

# MAKING ITS MARK

Trident provides piezoelectric impulse inkjet printheads and inks to OEMs for industrial marking and coding systems. Julia Snow spoke to European sales manager Des O'Neill to find out about the newest technological developments.



Trident boasts over 30 years of experience in industrial inkjet print-head and ink development, which began in 1979 when the Exxon Enterprises Group decided to seek a high-speed, digital printing process for word processing and fax machines. Once a specialist team had invented a new technology for droplet generation and ink delivery, Data-products Corp became joint venture partners and proceeded to focus on solid ink technology for the office market. In 1989 Trident was formed by a group of former Dataproducts employees, who were granted an exclusive license for liquid ink industrial printing applications.

After ten years of commitment to technology advancements and financial stability, Trident was acquired by Illinois Tool Works Inc (ITW), a multibillion-dollar global group of manufacturers. Trident is headquartered in Brookfield Connecticut, USA, where all production, R&D activity and applications support is carried out. As the company's principal markets are North America, Europe and the Far East, there are business offices located in Japan and Dublin in Ireland, where Des O'Neill is based.

### At home in industrial settings

Trident printheads and inks are used in high quality, high-speed, rugged printing equipment that has the ability to digitally change the printed information easily and frequently. Whether in the digital printing of bar codes for logistics or in brand enhancing graphics or text onto secondary packaging, printing in industrial packaging environments is Trident's specialism.

"We work closely with our OEM partners, who develop printing systems for end users," explains Mr O'Neill. "Key partners are sister

companies within ITW, Diagraph and FoxJet, as well as Weber Marking Systems, Applied Technologies Development, Tiflex, Zanasi, REA Jet and Matthews Corporation."

A primary market served by Trident is the food and beverage industry, where the outer secondary packaging is coded with information, typically at the end of a producer's production line; thereby minimising the needs for pre-printed outer cartons or costly labels. Also important is the construction sector, where information is printed on a range of substrates including raw timber, plasterboard, concrete blocks as well as outer packaging for such products as ceramic tiles or cement bags.

Trident's product line contains the tallest single printhead in the industry with an image height capability of 102mm. This allows for the printing of larger format variable information without requiring multiple printheads or complex alignment processes.

### Unique benefits in industrial environments

The company has a unique understanding of and complete focus on industrial applications, creating robust and durable printing technology that provides optimum performance in demanding environments. The printheads are constructed using stainless steel and they can be serviced and repaired when the dusty environment has taken its toll: The front plate containing the nozzles is designed to be removed and cleaned through ultrasonic cleaning. To further enhance reliability there is an Automatic Maintenance Module feature which allows for 'hands-free' maintenance during operation. ▽

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Another key strength is the long printhead life, which is backed up by an industry leading three-year warranty, explains Mr O’Neill: “We are proud of the fact that printheads manufactured more than 15 years ago are still in operation today. Due to stainless steel construction and no moving parts, our printheads fire in excess of 100 billion firings. We are the only player in the industrial inkjet industry that develops and manufactures our own inks, thereby matching ink characteristics with printhead dynamics.” Trident printheads can be heated up to 70°C to set critical ink properties such as viscosity and surface tension parameters for optimal jetting performance.

Unlike disposable inkjet printheads, Trident products are repairable and have a long life. All inks contain environmentally safe ingredients and systems are designed to completely empty the ink bottles, so that no ink chemicals end up in landfill sites.

### Growing in line with evolving market needs

There is room for growth in a number of areas, as Mr O’Neill explains: “With the modern requirements for product traceability there will be more bar coding, but alongside this there is increased demand for human readable information too. Our products are ideally suited for this dual task and,

as we are already represented in the food and beverage sector extensively, we are expecting positive developments here.

“Our growth comes from meeting the ever-evolving needs of the markets we serve. Within the secondary packaging sector we see two emerging trends: one being the increased use of secondary packaging for display, marketing and branding purposes; and the other one is the need to reduce the costs of outer packaging – leading to a preference for shrink wrapped trays over the costlier corrugated boxes.”

Both mean a movement towards the use of glossy carton, stretch film and other semi-porous or non porous materials – materials that cannot be printed with traditional ink due to problems with drying and smudging. In response, Trident has recently launched an innovative printhead/ink solution: the 384JetNP/A5000 ink combination which boasts an unassisted dry time of 10 seconds (or less than five seconds with air assist drying). In collaboration with our OEM partners system features have been developed to prevent this quick drying ink from clogging the nozzles in the printhead during periods of print in activity.

Staying ahead of industry trends underscores Trident’s ability to remain a leading key player in its field. □

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