

# Enercon Atmospheric Plasma Surface Treating



Pictured with optional interface package.

**The Dyne-A-Mite™ IT effectively cleans and etches surfaces to promote adhesion on both conductive and non-conductive surfaces.**

### Effectively Treats

**ABS ASA EPD EVA HDPE LDPE PC PE PET PMMA  
PP PS PU PVC PBT TPU TPO and many more**  
Also ideal for clean-room applications

### System Features

- **Easy Operation** - Operator friendly controls
- **Remote Start/Stop**
- **Rugged Continuous Duty Power Supply**
- **Safety Interlocks**
- **Communication interface cable-** for remote operation, loss of treatment indicator, safety and operational interlocks.
- **Advanced protective circuitry** monitors and protects against over current, under power and air flow.
- **Virtually No Maintenance**
- **Dual Head Option** - can be aligned to increase treat width, extend dwell time, or be used to treat multiple angles.
- **Optional Tri-functional Treater Switch**

The new Dyne-A-Mite IT™ delivers highly effective treatment for a wide variety of applications. It is simple to use, cost-effective and a safe treatment solution for a wide variety of applications.

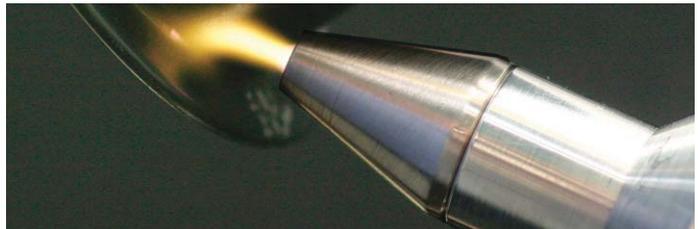
It generates a concentrated blown-ion discharge that bombards a material surface with a high-speed discharge of ions. Positive ion bombardment facilitates a micro-etching or scrubbing (ablation) effect which can remove (desorb) organic and inorganic contaminants from the surface of an object.

Without changing the substrate morphology, the system successfully changes the mechanical and chemical properties of a surface. It cleans surfaces and initiates cross-linking effects.

Blown-ion treatment allows for easier application and improved adhesion of coatings, adhesives, inks, labels and markings of all types. In-line treatment eliminates the need for costly chemical priming, etching and vacuum processes.

Dyne-A-Mite™ IT is highly effective at treating and cleaning all types of polymers, elastomers, glass and even conductive surfaces. Typical applications include removing grease, oil, oxides or silicone; pre-treatment and preparation for bonding, soldering or gluing and pre-treatment for finishing metals.

For speciality applications ask us about our Dyne-A-Mite™ IT with CO<sub>2</sub> capabilities.



### Optional Deluxe Customer Interface Package

Control and monitor process variables with your PLC. Option allows for the addition of a remote panel, provided by user or Enercon, for operator convenience. Other customized features are also offered. (Available on single head models only).

Dyne-A-Mite™ IT Specifications <small>(Specifications subject to change without notice)</small>	Model	Dimensions	Weight	Voltage
	<b>Single Head</b>	10"D x 21"W x 10"H	40 lbs.	120V, 7 Amps/240V 3.5 Amps
	<b>Dual Head</b>	16"D x 21"W x 10"H	70 lbs.	120V, 14 Amps/240V 7 Amps



**Enercon Industries Corp. - USA**  
262-255-6070 / info@enerconind.com

[www.enerconind.com/treating](http://www.enerconind.com/treating)

**Enercon Industries, Ltd. - UK**  
+44 1296 330542 / info@enerconind.co.uk

# Enercon Surface Treating Systems



## How *blown-ion* air plasma treating works:



Blown-ion air plasma systems push pressurized air past a single electrode which discharges inside the treater head. The electrode creates positively charged ions in the surrounding air particles. The air pressure forces the air particles to accelerate out of the tip of the head as a high-velocity stream of charged ions directed toward the substrate surface.

Through direct contact, these particles positively charge the object's surface, increasing its surface energy and making it more receptive to inks and coatings.

Air plasma is a popular surface-treatment technology because it is effective, easy to use and inexpensive to operate.

## Why surface treat?

**Cleaning-** Positive ion bombardment facilitates a micro-etching or scrubbing (ablation) effect which can remove (desorb) organic and inorganic contaminants from the surface of an object.

**Printing-** Surface treating parts prior to printing enhances ink adhesion. It makes printing easier, and for others it makes printing possible.

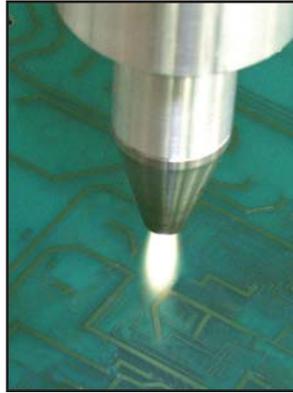
**Painting-** Injection molded or thermoformed parts are often treated prior to painting. Surface treatment allows the paint to adhere and also increases the life and durability of the paint on the object's surface. Reduce scrap and eliminate dust particles, fish eyes, and other surface imperfections.

