

# EGG STAMPING:

BENEFITS, FEASIBILITY AND OPTIONS  
FOR AUSTRALIAN EGG PRODUCERS

Juliet R. Roberts  
and Geof Runge

AUSTRALIAN EGG  
CORPORATION LIMITED



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Address: Suite 4.02, Level 4  
107 Mount Street  
North Sydney NSW 2060

Tel: 02 9409 6999

Fax: 02 9954 3133

E-mail: [research@aecl.org](mailto:research@aecl.org)

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### The authors

#### Juliet R. Roberts

Associate Professor, Animal Science

Address: School of Environmental  
and Rural Science  
University of New England  
Armidale NSW 2351

E-mail: [jrobert2@une.edu.au](mailto:jrobert2@une.edu.au)

#### Geof Runge

AECL Extension Specialist — Poultry

Address: PO Box 96  
Wamuran QLD 4512

E-mail: [geofrunge@bigpond.com](mailto:geofrunge@bigpond.com)



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## Summary

Egg stamping — also known as egg marking, egg coding or egg printing — is compulsory in the European Union. In Australia, the only state that currently has compulsory egg stamping is Queensland, although Tasmania has specific traceability requirements and is contemplating introducing compulsory stamping. The national Primary Production and Processing Standard for Eggs and Egg Products was gazetted in May 2011 (Australian Government Department of Health and Ageing). This Australian standard requires eggs to be stamped.

Egg stamping enables shell eggs to be traced from the farm to the table. This has advantages for consumers, retailers and also for producers. The main advantage for producers is that, if there is a food safety, or any other quality problem with eggs, the source of the egg can be located quickly. The alternative is that all egg producers are blamed and all eggs are potentially withheld from sale. It reduces the damage to the industry's reputation and the risk of ongoing effects on sales. However, there are costs in setting up egg stamping, and ongoing running and maintenance costs (for a detailed breakdown see FSANZ, 2009b, pp. 40–45). The entry level for buying an in-line printing system is about \$12,000. Leasing is also available.

Eggs can be stamped using manual (hand) stamps or inkjet printers (though laser printers are being investigated). Some of the older egg graders are already fitted to take the newer pre-inked stamps used for hand stamping. Hand stamping can be used by small producers if the cost of automatic or mechanical stamping is prohibitive. Manual pre-inked stamps can be ordered from local stamp makers.

Larger producers will need some sort of in-line printer and it will usually be an inkjet printer. Manufacturers of egg grading and packing equipment will recommend printers that are compatible with their machines, however, most inkjet printers designed for labelling food products can be adapted for use with eggs. Some Queensland producers have reported problems with servicing and supply of some of the printing equipment and availability of consumables. It is essential that the printer system be compatible with the egg grading and processing equipment and work well from the computerised equipment already in use.

Equipment that has an Australian distributor (particularly if there is a local distribution outlet) has obvious advantages.

## 1. Introduction

Egg stamping — also called egg coding, egg labelling or egg marking — is compulsory in some countries and in one state of Australia. It is likely to become compulsory in other states. Its main purpose is to provide a means of tracing the origin of eggs.

In the European Union (EU), from 1 January 2004, Council Regulation EC/5/2001 amending Regulation (EC) No. 1907/90, required all Class A eggs sold at retail level within the EU to be marked (stamped) with a code identifying the establishment (production site), country of origin and method of production (i.e. 0 for organics, 1 for free range, 2 for barn, 3 for cage).

Two Australian states currently have traceability requirements. Queensland requires eggs to be stamped with a unique identifier linked to the farm, see the *Food safety guide for Queensland's egg suppliers* (Safe Food Production Queensland, 2007). As part of its food safety program, Tasmania also has requirements to identify where and what day the eggs were laid (FSANZ, 2009a). A report by the Auditor-General of Tasmania recommends that compulsory egg stamping, similar to that used in Queensland, be introduced into Tasmania (Auditor-General of Tasmania, 2008).

The Primary Production and Processing Standard for Eggs and Egg Products was gazetted in May 2011 (Australian Government Department of Health and Ageing). This Australian standard requires eggs to be stamped. It has an 18 month implementation period. Each state is required to draw up the necessary regulations to enforce the standard. Whether each jurisdiction will implement the stamping requirement is unknown at the time of publication.

A number of producers and egg marketers in Australia, other than Queensland, are stamping some of their eggs for their own purposes.

Egg stamping involves the placing of a stamp, code or mark on each individual egg so that the source of that egg can be identified. Information about the date the egg was laid or processed and the production system from which the egg originated and logos can also be included. For examples of the types of stamps that are in use in Australia, see the *Queensland Unique Egg ID Register* (Safe Food Production Queensland, 2009, <http://www.safefood.qld.gov.au/index.php>). The following is an example of egg codes used in Queensland.



The picture at left shows two versions of marks that are stamped on eggs produced in Queensland. **DH** on the left egg is a producer/processor unique identifier for Safe Food Queensland requirements. The egg on the right provides more information that is useful to the farmer in a trace back. It has the producer/processor unique identifier **MF**. The **V** is one of several letters used by the producer to indicate which production system/farm the egg came from. The number **216**, the Julian date, represents the day of the year the egg was packed on, and the **smiley** symbol is a promotional logo used by the egg distributor/marketer.

A Safe Food Queensland unique farm identifier and a promotional logo.

## 2. The benefits of egg stamping

Right: Additional trace information can be placed on egg cartons and linked to a stamp.

Egg stamping allows traceability of each individual egg sold to consumers. It means that if there is a quality problem with a sold egg, the problem may be quickly traced and addressed at the source. It avoids many farms being involved in a possible recall until the problem eggs are traced. This in turn benefits the whole industry as an isolated problem is less likely to be blamed on all producers. This is particularly important if (or when) there is a food safety problem. Traceability can be enhanced by placing additional information on the egg carton. The image of a carton stamp on the right includes the best before date, ID stamp on the eggs and packing information — the Julian date, packer row and time of packing.



For the farmer there are other benefits.

- Customer confidence in the farm's brand is improved particularly if a logo is used.
- The swapping of individual eggs in cartons by customers in shops can be detected and if there are quality issues the actual source of the eggs at fault can be traced.
- Reused cartons, particularly in farmers' markets are easier to detect. Producers are often blamed for poor quality eggs purchased in their reused cartons at farmers' markets. Stamped eggs can be used to quickly eliminate farmers as the supplier of the eggs.

### 3. The costs of egg stamping

The Food Standards Australia New Zealand report (FSANZ, 2009b, pp. 40–45) contains a detailed account of the estimated costs of introducing compulsory egg stamping for the purposes of traceability, into all states of Australia. In short, the cost of printing equipment for Victoria has been estimated at \$4000–\$30,000 per producer or about \$450,000 for the state (according to data from the Victorian Department of Primary Industries). Using this figure as a basis, the cost for introducing such equipment into the rest of Australia (excluding Queensland) is \$1 million. The cost of stamping for medium and large scale producers is estimated at \$2.8 million for setup and the first year of production (FSANZ, 2009b, pp. 40–45).

Ongoing costs (ink, repairs and maintenance) are estimated at \$31–\$36 per 100,000 eggs from information provided by some Queensland farmers, though some farms experienced higher costs. Costs vary due to farm size, the type of equipment used and the quality of the printing required.

Since stamping was introduced in Queensland, farms have experienced issues with:

- Printer selected initially was unable to print the image quality required.
- Higher than expected ink, repair and maintenance costs.
- Parts and or service, not available in Australia.
- Price increases in ink costs after the initial supply contract ceased.

Some farms are in the process of, or have replaced the original equipment for the above reasons.

Including more information than the farm unique identifier and logos in the stamp to be printed on the egg increases both equipment and ink costs. Each producer will need to decide how much information, in addition to the unique identifier if required by regulation, to provide on each egg. Expressing running costs per 100,000 eggs is an ideal way to compare costs between suppliers of stamping equipment.

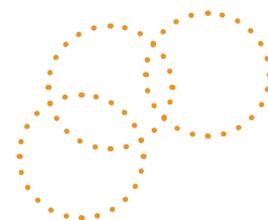
### 4. Printing onto eggs — the limitations

How much information can be printed on an egg is determined by the equipment being used and is limited by the curvature of the egg which is influenced by the egg's size and shape. The area suitable for stamping on the top of the egg is about 15 mm diameter and on the side it is 20 x 15 mm. Printing outside this area increases the risk of image distortion or blurring, particularly with smaller eggs. How much of the area available that is used for printing is determined by what information is to be printed on the egg and if logos will be included.

The size, shape and concave surface of the egg affect the amount of image distortion on the egg as inkjet printers propel the printed image onto the surface being printed on. As the diameter of the egg varies according to shape and size, the distance the print head is installed away from the egg is determined by the maximum egg diameter likely to pass by the printer. The maximum distance the print head is from the egg is determined by the smallest egg diameter that is likely to pass the printer. The printer must be capable of effectively printing on this small egg without distorting the image. And of course, the further the print head has to propel the ink, the larger the image printed on the egg will be and the greater the risk of distortion or blurring.

It is important eggs are dried after washing as the egg surface must be dry to print on. Rinsing after washing must remove all detergent used during the washing process as any detergent left on the shell may cause blurring of the image.

The quality of the image printed on the egg is also dependent on the printer's resolution. It is recommended that food grade ink is used for all printing on eggs.



