

## Plasma Treating Tubes Ensures Ink Adhesion and Increases Production Efficiency

Plastube is a Canadian manufacturer of innovative plastic tubes for the beauty, healthcare, food and pharmaceutical industries. The company produces and prints polyethylene tubes, tubes with an inner foil and exterior plastic and laminate tubes. Their mission is to make their customers' brands shine.



Package appearance for tubes sold in the retail marketplace is vitally important. Plastube offers its customers a wide range of decorating technologies including offset printing, silkscreen printing, hot stamping, varnishes, and labeling to bring their brands to life on the store shelf.

To ensure the UV curable ink properly adheres to the tube surface, tubes pass over a corona bar to raise surface energy prior to printing. Plastube's Plant Engineering Manager, Martin Lépine, explains that, "The corona treatment improves adhesion of the ink, but the process also resulted in treatment on the inside of the tube in the area which is crimped and sealed. This backside treatment has the potential to create leaks during the crimping process."

The solution was to use a different type of treatment for the area of the tube that was to be crimped. At first, a blown-arc style plasma treater was introduced into the production line to handle the treatment of this area of the tube. While the treatment was successful for enabling the printing, another problem arose.

During the treatment process, the tubes are on a cylindrical metallic mandrel. The blown arc plasma would arc to the metallic mandrel. This led to significant downtime, loss of production efficiency and an expensive parts replacement. Martin Lépine and his team knew there must be a better way.

## Enercon Application Expertise



An internet search connected Lépine with the surface treating experts at Enercon. With assistance from Enercon's representative, TTG (Thomas Technology Group), Enercon's application experts were able to prescribe a different type of plasma technology to meet the needs of Plastube.

The company brought in an Enercon [Blown-ion™ Plasma treater](#) for on-line testing. The blown-ion system pushes pressurised air past a single electrode which discharges inside the treater head. The electrode

energizes electrons which, through bombardment, create positively charged ions within the discharge chamber. The air pressure forces the ions to accelerate and stream out of the tip of the head at high velocity toward the substrate surface. Through direct contact, these ions positively charge the object's surface, increasing its surface energy and making it more receptive to inks and coatings. Best of all, the plasma does not arc to the metallic mandrel.

Martin Lépine says the technology fixed the problem and promptly added seven plasma treaters to their operation. "The technical support we have received from Enercon has been fantastic. We appreciate that their local representative, Sean Spillane, and their direct sales specialists have been at our facility to ensure all of our needs were met."

[For more information please contact us.](#)

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