. Prompt, world-wide field service is always at your disposal.

Web Support

Visit our web site

www.enerconind.com/treating for the latest interactive trouble-shooting tips, including diagrams and step-by-step instructions.

Free Testing

Use our Surface Treating Laboratory and application expertise to test new materials and applications.

Start-up Assistance

Ensure you're up and running quickly with the assistance of our Applications Specialists Team. Let our Team train yours throughout the entire start-up phase.

Training

Hands-on training courses are available for your personnel free at our factory. Utilize operational models at our testing facility to simulate line conditions.

e Quiz

Answers to the Corona Treating Challenge (from page 2)

- 1. False**
Generally, dynes levels decay slowly over time.
- 2. False**
The exhaust will draw any debris or dust in the atmosphere, and some of it deposits onto the high voltage areas in the exhaust path. This must be periodically cleaned to prevent alternative paths to ground for the high voltage.
- 3. C**
Dust and dirt build up, along with humidity, create alternate paths to ground.
- 4. True**
Always follow electrical safety precautions.
- 5. D**
The model or serial number identifies the correct system.

e New Publications

Free Maintenance Handbook

Have you received your copy of Enercon's 2004 planner? If not, or if you would like to receive additional copies please contact Rob Kerr or Paul Reed at (262) 255-6070, or e-mail us at enews@enerconind.com.

This year's planner includes:

- ☒ 14-month maintenance schedule
- ☒ Parts lists and system drawings
- ☒ Operation & troubleshooting tips
- ☒ Information on free lab testing
- ☒ Key contacts & address book



Contact us today-supplies are limited.



MAINTENANCE **Surface Treating Technology**

www.enerconind.com/treating

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3rd Quarter 2004

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