## Inkjet printers — the differences

Selection of the right printer is critical to achieving a clear and non-distorted image on most eggs.

Inkjet printing equipment is divided into different technologies. Each technology is designed for a specific purpose — from printing text such as ‘packed on dates’ onto impervious surfaces such as bottles at high speed, onto flat surfaces such as paper, printing colour photographs to billboard displays or onto porous surfaces such as eggs or timber. For printing on eggs it is important to select the right type of inkjet printer. This will be influenced by the quality of text and logos required on the egg. It is about selecting the right printer technology as there may not be a significant difference in the cost between printers.

The inkjet technologies are continuous inkjet and drop on demand (DOD). DOD is divided into thermal DOD and piezoelectric DOD thermal inkjet. Continuous ink jet and thermal inkjet DOD technologies are typically selected for printing on eggs. Each has different characteristics.

Continuous inkjet	Thermal inkjet
Uses line printer concept with ink sprayed from one or more nozzles and ink pumped to printer from bottle.	Bubble of ink is created and released using heat through as many as 600 nozzles. Printer is capable of 600 dpi, though use at 300 dpi is adequate for printing on eggs.
Uses inbuilt fonts and is able to use logos.	Uses true type fonts and font size can be varied. Graphics and text can be rotated.
Typically print head can be up to 10 mm from egg shell surface to achieve acceptable print quality.	Requires a simple mechanism to position the egg shell surface a set distance from the print head, (typically 1 mm) for best image quality.
Requires a regular maintenance program.	No regular maintenance program required.
House keeping — clean print heads, flushing pumps after use each day.	House keeping — remove print cartridges after daily use and place cover on print head.
Can print on the egg from any angle. Suitable for high speed egg graders where print head is required to face upwards towards the egg surface available for printing.	Suitable where print head face is vertical or angled slightly less towards egg surface.
Complex to operate and repair. Requires a technician on call.	Simple to operate and repair.
Increasing the number of nozzles improves print quality and increases cost.	Resolution of 150 dpi is adequate for farm unique ID, but 300 dpi required for logos.

## Printing logos on eggs

Ink costs and quality need to be considered when preparing to print a logo on an egg. Simplify the logo to get the best effect on the egg and ensure that it is easily read by the customer. The effect of intricate or fine lines adding detail to a logo will be lost when printed on an egg. Avoid using solid images as these will double the ink use. For example, use a diamond outline instead of a solid diamond.

Printing upwards onto eggs is prone to errors from contamination of the print head.



## 5. Selection of egg stamping equipment

Eggs can be either stamped by hand or with inkjet printers. Laser etching or printing may become available in the future.

A small producer may find that a hand held stamp is sufficient for the number of eggs they are processing, though inkjet printers are available for relatively small-scale processing. Pre-inked stamps have replaced the traditional rubber stamp. Pre-inked stamps hold their ink inside a micro-porous material which releases ink through the design when stamped to create the image.

Hand stamping is done before or after the eggs have been candled, graded and packed into cartons or flats. The stamp is usually applied to the top or large end of the egg due to convenience. Eggs can be stamped when they are packed off the egg belt onto flats. Equipment is now available to hand stamp all 30 eggs on a flat at once. The maximum size of the stamp that can be applied to the large end of the egg without distortion is approximately 15 mm in diameter. This limits the information that can be placed on the egg to a unique identifier and the Julian date to indicate packaging date, or a promotional logo. More information can be placed on the egg by hand stamping the side of the egg.

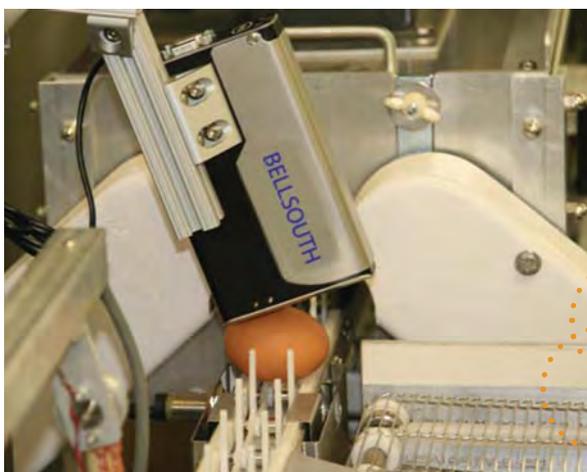
Most inkjet printers designed for printing on food packaging can be modified for use with eggs. However, a number of printers that are already adapted for printing on eggs are available.

The stamp is either printed on the large end of the egg, or on the side depending on whether it is to be stamped during the packing or the grading process. If stamping occurs during the packing process, eggs to be packed into cartons or onto flats are stamped on the large end. Packing equipment must ensure that the large end of the egg is placed upwards, otherwise printing will be distorted. Multi-lane inkjet printers are available for use with packers.

Most egg grading equipment by design requires eggs to be stamped on the side. Stamping occurs after they have been through the washer, weighers, candler, crack detector and UV light disinfection and prior to being placed in the packing lanes.

With small egg graders, a printer can be fitted to print on the eggs as they are moving from the candler to the egg weighers. See image below left.

In medium and high capacity egg grading equipment, the eggs are held in grippers or fingers for transport from the candler to the packing equipment. The grippers or fingers limit where and from what direction the egg can be printed on. In the picture below left, the stamping is applied through the hole in the gripper which is sized at about 40 x 30 mm along the diagonals. On some graders there is no room to install the printer between the egg tracks so it prints sideways onto the egg and is therefore installed under the track so the print head is facing upwards. This exposes the print head to dust and material carried on the shell or to broken eggs which may result in parts of the image being missing. Keeping the print head clean is an extra problem to manage.



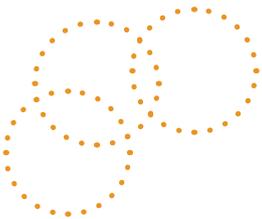
Left: Area available for stamping on egg held in grippers used in automated graders.  
Right: Inkjet printer for a small hand-fed egg grader.

With electronic graders, the printer is installed after the egg washer, weighers, candlers, UV light disinfection and crack detectors. Eggs can then be stamped according to the market or retailer requirements for each weight category being packed at the packing lanes. A printer is required for each line or track transporting the eggs. The printing equipment must be compatible with the grader computer for this to occur.

Printers that print upwards should be avoided if possible and this should be considered when purchasing egg graders that require the printer to print upwards. Any dust or other material carried on the egg shell or broken eggs will fall on the print heads and affect the quality of the image printed on the egg.

With older pre-electronic egg graders with mechanical weighers, the printer is installed at the point where the eggs are transferred to the egg fingers or grippers. As coordination with the weighers is not possible, all eggs are stamped with the same label. A printer will have to be fitted at each packaging line if it is necessary to have different stamps on the eggs according to grades. This is more expensive as the eggs are stamped after placing in the cartons or flats. Fitting printers to older graders and small capacity graders is often difficult and it is hard to achieve the same print quality as on newer grading equipment.

The equipment available ranges from small hand held pre-inked stamps to large, in-line inkjet printers. Each producer needs to determine their stamping requirements and should consider the following checklist when deciding on what sort of equipment to purchase.



#### **Checklist — deciding on what type of equipment to buy**

- How many eggs are produced, and packed or graded per day?
- What are future intentions in terms of egg production and likely market growth?
- What is the current grader capacity (eggs per hour) and will this be ample for the future?
- Will the printer's stamping capacity of eggs per hour match the egg packer/grader's line capacity?
- Where in the grading/packing line can the printer/s be placed?
- How many printers will be required — one for each egg transport track or line, or packing lane?
- Does a packaging or optional equipment lane have to be foregone to enable the printers to be fitted?
- What is the estimated cost of fitting stamping equipment to the farm packer or grader?
- Can the printers be linked to the grading computer controller to allow the pre-weighed eggs to be stamped with the appropriate stamp?
- What is the stamping equipment computer controller cost?
- Is the equipment compatible with the grader and computer system?
- What is the cost of ink, cartridges, cleaning fluid, software upgrades, other consumables and servicing? Ask for this to be expressed on a per 100,000 or one million egg basis.
- Are spare parts and consumables readily available in Australia?
- Will the ordering/delivery time for ink ensure that ink stocks required to be kept on farm are not out of date before use?
- Does the printer supplier have staff available in Australia for problem resolution and servicing?
- What does the image look like on eggs of various shapes and sizes? Ask to see it.

## 6. Getting the best from your stamping equipment

For good print quality the eggs must be clean, dry and free of oil and detergent in the area where the stamp is to be applied.

Stamping needs to be done after washing the eggs, as washing is likely to remove or render the stamp illegible. The egg washer must effectively dry the eggs as any moisture on the egg will result in blurring of the stamp. Eggs to be stamped cannot be sprayed with oil prior to stamping, however applying a small amount of oil to the top of the egg will enable the stamp to be applied to the side of the egg. There is equipment available for doing this. People listed in section 8 (Useful contacts) will be able to help with oiling equipment.

Clean the print heads regularly — either follow the supplier’s recommendation or else check they are clean at the end of each day. A dirty print head will result in part of the label missing as shown in the picture below where part of the ‘W’ and the ‘2’ are missing. Dirty contacts on printer cartridges will cause similar problems, so clean these contacts as recommended.



Part of stamp image missing due to dirty printer head.

## 7. Australian experiences with stamping equipment

For the purposes of this report, feedback was sought from Queensland producers and processors about their experiences using egg stamping equipment. Overall, they were supportive of egg stamping and the benefits of traceability.

