

Slowly and steadily

This year Enulec is celebrating its 30th anniversary and is enjoying greater success than ever before

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When a small family company like Enulec is able to perform with such great success on the world market stage for three decades, a fundamental question inevitably needs to be answered: What is the secret of this success? In Enulec's case, there are two main factors which have contributed to their success. Firstly, it is concentration on a manageable range of high-quality products, designed to meet the needs of the market and continuously developed over the years; and, secondly, Enulec has a closely knit global network of partner companies with which close and intimate relationships have been built, often over long periods of time. These support the Trittau-based company, located close to Hamburg/D, not only in matters of service and support for their international customer base but also in the further development of their innovative products. One such product is the »air-assisted charge bar«, an Enulec innovation, protected by a registered design in Germany, which has set new standards in the gravure printing industry. And to top all of this, Enulec has recorded the highest intake of orders ever in its history during the first five months of 2011, its 30th anniversary year.

CHRISTA DETTKE, responsible for the company's finances, and HUBERTUS DETTKE, responsible for technology, research and development, founded *Enulec GmbH* on October 30, 1981. Their son, CHRISTOPH DETTKE, joined the company in 2006 and heads its international marketing activities as Sales Director having responsibility for its worldwide sales network. Over the intervening 30 years *Enulec* has developed into a globally active player in the gravure printing industry for whom it manufactures and supplies electrostatic printing assist systems (ESA) for the packaging, decorative and publication gravure printing industries where it now occupies a leading position. By using ESA systems on gravure printing machines, the cells in the

related printing cylinders which are filled with ink can be almost completely emptied. This in turn ensures optimum print quality on virtually all substrates (plastic film, cardboard and a wide range of paper products).

Enulec offers a range of tailor-made ESA customer solutions (standard Top-Loading, maintenance-free Top-Loading, Core Charging, Side-Loading). These contribute significantly to a stable, standardised and highly productive printing process whilst meeting the highest safety standards. Additionally, the EST range of static discharge systems enables plastic film processing companies to remove problematical electrical charges from the pay-outs and take-ups in roll slitting, laminating and print-

ing machinery. This facilitates a safe, smooth and continuous production process.

Strategically significant

A worldwide sales and service network not only secures *Enulec* a leading market position but also ensures close customer relationships. In addition to three *Enulec* trading companies, 28 partner companies look after international customers. Market leading and medium sized companies worldwide producing packaging, decorative and publication gravure printing have been installing ESA and static discharge systems of varying types with great success, often for many years.

A large number of the gravure printing machines produced today are exported to the so called BRIC countries (Brazil, Russia, India and China). The Middle East, with its growing demand for high-quality flexible packaging, is also becoming increasingly important. *Enulec* now delivers one in every two of its ESA systems to customers in these markets. The export share of business in ESA and static discharge products for the gravure package printing industries accounts for about 70% of their output. *Enulec* is already fully booked with orders for the 2011 business year. On the basis of this success CHRISTOPH DETTKE also anticipates further growth in 2012 for the family concern.

Enulec Electrostatic Sagl in Lugano/CH is making a big contribution to the company's international success. Since its establishment in 2005, ARNOLD DALLA BONA has headed this Swiss subsidiary company. Its main function is to monitor the sales and marketing of ESA and static discharge systems to the Italian gravure printing market. Of particular importance is the maintenance of the excellent relations which exist with the Italian gravure printing machinery manufacturers who dominate the industry worldwide and to whom *Enulec* are original equipment suppliers. New solutions geared to market requirements are developed jointly with OEMs resulting in soundly based and seamless developments.

The Italian manufacturers equip almost all of their modern gravure

Enulec maintains excellent contacts to the Italian gravure press manufacturers and is an OEM for many companies.





Enulec ESA unit installed in a gravure print station.

printing machines with *Enulec* ESA and static discharge systems which are offered to gravure printers worldwide as a complete readymade turnkey package. This machine configuration offers the customer simplicity of operation and ensures an optimum printing process.

Enulec America Sales and Service Centre looks after customers on the American continent. JOSEPH K. STEINGRAEBER, Global Market Development Manager, backed up by his *Enulec* partners provides customer focused service and support.

