

## **Tight Seals - Guaranteed**

**Induction cap sealing systems guarantee long-lasting product freshness. They extend shelf life, reduce packaging weight, and ensure that complaints about leakages are a thing of the past. One of the world's leading induction sealing manufacturers is the US-based enterprise Enercon; its business activities in the European market are taken care of by the English company *Enercon Industries Ltd.*, based in Aylesbury.**

For more than twenty years now Enercon Industries has specialised in inductive sealing and surface treating technology. In 1994, Enercon Industries Corporation of Menomonee Falls, Wisconsin and Richard Bull set up Enercon Industries Ltd. a joint venture, which presently employs twenty-five members of staff. Its most important product range is made up of inductive sealing solutions.

An Induction sealing system comprises of an energy supply with a unit to control the output to the induction coil, after which the process is named. Enercon's biggest technological advances are to be found in the design and construction of the induction coils and the efficiency gains made in the control and usage of the power.

The technique is essentially a non-contact heating process for bottles, jars and other containers which works by generating a controlled Electro-Magnetic field from the induction coil through which the containers and caps complete with a laminated Aluminium foil, also know as the inner seal are passed.

As soon as the Aluminium foil layer of the inner seal enters the Electro-Magnetic field generated from our coil a circulating current is induced into the foil layer of the inner seal causing it to heat up due to its internal resistance to the current flow. It is the heating of the aluminium layer which activates the sealing surface coated with a polymer or adhesive. This sealing surface is held in contact with the container rim such that when it cools it results in a hermetically sealed container.

The structure of the inner seal can be a simple laminate consisting of EPE (Expanded Polyethylene), Aluminium Foil, PET (Polyethylene Terephthalate) and a Polymer / Adhesive layer or even more complex structures which include additional supporting layers of paper or foam bonded to the induction seal by a wax layer designed to melt and be absorbed during the heating process. A common additional process involves printing the inner seal with a manufacturer's logo, opening instructions or further advertising options.

Because a foil seal is strong and flexible it can be used as a form of Tamper Evidence and as a broken inner seal is easily detectable on the container rim the Food and Drug Administration (FDA) of the USA has accepted this method as a safe and effective authenticity safeguard.

When you generate any Magnetic field using electricity you also generate heat inside the induction coil. In the past this unwanted heat was removed using cooling water or compressed air circulated around the coil but Enercon has developed and launched a range of “Wash Down” fan cooled systems which are fully IP rated and suitable for installation in environments where the ambient temperature is 40 degrees Celsius, offering advantages such as lower cost and more compact constructions as well as virtually eliminating laborious maintenance work.

Induction cap sealing is suitable for nearly all Screw-cap plastic containers including those which have barrier layers for product protection and those which contain a percentage of recycled and recovered materials however, this method is equally suitable for glass and metal containers.

Regardless of whether you use induction technology to seal with or without a cap it is intended to extend a product’s shelf life or keep the product fresh, Enercon’s portfolio is able to provide the perfect solution. The enterprise, which is located north-west of London and the world’s leading supplier in this segment, provides a wide range of powerful sealing systems that leave nothing to be desired. With the Compak Jr, Auto Jr, Super Seal, Super Seal Deluxe and Super Seal Max lines as well as Cap-less Systems, Enercon covers the entire field from manually operated machines to high-performance systems. *“Super Seal Max is currently the fastest machine on the market. It seals up to six hundred units per minute,”* explains Richard Bull. *“Induction sealing is not only interesting for the food, beverage and pharmaceutical industries, but also for a multitude of other sectors. With this in mind, we want to push for further market penetration. At the same time, we intend to achieve significant growth abroad.”*

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