The general consensus was that egg printers need to be chosen after consultation with the manufacturer of their grading equipment as communication between the grader’s computing system and the printer is critical. Other considerations were price, availability of parts, service within Australia, as well as the cost of consumables (ink).

Queensland producers have experienced different levels of satisfaction with the equipment, levels of services and accessibility to consumables. Inks have a limited shelf life and need to be readily available in Australia otherwise over ordering can lead to product losses.

Any reliable stamp maker should be able to make and supply pre-inked hand stamps. Investigate the options with a provider in your local area.

## 8. Useful contacts

The following people have on farm experience with installing egg stamping equipment as well as oiling equipment onto egg packing and grading equipment which they install and service.

Contact:	Wes Dudley	Contact:	Garry Sterling
	Dudley Engineering		G G Sterling Pty Ltd
Address:	340 Bruce Crescent	Address:	PO Box 281
	Wallaharah NSW 2259		Pittsworth Qld 4356
Tel:	02 4392 1502	Tel:	07 4693 2959
Fax:	02 4392 2459	Mobile:	0407 115 998
Mobile:	0412 606 507	E-mail:	ggsterlingptyltd@bigpond.com.au
E-mail:	wesdudley@bigpond.com.au		

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## 9. Equipment currently available in Australia

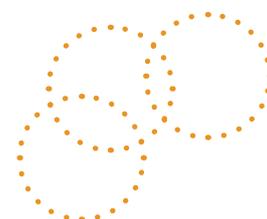
Companies currently operating, or represented in Australia include those listed alphabetically on the following pages. Please note that some information was accessed from the company's websites and as such, uses their terms and descriptions. Note also, that prices are subject to change.

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### 9.1 APS (Alternative Printing Services)

The APS group specialises in industrial marking and coding using ink jet technology on both cartons and eggs. APS develops alternative solutions for your product marking, enabling you to significantly reduce your marking costs with innovative maintenance-free marking systems and marking products for industrial ink jet marking equipment including economical high quality consumables and spare parts as well as professional services.

Address: Unit 2, 34 Collinsvale Street  
Rocklea QLD 4106  
Tel: 1300 553 713  
Fax: 07 3274 4493  
E-mail: [info@aps-direct.com.au](mailto:info@aps-direct.com.au)  
Web: <http://aps-direct.com.au>



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### 9.2 Ausgiant Marking Systems Pty Ltd (see Appendix A, page 22)

There are four inkjet egg marking systems available with the entry level being approximately \$13,000–\$14,000.

Address: Unit 25, 43 Johnson Street  
Chatswood NSW 2067  
Tel: 02 9411 2452  
Fax: 02 9412 2048  
E-mail: [info@ausgiant.com.au](mailto:info@ausgiant.com.au)  
Web: Egg Coder EC 2M [http://www.ausgiant.com.au/eggcoder\\_1.html](http://www.ausgiant.com.au/eggcoder_1.html)  
Egg Coder EC M [http://www.ausgiant.com.au/eggcoder\\_2.html](http://www.ausgiant.com.au/eggcoder_2.html)  
Egg Coder ED 5H [http://www.ausgiant.com.au/eggcoder\\_3.html](http://www.ausgiant.com.au/eggcoder_3.html)  
Egg Coder EP 5C [http://www.ausgiant.com.au/eggcoder\\_4.html](http://www.ausgiant.com.au/eggcoder_4.html)

### 9.3 Bellsouth Pty Ltd

Bellsouth supplies and installs inkjet stampers for lower capacity egg graders such as the Mobanette and Sanitouch grader/candlers. These inkjet stampers can be retrofitted to most small egg graders. Bellsouth single lane inkjet printing can be added to any single track system and several units can be added to multi-track graders. These units can print a number of formats including line art logos, and ID codes. Systems start from \$2000 with running costs of approximately \$70 per million impressions. They are ideal for low volume graders.

Contact: Jim Finger  
Address: PO Box 1233  
Narre Warren VIC 3805  
Tel: 03 9796 7044  
Fax: 03 9796 7033  
E-mail: poultry@bellsouth.com.au  
Web: http://www.bellsouth.com.au



Inkjet printer for a small hand-fed egg grader.

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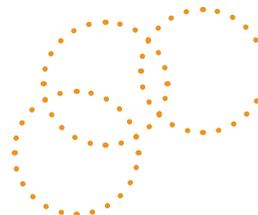
### 9.4 Dunogan Farm Tech Pty Ltd

Dunogan supplies inkjet printers with Riva Selegg egg graders. Riva Selegg egg graders are made in Italy and the inkjet egg stampers are quality printers made in Germany. A new Riva Selegg egg grader ordered with inkjet egg stamper will be supplied with 10 cartridges of food grade ink that are capable of printing 3.5–4 million prints. A variety of ink colours are available. Current replacement cost of 10 units of food grade printer ink cartridges (complete with delivery) is approximately €475. Costs of the inkjet egg stamper vary according to the size of the egg grader. A general guide is:

1. Inkjet egg stamper (one line fixed print), ex-factory €1950
2. Inkjet egg stamper (two lines: brand name and date. Self programmable), ex-factory €4000

Note: These inkjet egg stampers are *pre-egg weighing stampers*.

Contact: Rob Duns  
Address: PO Box 195  
Tamworth NSW 2340  
Tel: 02 6766 9909  
Fax: 02 6766 9977  
Mobile: 0418 660 266  
E-mail: info@dunoganfarmtech.com.au  
Web: http://www.dunoganfarmtech.com.au



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### 9.5 Easyprint Australia Pty Ltd

Easyprint supplies the Minijet-printer, a new industrial printer produced in Denmark. It is easy to mount and does not require any further integration into PC-equipment or the like. The wide range of inks enables the Minijet-printer to print on all surfaces — for example, directly on to eggs as well as on different types of packaging.

Contact: Chris Moog, National Sales Manager  
Address: 27 Cleg Street  
Artarmon NSW 2064  
Tel: 02 9439 9555  
Fax: 02 9439 9556  
Mobile: 0434 422 588  
E-mail: chris@easy-print.com.au  
Web: http://www.easy-print.com.au

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## 9.6 Express Rubber Stamps

Express Rubber Stamps are suppliers of pre-inked hand held stamps for egg stamping to small producers in south east Queensland.

Address: 347 Ruthven Street  
Toowoomba QLD 4350  
Tel: 07 4632 8349  
Fax: 07 4638 3980  
E-mail: [info@expressrubberstamps.com.au](mailto:info@expressrubberstamps.com.au)  
Web: <http://www.expressrubberstamps.com.au>

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## 9.7 Imaje (see Appendix B, page 26)

Imaje supplied continuous inkjet printers that code onto fresh eggs, utilising a Moba interface. The price of the printer varies depending on the application, environment and accessories/options required. The basic 9030 models starts off at approximately \$16,000 and be as high as \$23,000 if it needs to be waterproof/dustproof, or if the installation is difficult, etc. This price does not include accessories and optional features, which at most can come up to \$5000 (i.e. if brackets need to be made, if a specialised integration and interface is needed, etc.)

Contact: Catherine Topp, Marketing Specialist  
Markem-Imaje Business Group, Australia & New Zealand  
Tel: +61 1300 730 428  
Web: <http://www.markem-imaje.com.au>

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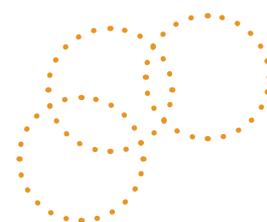
## 9.8 Insignia (Domino) (see Appendix C, page 28)

Domino manufacture continuous inkjet printers and pricing can range from \$12,000–\$20,000 per system depending on the solution required (i.e. number of lines of code, speed, integration level). Insignia is the distributor and authorised service provider for Domino printers. Insignia can install, customise and maintain machinery and will rent or lease machines to smaller users who cannot afford to purchase the systems.

Contact: Brad Jeavons, National Sales Manager  
Labelling Systems  
Tel: 1300 467 446  
Fax: 07 3364 2111  
Mobile: 0402 448 445  
E-mail: [sales@insignia.com.au](mailto:sales@insignia.com.au)  
Web: <http://www.insignia.com.au>

Contact: Russell Wiseman, Product Manager  
Mobile: 0411 860 513

.....



### 9.9 Matthews Intelligent Identification (Linx Printers) (see Appendix D, page 30)

Matthews have a wide range of coding, labelling and data-capture solutions including inkjet and laser printers. Matthews also sells laser printers but does not promote these for use with eggs.

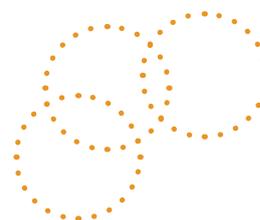
Address: 35 Laser Drive  
Rowville VIC 3178  
Freecall: 1800 333 074  
Fax: 03 9763 2020  
E-mail: bwnichol@matthews.com.au or customer.support@matthews.com.au  
Web: <http://www.matthews.com.au>

.....

### 9.10 Moba

Moba is a Dutch manufacturer of egg grading and packing machines and recommends printers made by two companies: Imaje and Domino.