**Coating-** Products are coated to protect and decorate. Doors, frames, and extrusions/profiles are often coated. The medical industry uses surface treating to improve adhesion of antimicrobial/antibiotic coatings. Reduce scrap and eliminate dust particles, fish eyes, and other surface imperfections.

**Bonding-** Bonding is primarily used to increase the strength of an adhesive. The medical and automotive industries rely on surface treating to remove contaminants such as dust, grease, oils, or mold to improve bonding. Typical cleaning solvents such as methyl ethyl ketone (MEK), trichloroethylene, toluene, or acetone may be used for this purpose, but cleaning agents that leave a film residue upon evaporation will retard bonding.

## Application Gallery

Dyne-A-Mite IT™ is ideal for: Conductive and non-conductive surfaces, Medical applications, Electronics applications, Automotive applications, Thermoplastics, Elastomers and Glass



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## Dyne-A-Mite™



The Dyne-A-Mite™ eliminates the need for chemical priming and etching processes.

Enercon's extensive surface treating product line begins with the economical and effective Dyne-A-Mite™ air plasma surface treater. Dyne-A-Mite™ successfully treats a wide variety of polymers to raise surface energy and improve adhesion and bonding.

Typical results include:

- High quality printing on 3D plastic products
- Clear, readable marking on polymer surfaces
- Improved adhesion of labels to 3D plastics
- Increased adhesion of smooth coatings

### Effectively Treats

PE, PP, PET, Nylon, Vinyl, Polystyrene, Polycarbonate, PVC, and all other type of thermoformed and thermoset plastics.

### System Features

- **Small, Solid-State Construction** - Highly reliable solid-state circuitry for long operating life.
- **Rugged, High-Voltage Power** - Internally mounted high voltage transformer is rated for long-term reliability under continuous duty.
- **Heavy-Duty, Powerful Blower** - Internally mounted blower is rated for industrial duty to provide a continuous high-volume air-stream for maximum treatment level and coverage.
- **Easy Operation** - All operator controls and indicators are easily accessible. Simple power ON/OFF and treatment STOP/START push-buttons require no training.
- **Remote STOP/START** - Terminals available for customer supplied stop and start push-buttons to control treater power from remote location.
- **Remote Cycling** - Terminals are provided for intermittent treatment (cycling) by means of customer supplied switching device(s).
- **Self-Protective** - All internal circuits contain protective elements to prevent serious damage as a result of line transients or overloads.
- **Loss of Treatment Indicator** - Contacts provided for customer to connect indicator device for loss of treatment.

Dyne-A-Mite™ Specifications <small>(Specifications subject to change without notice)</small>	Model	Dimensions	Weight	Voltage
	Single Head	17"D x 18"W x 10"H	55 lbs.	120V, 4 Amps/240V 2 Amps
	Double Head	17"D x 18"W x 10"H	90 lbs.	120V, 8 Amps/240V 4 Amps



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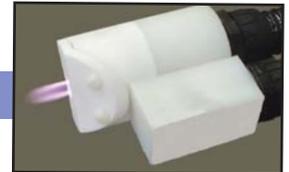
# Enercon Atmospheric Plasma Surface Treating



Blown-arc air plasma is formed by blowing atmospheric air past two high-voltage powered electrodes and is sometimes referred to as corona treatment.

The electrical discharge positively charges the ion particles surrounding it. Through direct contact, these particles positively charge the treated area of the object's surface. This makes the surface more receptive to any applied substance such as inks.

Air plasma is a popular surface-treatment technology because it is effective, easy to use and inexpensive to operate.



## Treatment Head Option

PlasmaAmplifier™ - promotes greater plasma penetration™ into grooves and profiles.

## Why surface treat?

**Printing-** Surface treating parts prior to printing enhances ink adhesion. It makes printing easier, and for others it makes printing possible.

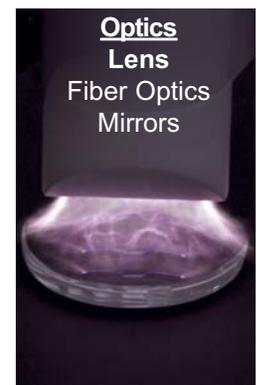
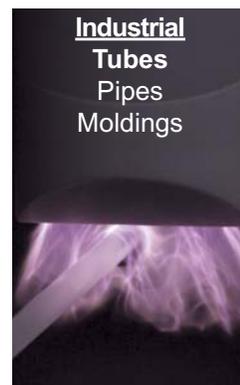
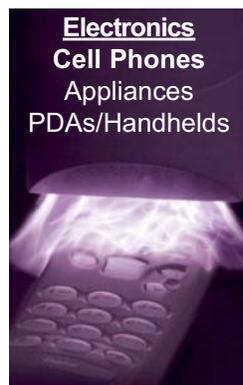
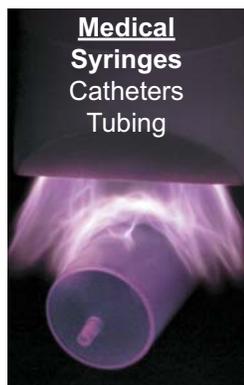
**Painting-** Injection molded or thermoformed parts are often treated prior to painting. Surface treatment allows the paint to adhere and also increases the life and durability of the paint on the object's surface.