**Special features:
technical innovation**

- *Direct Charging.* Gravure printing is characterised particularly by its outstanding print quality which has been further improved by the *Enulec* ESA Direct Charging (Core Charging) system leading to the establishment of new standards. This technical module has been employed with great success, particularly by world leading gravure press manufacturers from Italy and their customers. The Direct Charging system is based on a current transmission unit which charges the core of the impression roller (sleeve mandrel) via a specially developed fluid transmission system to ensure the evacuation of ink from the gravure cylinder and its transfer to the printed substrate. A pre-requisite for direct charging is that the impression roller cores/sleeve mandrels must be isolated from the machine earth. The transmission of the voltage required to produce the

ESA effect is achieved in the *Enulec* system via a specially developed, maintenance-free fluid transmission system. The impression roller core/sleeve mandrel distributes the voltage uniformly over the full width of the impression roller without any significant loss of power. As a result, the system is suitable for use with low-cost single-layer or sleeve type impression rollers. In conjunction with a specially developed capacitance-free generator, the current transmission unit can be used to achieve the best print results on all substrate materials, even under critical conditions. Even in extremely dirty printing conditions, the system remains maintenance-free and does not require time intensive cleaning programmes. The uniform distribution of the direct charge ensures optimum printing results and there is virtually no wear caused in either the impression roller or the printing machine.

- *»Air-Assisted Charge Bar«.* The technical innovation in the design registered *Enulec* special Top-Loading system is a virtually maintenance-free air-assisted charge bar, previously unknown in the packaging printing industries. Unlike previous conventional charge bars with their exposed charging pins, air-assisted special charge bars offer the advantage that they do not require regular maintenance. This is achieved by means of a special charge bar design in which the charge bar pins are bedded into a small tube and so do not come into contact with ink and dust particles. By applying a very low air pressure of around 0.5–1.5 bar

at the ionisation points (charging pin points) contamination of the pins with particles of ink and substrate dust is avoided.

In developing this innovation, the opportunity was taken to remove a number of disadvantages and particularly safety related weaknesses associated with conventional ESA Top-Loading systems with exposed charging pins. Amongst these are unwelcome machine downtimes which result from the need to frequently and regularly clean the charge bars and their exposed charging pins. With conventional Top-Loading systems there is also a significant drop in their efficiency during use due to a build-up of ink on the exposed charging pins. In addition to a drop in the efficiency of the electrostatic printing assist system, poor maintenance or cleaning of the charge bars with their exposed charging pins can result in an increased safety risk due to sparking between the open pins which can lead to fires in

the machine when solvent-based inks are used.

● **ESA power supply.** At the heart of the *Enulec* printing assist system is its capacitance-free high voltage generator. With its high internal resistance it provides optimum power transfer to the specifically designed semi-conductive impression roller with which it works in conjunction and increases the efficiency of the system considerably. *Enulec* does not use a cascade system normally used by other manufacturers for the generation of the high voltage as this is associated with unwanted capacitance. A particular problem associated with this is that a residual high voltage remains on the charge bar for a short time after the generator has been switched off. Conversely, with the *Enulec* generator, the high voltage is applied instantaneously to the charge bar and the printing assist is ready for immediate operation when it is switched on. This generator enables ESA style impression



rollers with high surface resistances to be used and, sometimes, even impression rollers which lie outside the stated specification. This in turn increases the life of ESA impression rollers in relation to their electrical values.

EST-DC-LDS discharge system, mounted on the rewinder of a gravure press.

No more disruptive electrostatic charges

Enulec's highly effective *EST-DC* static discharge system which has been successfully established in the market for 15 years removes unwelcome electrostatic charges from gravure printing machines and also from roll slitting machines and laminating machines. Free ions (both positively and negatively charged) are fired at the travelling web of film at high speed during the winding process. During this process the positively charged ions on the web recombine with the strongly accelerated negatively charged ions coming from the DC discharge electrode.

The *EST-DC-LDS* discharge system operates over a range of approximately 20–800 mm and does not need to be adjusted for webs having differing static charges. By virtue of its special direct current technology the system can successfully eliminate all combinations of electrostatic charges and there is no need to use additional alternating current discharge systems on the winder.

Conclusion

Slowly and steadily *Enulec* has, over the last 30 years, built up a worldwide market leading position as a producer and supplier of ESA and static discharge systems for high-quality gravure printing. A significant contribution to this success has been made by the global partners with which *Enulec* is closely linked as well as by the employees and their dedicated commitment to the company.

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