Contact: Catherine Chin, Moba Asia Sdn. Bhd.  
Address: Block D, Unit 201  
Phileo Damansara 1, Jalan 16/11  
46350 Petaling Jaya  
Malaysia  
Tel: +60 3 7956 9336  
Fax: +60 3 7958 6233  
Service: +61 3 7954 4133  
E-mail: [info@asia.moba.com.my](mailto:info@asia.moba.com.my)  
Web: <http://www.moba.nl>



### 9.11 Prinzen (see Appendix E, page 38)

Contact: Mike Ward, Prinzen Asia  
Tel/fax: +60 361 400 346  
GSM: +60 163 318 436  
E-mail: [mike.ward@prinzen.com](mailto:mike.ward@prinzen.com)  
Web: <http://www.prinzen.com>

#### Options available and costs

1. Ovoprint A5 is an integral printer built into Prinzen's PSPC-30 egg packer (a farm based unit for packing eggs into 30 cell trays).
2. Ovoprint A5 stand alone unit. This unit comes with a mobile stand and is ready to use from the box 'as it were'. Although dependent on how quickly the operator loads the unit with trays, it is possible to print up to 50,000 eggs per hour. There are five print heads inside the unit that use inkjet cartridges to print one or two lines of alpha-numeric text of up to 17 characters long. Time/date coding is also possible.

The ex-works price of the Ovoprint A5 stand alone unit is €7373 (€7607 with date/time function). Food grade ink cartridges are available in two colours (blue and pink) and cost €32 each. A single cartridge will print over 200,000 eggs with a single line of text with 14 characters.

#### Outlets in Australia

Imexco Australia Pty Ltd  
Address: Lot 2, Winta Road  
Tea Gardens NSW 2324  
Tel: 02 4997 2045

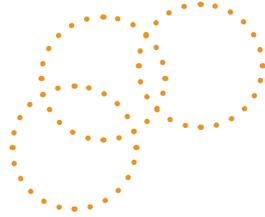
Ryan-Ryte Enterprises Pty Ltd  
Address: 4 Frankston Gardens Drive  
Carrum Downs VIC 3201  
Tel: 03 9782 5515

.....

## 9.12 VISY Technology Systems

Visy supply Hitachi continuous inkjet printers for printing on cartons and eggs.

Contact: Len Jones  
Address: 11A Ferndell Street  
Granville NSW 2142  
Tel: 02 9892 9500  
Fax: 02 9892 9599  
Mobile: 0412 067 412  
E-mail: len.jones@visytech.com  
Web: <http://www.visytech.com>



---

## 10. Egg stamping inks

### 10.1 Bellsouth Pty Ltd

F284 Egg Stamping Dye is a standard food grade impact dye for use on open stamp pad egg stamping systems. Identify your eggs with your brand to increase customer loyalty. Suits auto stampers on Ben Nevis, Staalkat, Moba, etc. or manual stamp pads. Bottles of dye are available in 500 ml for \$30 plus delivery.

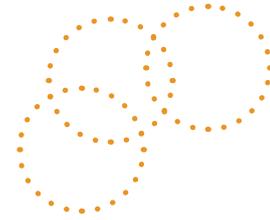
Contact: Jim Finger  
Address: PO Box 1233  
Narre Warren VIC 3805  
Tel: 03 9796 7044  
Fax: 03 9796 7033  
E-mail: [poultry@bellsouth.com.au](mailto:poultry@bellsouth.com.au)  
Web: <http://www.bellsouth.com.au>



## 11. Equipment currently available internationally

### 11.1 Advanced Industrial Micro Systems (see Appendix F, page 41)

Contact: Samir Garg  
Address: 201, Triumph Industrial Estate, Pt Motilal Nehru Marg,  
Behind Patel Extrusion, Goregaon (E)  
Mumbai 400 063  
Maharashtra  
India  
Tel: +91 22 2875 6353 / 2876 6351  
Fax: +91 22 2876 6352  
E-mail: SamirGarg.AIMS@gmail.com or samir\_garg@vsnl.com  
Web: <http://www.coding-india.com/index>



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### 11.2 Nuovo Printing Systems (see Appendix G, page 44)

Nuovo manufactures printing systems for the marking and coding of eggs by inkjet egg printing or stamping. Nuovo delivers stand-alone egg printers and stampers but also delivers egg printers and stampers for installation on farm packers or graders. Nuovo egg printing systems has been active since 1992 in the poultry/egg industry.

#### Inkjet egg printing

This cartridge based technology could be used to print a traceability code, the production/expiry date and/or a small logo. Prices from approximately €3000–€9000. These printers can be delivered as:

- off-line systems; various models with capacity from 4000–40,000 eggs/hour
- in-line systems; various models for (Moba/Staalkat/Diamond) farm packers, capacity up to 40,000 eggs/hour
- in-line systems; various models for the weighing track of all type of graders, capacity from 1500 up to 40,000 eggs/hour.

**Easy-print egg stamping:** This screen printing based technology could be used to stamp a traceability code and/or a logo (no date). Prices from approximately €500–€6000. These stampers can be delivered as:

- off-line systems; various models (hand stamp to stand alone unit conveyors) with capacity up to 17,000 eggs/hour
- in-line systems; various models for packing lanes (Moba/Staalkat/Diamond) farm packers and grading machines, capacity up to 36,000 eggs/hour.

Contact:	Maurik Wouters	Australian
	Nuovo BV	contact: Garry Sterling
Address:	Dorpsstraat 84	Address: PO Box 281
	5471 NA Loosbroek	Pittsworth QLD 4356
	The Netherlands	Tel: 07 4693 2959
Tel:	+31 (0) 623 207 337	Mobile: 0407 115 998
Fax:	+31 (0) 413 229 158	E-mail: ggsterlingptyltd@bigpond.com.au
E-mail:	maurik.wouters@nuovo.ch	
Web:	<a href="http://www.eggprinting.com">www.eggprinting.com</a>	

.....

## 12. General printers that can be adapted

### 12.1 Anser Coding

Anser Coding Inc. (USA)

Address: 502-A Chaney Street  
Lake Elsinore CA 92530  
USA

Tel: +1 951 674 0051

Fax: +1 951 674 0055

E-mail: sales@anser-printers.us

Web: <http://www.anser-printers.com>

Anser Coding Inc. (China)

Address: 7F No. 52 Huli Road  
Huli Industrial Zone  
Xiamen 361006 China

Tel: +86 592 571 8888

Fax: +86 592 571 0888

E-mail: sales@anser-printers.com

Web: <http://www.anser-printers.com>

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### 12.2 Videojet Excel

There is a range of Videojet printers that can be used for egg stamping with prices ranging from a few thousand dollars to around \$15,000 depending on the speed and resolution required.

Contact: Michael Best

Tronics Pty Ltd

Address: 85 Northgate Drive  
Thomastown VIC 3074

Tel: 03 9464 2400

Toll free: 1300 66 1300

Fax: 03 9464 2538

E-mail: m.best@tronics.com.au

Web: <http://www.tronics.com.au>

Contact: Ben Gillespie

Dy-Mark (Aust) Pty Ltd

Address: 89 Formation Street  
Wacol QLD 4076

Tel: 07 3271 2222

Fax: 07 3271 2751

Global office

Videojet Technologies

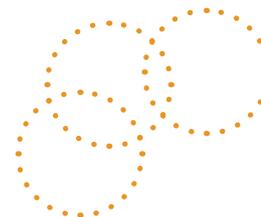
1500 Mittel Boulevard

Wood Dale IL 60191

USA

Tel: +1 630 860 7300

Web: <http://www.videojet.com>



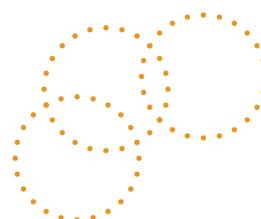
### 13. Laser etching of eggs

This process uses a thin laser beam to etch fine lines on the shells of eggs before they are placed into cartons. The etching leaves a darkened mark on white eggs and a lightened mark on brown eggs. The etching penetrates approximately 5% of the shell's thickness. It is claimed not to increase the susceptibility of marked eggs to breakage. Field evidence from Europe suggests the shelf life of laser etched eggs is reduced and oiling is required to extend it.

Attempts to market laser etching equipment have been unsuccessful to date due to the high set-up costs. Laser printers print at a slower speed than that required to print on eggs being graded on the higher volume egg grading equipment. Two laser printers are required for each track of eggs which increases the stamping equipment installation cost. Indications are that the saving in ink costs is not offset by the higher capital and maintenance costs.



Laser etching on white shelled eggs.



## 14. General conclusions and recommendations

It is highly likely that egg stamping will become compulsory in all states of Australia in the near future and there is a cost associated with its implementation for each producer. The introduction of stamping will most likely be associated with more stringent food safety regulations. If the farm is already operating a well implemented quality assurance program additional changes to meet the new regulations will be minimal, however it is the additional licensing and auditing costs together with the set-up of egg stamping that are significant. Small farms (fewer than a 1000 hens) are most likely to use a manual pre-inked stamp which can be purchased locally. Small farms with more than about 1000 hens can purchase an inkjet stamper that can be fitted to their small egg grader.

All medium and large enterprises will need in-line equipment such as inkjet printers, with the purchase of such equipment costing at least \$12,000. Entry level for Imaje printers is \$16,000, for Domino \$12,000 and for Ausgiant \$13,000–\$14,000. A number of companies have leasing arrangements which may assist in financing the introduction of stamping.

It is essential that in-line printers are compatible with the grading and processing equipment being used and it is strongly recommended that producers consult the company that manufactured their processing equipment. For instance, Moba, who markets their own and Diamond brand machines, recommends using Imaje or Domino printers. Ausgiant advertises four different egg coders.