**Coating-** Products are coated to protect their surfaces from harsh environments or as decoration. Doors, frames, and extrusions/profiles are often coated. The medical industry uses surface treating to improve adhesion of antimicrobial/antibiotic coatings.

**Bonding-** Bonding is primarily used to increase the strength of an adhesive. The medical and automotive industries rely on surface treating to remove contaminants such as dust, grease, oils, or mold to improve bonding. Typical cleaning solvents such as methyl ethyl ketone (MEK), trichloroethylene, toluene, or acetone may be used for this purpose, but cleaning agents that leave a film residue upon evaporation will retard bonding.

**Labeling-** Surface treating caps, bottles and lids ensure that labels will not peel off before complete destruction of the label occurs. Air, flame and chemical plasma treatment of materials like HMWHDPE can effectively improve adhesion of labels.

## Application Gallery



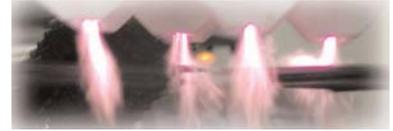
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# Enercon Atmospheric Plasma Surface Treating

## Dyne-A-Mite HP™



**The Dyne-A-Mite™ HP eliminates the need for chemical priming and etching processes.**

Rely on Enercon's Dyne-A-Mite™ HP to economically improve surface adhesion with a highly effective and uniform air plasma arc.

Its unique design generates an aggressive blown arc discharge that is ideal for higher line speeds and demanding applications.

Remarkably easy to operate, the system effectively improves adhesion on all types of surfaces for printing, painting, coating, bonding and labeling applications.

It treats extruded, pultruded, molded and formed materials. Treatment is ideal for PE, PP, PET, nylon, vinyl, polystyrene, polycarbonate, PVC and all other types of thermoformed and thermoset plastics.

### Effectively Treats

✓ABS ✓EPD ✓EVA ✓PMMA ✓HDPE ✓LDPE ✓TPU ✓PC ✓PE ✓PET ✓PP ✓PS ✓PU ✓PVC ✓PBT ✓ASA

### System Features

- **Easy Operation** - operator friendly controls
- **Remote Start/Stop**
- **Heavy Duty Blower**- provides continuous high volume air jet for maximum plasma deflection and treatment. (Not included with compressed air model)
- **Rugged Continuous Duty Power Supply**
- **Safety Interlocks**
- **Communication interface cable**- for remote operation, loss of treatment indicator, safety and operational interlocks
- **Advanced protective circuitry** protects against over current, under power and air flow
- **Virtually No Maintenance**
- **Dual Head Option** - can be aligned to increase treat width, extend dwell time, or be used to treat multiple angles
- **Optional Tri-functional Treater Switch** operates dual heads independently or simultaneously
- **Deluxe Customer Interface Package** monitors process variables with you PLC. Available for single head units.

### Treatment head options

#### Standard Head

Universal design  
Ideal for most applications  
Maximum treat width of 3.5"  
Useable treatment gap of 1/8"-3/8"



#### Compressed Air Head

More intense discharge  
Ideal for robotic applications  
Combined electrical/air hose  
Maximum treat width of 2.5"  
Useable treatment gap of 1/8"-1/2"



#### Deluxe Head

Extended head shaft  
Interchangeable electrodes  
Max treat width of 3.5" or 2.5"  
Useable treatment gap of 1/8"-3/8"



Dyne-A-Mite™ HP Specifications <small>(Specifications subject to change without notice)</small>	Model	Dimensions	Weight	Voltage
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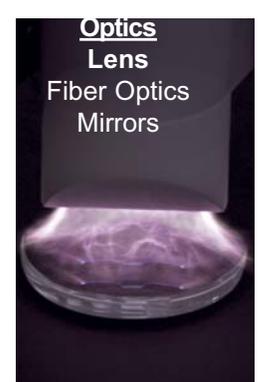
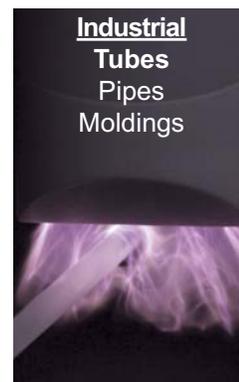
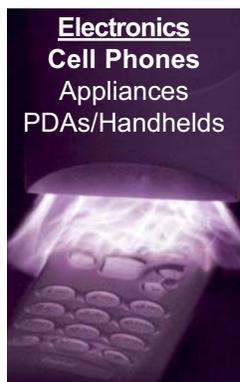
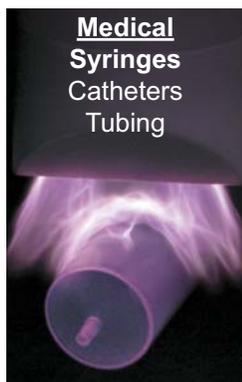
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