



## **INCA DIGITAL PRINTERS – THE PRODUCTS**

Inca launched the first ever flatbed inkjet printer, the Eagle 44, in January 2001 to great industry acclaim and has subsequently become the name synonymous with quality, reliability and innovative piezo inkjet solutions for the graphic arts market. The range evolved rapidly with the introduction of Eagle H and the Columbia in 2002.

Today the models in the range include: the top of the range high speed Columbia Turbo and larger Columbia Turbo 220 both available with an AutoSpeed materials handling option to increase the speed further still. The Spyder 150 for substrates up to 1.5 x 1 metres (60 x 40 inches) and offers a gloss finish. The larger Spyder 320 (3.2 x 1.6 metres/126 x 63 inches) which includes a low cost model (Spyder 320-e), a model that prints white, , as well as a six and an 8 colour Spyder. Inca is also able to provide some customisation of its equipment to suit the requirements of industrial or graphics print users.

Every Inca printer has the capability to print directly on many different materials, including paper and board, wood such as MDF and plywood, lenticular lenses, flexible and rigid plastic, metals and glass. Inkjet technology is suitable for substrates with uneven surfaces, so the printer can achieve excellent results even on single faced corrugated board and foam.

This ability to print directly onto the surface of a rigid material, using instantly curable UV inks, means that finishing processes that previously had to be carried out when printing inkjet on to reel stock such as cutting, mounting on board and sealing, can be eliminated.

“Digitally printed point-of-sale posters and signs are often mounted on foam cored board, styrene or corrugated materials to provide support,” says Inca's managing director Bill Baxter. “Printing directly on to rigid substrates can save a significant amount of time and material. There are also several specialist applications that can only be handled by printers of this type.”

Inca's printers use piezo drop-on-demand inkjet technology to apply ink to the substrate. The ink channels within the printheads incorporate a material, which deforms to an exact and predictable degree when an electric field is applied. This deformation of the channel ejects ink from the nozzle in a highly controlled and repeatable way, so that the ink is fired at the material as required. Inca designed technology incorporates this into its own innovative printhead array systems to produce unsurpassed quality.

Of all inkjet technologies piezo puts the least restrictions on ink formulation, which results in greater flexibility for developing new chemistries. Research is constantly being carried out to explore new opportunities and this includes areas such as developing new ink sets, new liquids to deliver even greater outdoor durability and more flexible (stretchy) inks.

The Columbia Turbo is still popular years after its launch and is complimented by the larger Columbia Turbo 220. Both machines print edge-to-edge and the level of precision allows images to be printed to bleed, removing the need for subsequent trimming. Substrates can be up to 40 mm thick, providing enormous versatility in terms of what can be printed and the ability to proof a job on the material on which it will finally be produced.

The Columbia Turbo can print a maximum area of 3.2 x 1.6 metres (126 x 63") with the 220 offering 3.2 x 2.2m (126 x 86") both at speeds of up to 160 square metres per hour (1720 sq.ft/hr). Both printers can achieve resolutions up to 1,000 dpi and are capable of handling materials weighing as much as 40 kg. Even these large format machines are very straightforward to operate, with only two days operator training generally required upon installation. The ease of use is aided by the simple control console, which provides all job information as well as control of cleaning and maintenance operations.

The speed of production on the Columbia Turbo and Columbia Turbo 220 can be increased even further with the addition of the AutoSpeed handling system that offers semi-automatic loading and automatic unloading of substrates. The significant reduction in manual handling means that it is feasible for a customer with two Columbia family printers to run both with one operator. The system can reduce changeover time by about 20%, improving real throughput by up to an extra 30 square metres per hour.

The Spyder 320 is an 80 square metre an hour (860sq.ft/hr), 3.2 x 1.6m (126 x 63") bed machine. It has the option of excellent quality bi-directional printing. It has a small footprint, highly accurate pin registration plus sharp image resolution and crisp text.

In 2006 two new versions were introduced, the Spyder 320-e and the Spyder 320+. The Spyder 320-e is a low cost version with some speed compromise (up to 35 sqm/hr or 377sq/ft) but with all the benefits of this range. It can be upgraded in the field to the four colour Spyder 320 or 320+ white or Spyder 320+ six colour specification.

The Spyder 320+ has the option of printing with white ink or with six colours (adding light magenta and light cyan to the standard CMYK process colours). The white option machine can print white before, during or after the CMYK image with no change to settings required, offering flexibility and speed in set up. A white layer can even be applied without white being in the original file. The six-colour Inca printer delivers smooth images and flawless flesh tones to produce high quality output at speeds of up to 80sqm/hr.

2007 saw the introduction of the latest succession in the Spyder range with the launch of the Spyder 320-8 Series. This new model offers the option to extend the gamut with up to 8 colours in addition to the CMYK set.

The Spyder 150 is the smaller format (maximum print size of 1.5 x 1m) version, and is the only Inca printer to offer a high gloss finish, which is ideal for POP and POS displays, backlit products and lenticular prints.

Inca supplies a powerful Wasatch RIP with each printer, which accepts all common files, processing jobs at high speed ready for output. The Wasatch RIP has excellent colour management capabilities, from the use of ICC profiles, spot colour replacement and the specification of input profiles for proofing.

For all their sophistication, Inca printers are extremely easy to operate and require minimal print set up time. The substrate to be printed is simply positioned against a set of air-cylinder operated register pins or bar, and this accurate job positioning enables immediate printing. Jobs consisting of only one copy are still cost effective on an Inca printer, making proofing easy, although they are more appropriate for run lengths of up to several hundred. With all job information handled digitally, changes and updates can be made at the last minute or even during a print run.

The level of accuracy offered by all of Inca's printers means that it is straightforward to print both sides of the material in register so that it can be die-cut before printing and several sheets can be loaded on the bed.

“One of the reasons why digital printing, whatever the output technology, has become so popular is the ability to produce customised and variable data print,” says Mr Baxter. “This makes it economical to print just one copy, or a job where the information alters throughout the run.

Safety of operators is a major feature of the Inca printers, the Columbia and Eagle ranges incorporate adjustable laser scanners to create a safety zone around the machine during production. Printing will be stopped immediately if anyone or anything enters this zone. As the Spyder design enables you to get up close to the machine while it is printing it incorporates a bump strip, which immediately stops the machine from printing if anything comes in to contact with it.

Inca has customised and developed flatbed printers for individual companies to meet specific needs or solve production issues and is open to projects of this type. In 2006 Inca launched a “Why not inkjet guide?” to promote this area of development which includes industrial applications. Visit [www.whynotinkjet.co.uk](http://www.whynotinkjet.co.uk) to download a copy of this guide.

### **Uvijet Inks**

Inca has always worked closely with screen ink manufacturer Fujifilm Sericol, which has developed the Uvijet range of UV inks for use in its flatbed printers. The inks cure instantly as the UV light is applied but remain stable in the printhead, ensuring reliable reproduction. This means that the Inca printers can be in constant use around the clock printing billions of drops, but equally can be left during a shut down period, without the need to purge or spit, reducing wastage.

The unique four-colour process inks provide excellent colour reproduction. They benefit from Fujifilm Sericol’s unique Micro-V dispersion technology, which helps to create vibrant, durable ultra-wide gamut colours, using automotive grade pigments with high light-fastness. The UV inks are suitable for double-sided work and provide good chemical and abrasion resistance as well as two to three years outdoor durability.