Any inkjet equipment designed for use in labelling food products can, potentially, be used for labelling eggs. However, there are advantages in purchasing equipment which has already been adapted for use with eggs and tested over a period of time. Laser printers are available, however, initial purchase costs may be higher and this equipment has to be tested extensively for its suitability of use with egg grading and packing equipment.

Other important considerations are the availability and quality of parts, servicing and the supply of consumables such as ink from within Australia. Many imported products can take a significant period of time to arrive and ink has a limited shelf-life so cannot be stored indefinitely. The cost of consumables also needs to be evaluated as the amount of printing on each egg will determine how much — or how little — these ongoing costs will be.

### Checklist for the introduction of egg stamping

1. Familiarise yourself with the legislative requirements in your state and the requirements of your major customers.
2. Consider the size of your farming operation — is it small enough to use manual stamping? If not, you will need to consider an in-line inkjet printer (either purchased or leased).
3. Do you want to use stamping as a promotional tool?
4. Check with the company who manufactured your egg grading and processing equipment to see what they recommend in relation to compatibility.
5. Make contact with suppliers of suitable equipment to identify specific options for your farming operation. Arrange for a visit by their technical representative.
6. Check on the availability and time frame for servicing and supply of consumables, e.g. ink.
7. Consider how much information you want to include on your 'stamp'.

## 15. Sources of information

Auditor-General of Tasmania. 2008. Auditor-General Special Report No. 77. *Food safety: safe as eggs?* Government Printer, Tasmania. November 2008.

<http://www.audit.tas.gov.au/publications/reports/specialreport/pdfs/specialreport77.pdf>  
Accessed 26 November 2009.

Department of Environment, Food and Rural Affairs, United Kingdom.

<http://www.defra.gov.uk>

Food Standards Australia New Zealand (FSANZ). 2009a. *Proposal P301 Primary Production and Processing Standard for Eggs and Egg Products. Potential Hazards in the Primary Production and Processing of Eggs: Government and Industry Control Measures and Perceived Gaps*. September 2009 (see page 11 "Traceability").

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Accessed 8 November 2011.

Food Standards Australia New Zealand (FSANZ). 2009b. *Draft Assessment Report. Proposal P301. Primary Production and Processing Standard for Eggs and Egg Products*. 23 September 2009 (see pages 40–45).

<http://www.foodstandards.gov.au/foodstandards/proposals/proposalp301primaryp3426.cfm>.  
Accessed 8 November 2011.

Safe Food Production Queensland. 2007. *Food safety guide for Queensland's egg suppliers*. November 2007.

[http://www.safefood.qld.gov.au/index.php?option=com\\_content&view=section&id=6&Itemid=32](http://www.safefood.qld.gov.au/index.php?option=com_content&view=section&id=6&Itemid=32). Accessed 24 October 2011.

Safe Food Production Queensland. 2009. *Queensland Unique Egg ID Register*. 20 March 2009.

[http://www.safefood.qld.gov.au/index.php?option=com\\_content&view=section&id=6&Itemid=32](http://www.safefood.qld.gov.au/index.php?option=com_content&view=section&id=6&Itemid=32). Accessed 24 October 2011.

Australian Government Department of Health and Ageing. *Primary Production and Processing Standard for Eggs and Egg Products*. 26 May 2011

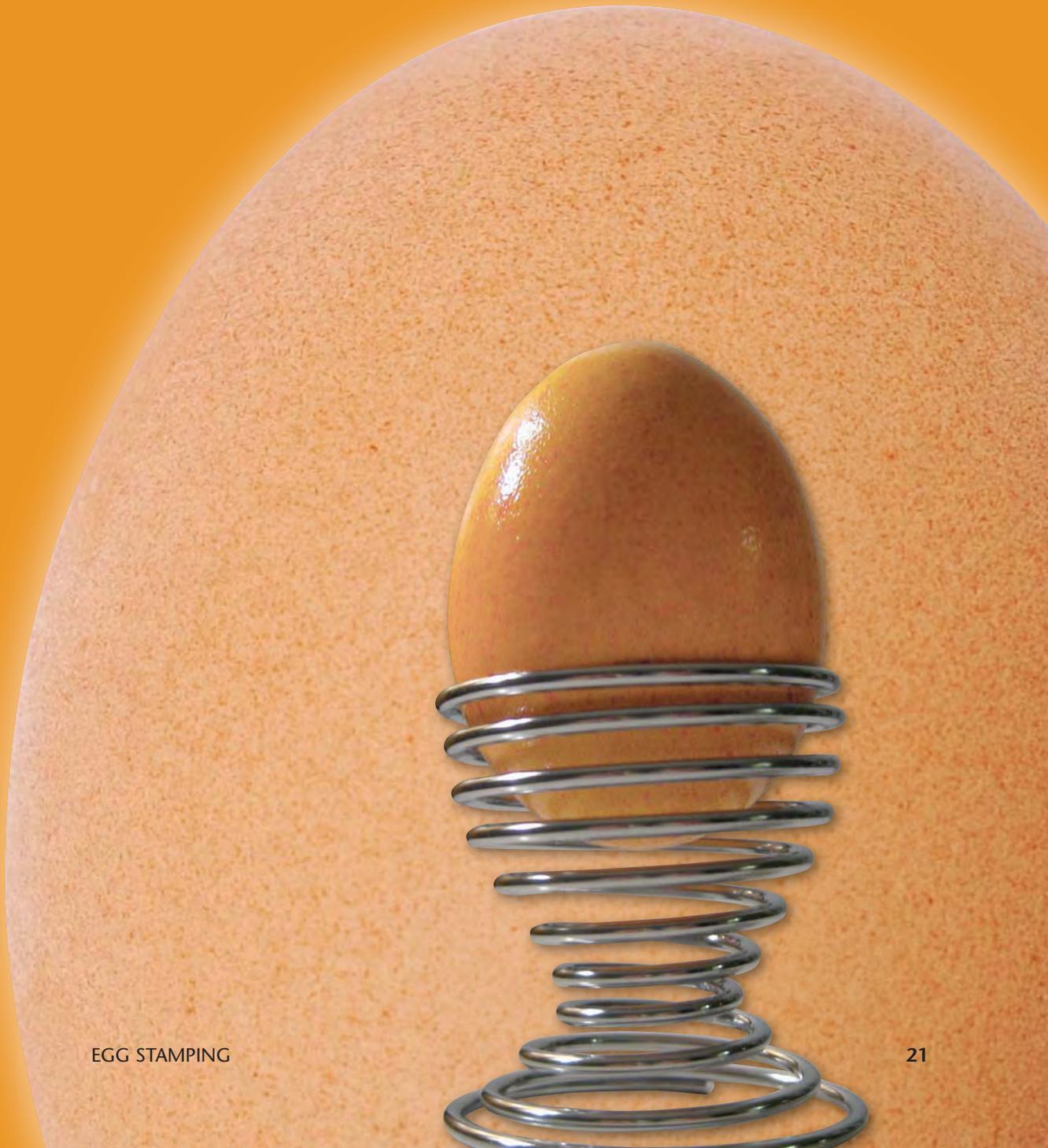
<http://www.health.gov.au/internet/main/publishing.nsf/Content/foodsecretariat-isc-model.htm>.  
Assessed 24 October 2011.



## Appendices

These are examples of equipment available, though the list is not exclusive.

A.	Ausgiant Marking Systems	22
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# Appendix A: Ausgiant Marking Systems

## AUSGIANT MARKING SYSTEMS PTY LTD

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Best Product
Best Customer Care

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CABLE MARKING
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METAL PRINTER

SPOT & LINE MARKER

DOT & LINE MARKER

WAX MARK

MAXLINE

LP 7100 AND LP 7200

7100 P AND 7200 P

MP 7

PORTABLE PRINTER

EGG CODER EC 2M

EGG CODER EC M

EGG CODER ED 5H

EGG CODER LP 5C

●

### EGG CODER EC 2M

INKJET MARKING

The EC 2M Printer is designed for marking eggs in corrugated packaging at chicken farms incorporated into sorting machines. It can be built into the Dutch lines and other conveyors. It provides for marking eggs after they have been sorted. The printing is carried out in a shuttle mode when the printing heads move forward and backward with an output of up to 17,000 eggs per hour. A set includes: ED 3M - 1 unit & a shuttle device - 1 unit.

TECHNICAL SPECIFICATIONS	
One-line marking Two-line marking	Category, date Line 1 - name of the chicken farm, line 2 - category, date or season greetings (like "Happy New Year!" and etc)
Character height	1.2-15 mm
Number of characters on a line	Up to 11 (limited by the size of the egg)
Linear speed of the conveyor At one-line printing At two-line printing	Up to 3 m/s Up to 0.6 m/s
Possibility to synchronize the printing speed and the conveyor speed	With a sensor
Number of fonts	6
Possibility to store graphics (logo, trade mark) in the memory	Up to 96
Possibility to interface with a computer	RS232
Possibility to control the size of the mark and its displacement during the operation	With a typesetter
Type of ink	Aqueous, spirit, ethylalcohol & ketone
Colour of ink	Black, blue, white, pink, red & crimson
Consumption of ink for printing 70 min characters of a standard 5x7 matrix	1
Hose length: Standard & Tailor made	1.5 m, up to 4 m
Environment: Humidity & Temperature	10 - 80 %, +5 - +40 degrees

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DOT & LINE MARKER

WAXMARK

MAXLINE

LP 7100 AND LP 7200

7100P AND 7200P

MP 7

PORTABLE PRINTER

EGG CODER EC 2M

EGG CODER EC M

EGG CODER ED 5H

EGG CODER EP 5C

●
EGG CODER EC M
>>> EGG CODER EC M

The EC M (two-coordinate) is widely used at chicken farms with an output of up to 100,000 eggs a day, as well as at farms that do not have sorting machines or conveyors. It incorporates an upgraded marker ED 3M and a conveyor for moving corrugated packaging. It is capable to mark 15-16 thousand eggs in corrugated packaging per hour.

TECHNICAL SPECIFICATIONS	
Number of lines in the mark One-line marking Two-line marking	Category, date Line 1 - name of the chicken farm, line 2 - category, date or season greetings (like "Happy New Year!" and etc)
Character height	1.2-15 mm
Number of characters on a line	Up to 124 (limited by the size of the egg)
Time of marking one full packaging with eggs	7 seconds
Number of marked rows	5
Definition of the number of marked rows	Automatic
Movement of the printing head	Reciprocating
Printing when the head moves	In both directions
Emergency disconnection	Automatic
Type of ink	Aqueous for food industry (certified)
Colour of ink	Black and Red
Basic Set Printer ED 3M + Conveyor	1 + 1
Conveyor dimensions	700 x 650 x 400 mm
Construction	Desktop
Hose length: Standard, Tailor-made	2 m, up to 4 m
Environment: Humidity & Temperature	10 - 80 %, +10 - +40 degrees

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SPOT & LINE MARKER

DOT & LINE MARKER

WAX MARK

MAXLINE

LP 7100 AND LP 7200

7100 P AND 7200 P

MP 7

PORTABLE PRINTER

EGG CODER EC 2M

EGG CODER EC M

EGG CODER ED SH

EGG CODER EP 5C

●
**EGG CODER ED SH**
(Egg Stamping)




The ED SH Printer is designed for printing at higher speeds with one or two-line marking of eggs in grooved liners. The ED SH includes the EU printer with five printing heads. 5 rows of eggs are printed simultaneously, span 48 mm. The printer can be mounted on any transporters to carry the grooved liners at the speed of 15 to 40 cm per second.

The ED SH marking printer has the advantages of operation simplicity, light weight, small size, automatic identification of grooved liners in the conveyor and high dust and humidity resistance.

TECHNICAL SPECIFICATIONS	
Number of lines in the mark One-line marking Two-line marking	Category, date Line 1 - name of the chicken farm, line 2 - category, date or season greetings (like "Happy New Year!" and etc)
Character height	1.2-15 mm
Capacity	up to 150 thousand eggs per hour
Weight	28 kg
Control unit	380 x 340 x 340 mm
Printing head unit	270 x 106 x 252 mm
Type of ink	Aqueous, spirit, ethylalcoholive & ketone
Colour of ink	Black, blue, white, pink, red & crimson
Hose length: Standard & Tailor made	1.5 m, up to 4 m
Environment: Humidity & Temperature	10 - 80 %, +5 - +40 degrees

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LP 7100 AND LP 7200

7100P AND 7200P

MP 7

PORTABLE PRINTER

EGG CODER EC 2M

EGG CODER EC 1M

EGG CODER ED 5H

EGG CODER EP 5C

EGG CODER EP 5C
INKJET MARKING




The EP 5C Printer is the most powerful and safest system for two-line marking of eggs in corrugated packaging for chicken farms with an output of 200,000 to several million eggs a day.

The EP 5C Printer incorporates 5 ED 3M markers operating in parallel and marks eggs in corrugated packaging with maximum output up to 100,000 eggs per hour on any conveyors moving at speeds between 15 and 20 cm per second.

TECHNICAL SPECIFICATIONS	
Number of lines in the mark One-line marking Two-line marking	Category, date Line 1 - name of the chicken farm, line 2 - category, date or season greetings (like "Happy New Year!" and etc)
Character height	1.2-10 mm
Number of characters on a line	Up to 124
Linear speed of the conveyor At one-line printing At two-line printing	Up to 3 m/s Up to 1.5 m/s
Possibility to synchronize the printing speed and the conveyor speed	With a tachometer
Printing direction	Forward and backward
Possibility to store graphics (logo, trade mark) in the memory	
Possibility to interface with a computer	RS232
Type of ink	Aqueous, spirit, ethylalcoholic & ketone
Colour of ink	Black, Blue, White and Red
Consumption of ink for printing 70 min characters of a standard 5x7 matrix	1
Hose length: Standard & Tailor made	2 m, up to 4 m
Environment: Humidity & Temperature	10-80%, +5 - +40 degrees

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# 9030 / 9030 IP65

small character inkjet printers ■■■



## Our technology ■■■

9000 Series printers offer the best balance between performance and flexibility in their segment for an easy integration in all manufacturing environments. Their state-of-the-art design requires minimal attention and provides high quality coding.

The continuous inkjet technology prints the best before dates, logos, alphanumeric text and 1D and 2D barcodes for food, beverage, pharmaceutical, cosmetic and electronic industries.

## Your benefits ■■■

**Simplicity** – Ergonomic design with intuitive user interface featuring shortcuts and direct access to consumables. Compact design and stand mounting option for easy integration into the production line.

**Performance** – Up to 8-line printing. High speed multi-line printing up to 5.5 m/s. Optional ethernet connectivity.

**Quality** – Automatic ink-pressure adjustment (Jet Speed Control) guaranteeing print quality.

**Uptime** – Unique head cleaning system to ensure trouble-free startup. Easy change of the consumables without stopping marking operations.

**Versatility** – Wide choice of options making integration onto most production lines efficient: mono- or twin-jet, 2 printing resolutions (71 and 115 dpi) and IP65 cabinet.



markem·imaje

the team to trust ■■■

## 9030 / 9030 IP65 specifications

### Print features

- Mono- or bi-jet printhead
- G head (printing resolution: 71 dpi) or M head (printing resolution: 115 dpi)
- Up to 8 lines of print
- Print speed: up to 5.5 m/s
- Font height: from 5 to 48 dots
- Character height: from 1.2 to 18.2 mm
- One and two-dimensional barcodes (Datamatrix)
- Wide choice of character (Latin, Arabic, Cyrillic, Greek, Japanese, Chinese, Hebrew, Korean...)

### Options

- IP65 (requires plant air)
- Ethernet connectivity
- Printhead pressurization kit
- 90° bent or side-mounted umbilical cable

### Operations

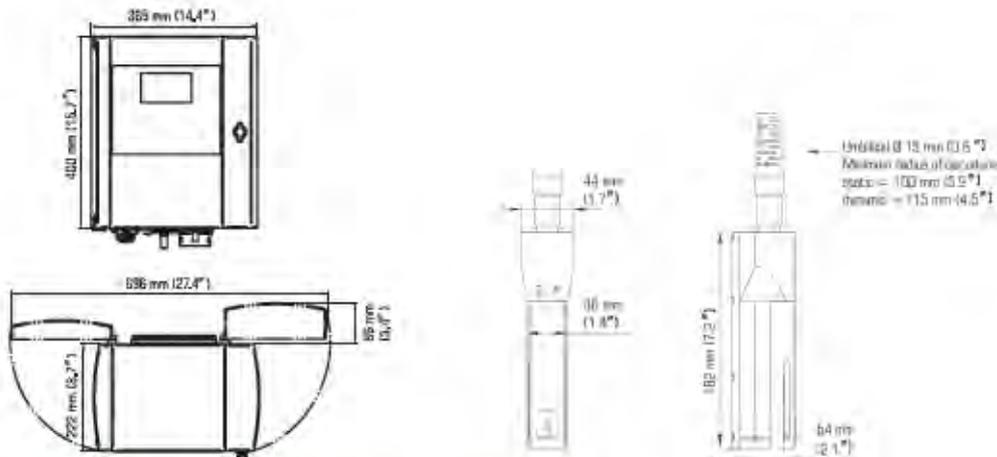
- Message library (up to 880 messages)
- International operator/machine interface (choice of 31 languages)
- Large, WYSIWYG, backlit, blue screen
- Integrated help for navigation and diagnostics
- Creation of logos directly on the operator/machine interface
- PCMCIA and Compact Flash cards reader
- IC60 ink circuit
- Jet Speed Control guarantees marking quality
- Automatic selection of fonts, depending on print speed and printhead/object distance
- Possibility to choose ink types: quick-drying, alcohol- and water-base
- 2 sealed cartridges, 0.8 liter each
- Quick connect/disconnect of accessories (photocell, encoder, alarm)
- RS-232/422 connectivity, parallel interface, many I/O possibilities to enable remote operation

### Other characteristics

- Weight: 19.5 kg
- 3-meter flexible umbilical cable
- Stainless steel cabinet
- Dust/humidity protection rating: IP54
- No plant air required
- Operating temperature range: 0° to 40° C, depending on ink used
- Humidity: 10% to 90% non-condensing
- Electrical power supply: 100-120 V or 200-240 V with automatic switching; frequency 50/60 Hz; power 60 VA

### Accessories

- Printer stand (stainless steel or aluminum)
- Printhead stand (stainless steel)
- Different printhead brackets
- Stainless steel printhead cover
- Photocell
- Encoder
- Alarm beacon (24 V)



To learn more visit, [www.markem-imaje.com](http://www.markem-imaje.com)



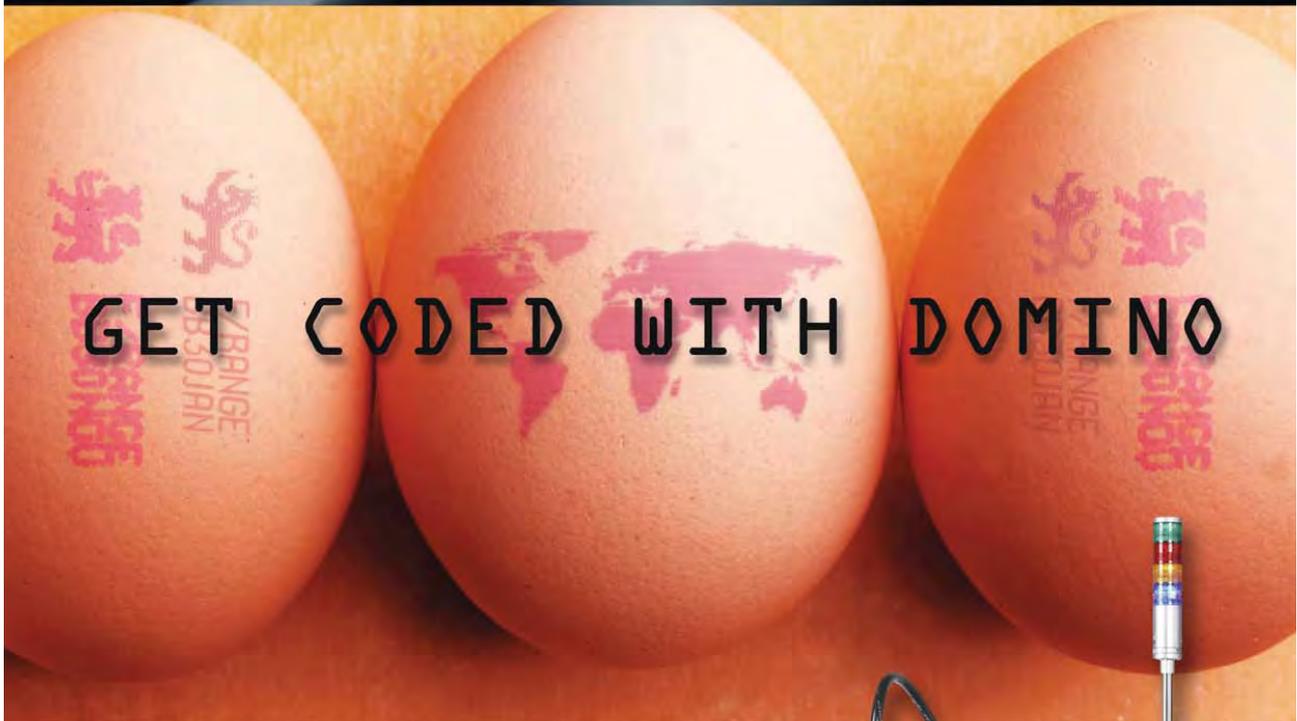
We reserve the right to amend the design and/or specifications of our products without notice.

9, rue Gaspard Monge  
B.P. 110  
26501 Bourg-les-Valence Cedex - France  
Tel.: +33 (0) 4 75 75 55 00  
Fax: +33 (0) 4 75 82 96 10  
  
150 Congress Street  
Keene, NH 03431  
United States of America  
Tel.: +1 800-258-5356  
Fax: +1 603-357-1836



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## Appendix C: Insignia (Domino)



*insignia* provides the technology for regulatory traceability from production to sale – Introducing the Domino A-Series Plus, a world leader in Egg Coding solutions.

### **The Domino A-Series Plus**

#### **Connects to all main graders**

The Domino Egg Coder has been designed in partnership with grader manufacturers and their customers, resulting in the highest standards for reliability, performance and ease of use. Software for all the major grader types is integrated within the machine to allow operation with any model, so even when the grader is replaced the A-Series Plus ink jet printer can easily be relocated to a different grader type.

#### **All electronics are inside the machine**

Traditionally, ink jet egg systems have required interface equipment which interprets the grader communication protocol. With A-Series Plus machines the software is integral to the machine which results in a compact and reliable installation.

#### **3 lines of variable information**

A-Series Plus can code up to three lines of mixed text and logos at the maximum production capacity of today's biggest graders.

#### **Unique self-cleaning ink system**

The large internal reservoir and nozzle seal enable the A-Series Plus to have truly automatic print head cleaning for unrivalled start-up and shut down performance.

#### **Food grade ink**

The A-Series Plus uses 445RD, a specially developed fast drying, boil resistant, self-disinfecting ink.

For further information on how insignia can assist you with your Egg Coding requirements contact **insignia sales** on 1300 467 446 or you can email [sales@insignia.com.au](mailto:sales@insignia.com.au)



## Appendix C: Insignia (Domino)



### Control Unit

Control panel: Membrane touch button  
 Cabinet: (A200, A400) Stainless steel (304) designed to IP53 (BS EN 60529:1992)  
 Cabinet dimensions (A200): 245mm x 475mm x 725mm (9.6" x 18.7" x 28.5")  
 Cabinet dimensions (A400): 560mm x 450mm x 375mm (22" x 17.7" x 14.8")  
 Weight (A200): 36kg (79lbs)  
 Weight (A400): 33kg (72.4lbs)

### Character Control

- ◆ Auto repeat
- ◆ Auto invert/reverse
- ◆ User defined clock format
- ◆ Sequential/batch numbering
- ◆ Inverse reverse and bold characters
- ◆ Character width and height adjustment
- ◆ Print delay
- ◆ Product counter
- ◆ Barcodes
- ◆ Message repeat

### Compatible Grader Types

Selecta: 12R, 18R, 24R  
 Moba: 3500, 5000, 5100, 6000, 8000  
 Omnia: 250, 330  
 Diamond: 8200, 8300, 8400

### Ink System

Viscosity control: Automatic  
 Ink bleed control: Automatic on start up  
 Ink and make-up refill: 825ml (.87qt) cartridge automatically metered  
 Peltier: Optional  
 FDA approved ink system: Optional

### Printhead

Dimensions: 240mm x 41mm x 47mm (9.45" x 1.62" x 1.85")  
 Conduit length: 6m (23.6')  
 Positive air: Standard unless FDA ink system fitted  
 Airdryer: Internal compressor or factory air option  
 Must be fitted with FDA ink system

### Environment

Temperature range: 5 – 45°C (40 – 112°F) operating  
 Humidity: 10 – 90% (non-condensing)  
 Electrical requirements: Single phase, fully auto-ranging  
 90 – 132V/180 – 264V, 50/60Hz 200VA

### Standard Connections

Product detector: Provided by grader  
 Shaft encoder input: Open collector or TTL encoder (Selecta and Diamond graders only)

For further information on **Domino Ink Jet Coders**  
 Contact: **insignia sales** on 1300 467 446  
 Email: [sales@insignia.com.au](mailto:sales@insignia.com.au)



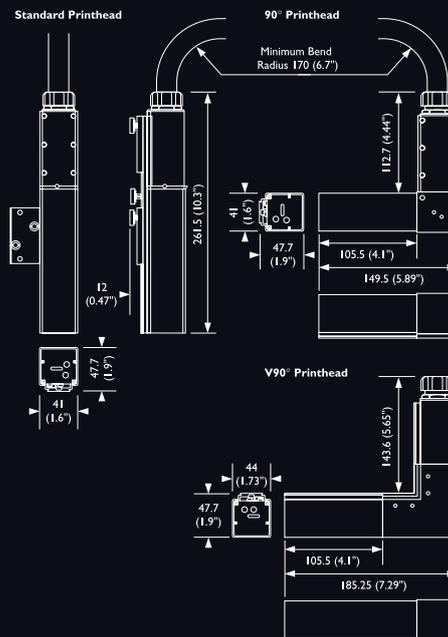
### Options

Alarm beacon connector: IP68 7 way socket

### Character Height

Throw Distance	Minimum	Maximum
2mm (.08")	0.8mm (.03")	3.2mm (.13")
6mm (.24")	1.0mm (.04")	3.8mm (.15")
12mm (.48")	1.2mm (.05")	4.8mm (.19")

### Dimensions



 **insignia**  
[www.insignia.com.au](http://www.insignia.com.au)

## Appendix D: Matthews Intelligent Identification

### Continuous Ink Jet Printers

# Linx 4900

Cleaner. Clearer. Cleverer.



#### Cleaner.

- Stainless steel cover has no dirt traps and provides a surface off which liquid naturally slides.
- IP55 rating - the new enclosure design is ideal for washdown environments such as food packaging, without the added cost of factory air.
- Autoflush of the printer and conduit at shutdown ensures that the printer is always ready for a trouble-free startup.
- Ink and solvent refilling is mistake proof and mess free.

#### Clearer.

- Printhead is designed specifically for two-line printing and uses an intelligent jet control system for maintaining print quality.
- Printhead temperature, time of flight and ink pressure are all managed by the printer itself for trouble-free viscosity control and consistent print quality, with no need for manual intervention.
- Sealed printhead incorporates a valve system for clearer, cleaner startups, even after extended shutdowns.
- Clear, simple user interface with WYSIWYG message display means that messages are created, selected, edited and printed right first time.

#### Cleverer.

- The Linx 4900 is cleverly designed to ensure minimal intervention is needed from the user.
- Running parameters are monitored and adjusted by the printer itself, with clear on-screen diagnostics.
- The user never needs to open the enclosure, thus reducing potential damage to critical components.
- No manual adjustments are needed to the printhead.
- Up to 50 messages can be stored, and selected via a preview screen for easy identification.
- When printing is finished, a simple one-button press will shut down the printer and switch it off.

INTELLIGENT IDENTIFICATION

## Appendix D: Matthews Intelligent Identification

# Continuous Ink Jet Printers

### Dimensions (mm)



\*Including clearance



INTELLIGENT IDENTIFICATION

www.matthews.com.au  
email: info@matthews.com.au  
Telephone: **1800 333 074**

### PERFORMANCE

	ULTIMA	ULTIMA plus
Printhead	ULTIMA	ULTIMA plus
Lines of print supported	1 or 2	1 or 2
Character height range	2.1 to 7.7mm	2.6 to 8.8mm
Maximum speed: single line print, wide pitch	6.25 m/s	7.28m/s
Maximum number of characters per second	2222	2133
Standard speed (SS) print option	✓	✓
High speed (HS) print option	Optional	Optional
Super high speed (SHS) print option	Optional	Optional
Maximum message length (number of characters)		682
Graphics/logo printing		✓
Number of message types		Up to 9

### GENERAL FEATURES

Single button startup and shutdown	✓
Menu-driven message creation and editing	✓
Integral QWERTY keypad (full size)	✓
WYSIWYG message display	✓
High brightness back-lit LCD display with adjustable contrast (black on white, 256x64 pixels)	✓
Mistake proof mess free ink and solvent refilling	✓
Auto printhead and conduit flush	✓
Auto power off	✓
Choice of operator languages	21
Printer status indicators (4 LEDs)	✓
Full on-screen diagnostics	✓
Password protected functions	✓

### PROGRAMMING & PRINTING FACILITIES

Fixed and variable text	✓
Upper-case and lower-case characters	✓
Bold factor up to 9 times	✓
Character height, width and delay functions	✓
Automatic formats for shift coding, dates and times	✓
Flexible date and time format options	✓
Real-time clock functions	✓
Automatic date forward function	✓
Batch coding and counting	✓
Sequential numbering	✓
Reverse printing	✓
Timed-message function	✓
LogoJet <sup>®</sup> PC-based message and logo creation software	Optional
DDE Driver for PC application development	Optional

### MEMORY CAPACITY

Message storage capacity (number of messages)	Up to 50
Logo storage capacity on PROM (number of logos)	Up to 100

### PRINthead OPTIONS

Ultima (62µm)	✓
Ultima plus (75µm)	✓
90° printhead configuration	Optional
2m conduit	✓
4m conduit	Optional
Positive air purge to printhead	Optional
Cutaway printhead cover tube	Optional
Magnetic shielded cover tube	Optional

### INK RANGE

Linx MEK base (dye/pigmented excluding white)	✓
Linx mixed base	✓
Linx ethanol base	✓

### CONNECTIONS/INTERFACING FOR

Shaft encoder	✓
Product detector	✓
External single stage alarm output	✓
RS232	✓
Volt-free contact alarm connection	Optional
LogoJet <sup>®</sup> and DDE Driver software	Optional

### PHYSICAL CHARACTERISTICS

Stainless steel base and cover	✓
Environmental protection rating (EN60529:1991 / IEC60529:1989)	IP55
Mounting options	Bench or console
Operating temperature range	5 – 45°C
Humidity range (relative humidity, non-condensing)	10 – 90%
Power supply	100 – 230V 50/60Hz
Power rating	200W
Weight	20kg

### REGULATORY APPROVALS

TÜV/GS	✓
CE mark	✓
FCC	✓

HOPEAD 1/04 #8004

Continuous Ink Jet Printers

Linx 7300



**Is your current coding equipment costing you too much? Many continuous ink jet printers have significant hidden costs, and over time these can cost much more than the printer itself.**

The Linx 7300 range of printers is designed to avoid hidden costs and save you money with every print. The Linx 7300 printer provides fast, non-contact printing of messages on almost any moving surface on the production line.

**LOWEST RUNNING COSTS**

- Dynamically adjusted service intervals of up to 6000 hours
- Minimal routine maintenance – no expensive ink modules to replace and no ink tank changes between services
- No need to leave the printer switched on, and no need to drain before extended shutdowns – saves cost and time
- Lowest solvent consumption with the Linx 7300 Solver model.

**MINIMISED PRODUCTION DOWNTIME**

- FullFlush™ system automatically cleans and dries the printhead and conduit at every shutdown, minimising manual cleaning
- Fast, mistake-proof refills with the new SureFill™ system
- Reduced cleaning times – robust, curvaceous stainless steel enclosure minimises dirt traps
- Automatic ink mixing with the Linx 7300 Spectrum. No need for operator intervention and delivers consistent code quality and contrast.

**ERROR-FREE CODING**

- QuickSwitch™ software allows fast and easy code changes using a barcode scanner
- Integral USB port enables trouble-free transfer of message content and set up data between printers
- Intuitive colour user interface with WYSIWYG display for easy message set up, minimising coding errors.

**FUTURE PROOF FEATURES**

- Data Matrix and 3-line printing provided as standard, with optional 4 or 5-line printing
- Wide range of message formats available, including logos and barcodes
- Additional lines of print, faster print speeds and remote communications tools can be added as you need them.

The Linx 7300 range includes specialist printers which are designed to deliver lowest printing costs in specific applications:

**Linx 7300 Spectrum** – for high contrast printing onto dark or coloured surfaces with specialist pigmented inks.

**Linx 7300 Solver** – for lowest solvent consumption. Saves up to 40%.

**Linx 7300 Swift** – for printing on high speed production lines.

**Linx 7300FG** – for printing with food grade inks, including on-farm egg coding.

**Linx 7300BC** – for printing onto wet bottles.



# Continuous Ink Jet Printers

## Dimensions (mm)



## PERFORMANCE

	Micro	Mini	Ultima#	Midi#	Midi EC	Ultima plus	Midi plus
Printhead	1,2,3 or 4	1 or 2	1,2 or 3	1,2,3,4 or 5	1, 2 or 3	1, 2 or 3	1,2,3,4 or 5
Lines of print supported	1.1 to 8.0 mm	1.4 to 6.7 mm	1.8 to 7.8 mm	1.8 to 12 mm	1.8 to 10.5 mm	2.1 to 9.5 mm	2.1 to 13.8 mm
Character height range	8.41 m/s	6.83 m/s	6.25 m/s	6.28 m/s	6.28 m/s	7.28 m/s	2.10 m/s
Maximum speed: single line print, wide pitch, High Performance print option	2222	2667	2222	1905	1905	2133	821
Maximum number of characters per second	*	*	*	*	*	*	*
High Performance (HP) print option	*	*	✓	*	*	*	*
Linx 7300	*	*	✓	*	*	✓	*
Linx 7300 Spectrum	*	*	✓	*	*	✓	*
Linx 7300 Solver	*	*	✓	*	*	✓	*
Linx 7300 Swift		✓			✓		
Linx 7300FG			✓	*	✓		
Linx 7300BC			✓	*			

# For certain inks, Ultima A and Midi A printheads replace Ultima and Midi printheads, to provide reliable performance. Print speeds are unchanged.

## GENERAL FEATURES

- ✓ Single button startup and shutdown
- ✓ Simple menu-driven WYSIWYG message creation and editing
- ✓ SureFill™ mistake-proof refill system and on-screen fluid level indicators
- ✓ Integral QWERTY keyboard (full size) and 1/4 VGA back-lit colour display, printer status indicators (4 LEDs)
- ✓ USB port for copy and back up of message and printer settings
- ✓ FullFlush™ automatic printhead and conduit flush
- ✓ Auto power-off
- ✓ Automatic diagnostics
- ✓ Multiple operator languages (user selectable)
- ✓ Dynamically adjusted service interval (not available with Spectrum, FG)
- ✓ Password-protected functions
- ✓ Dynamic message and logo storage capacity

## PROGRAMMING AND PRINTING FACILITIES

- ✓ Fixed and variable text
- ✓ Upper and lower case characters
- ✓ Graphics/logo printing
- ✓ Logo creation and editing, on-screen
- ✓ QuickSwitch™ message selection and editing using barcode scanner
- ✓ Barcodes EAN 8, EAN 13, 2 of 5, ITF, Code 39, Code 128, UPC-A
- ✓ Data Matrix 2D codes
- ✓ Bold factor (up to 10 times)
- ✓ Height, width and delay functions for easy code sizing and positioning
- ✓ Standard and user-definable formats for shift coding
- ✓ 7300FG: Egg coder configuration matches service interval to flock life, and provides reliable operation in barn environments
- ✓ 7300 Spectrum: Inverse Image barcodes and text e.g. white on black
- ✓ Programmable pre-set ink mix times
- ✓ Remote communications interface
- ✓ Real-time clock functions
- ✓ Automatic date forward function
- ✓ Batch coding and counting
- ✓ Sequential numbering and messages
- ✓ Dynamic reverse and invert printing for traversing lines
- ✓ Rotated character ("tower") printing
- ✓ Message creation/editing whilst printing
- ✓ Timed-message function
- ✓ Flexible print trigger options
- ✓ LogoJet PC-based message and logo creation software
- ✓ 7300 Swift: narrow fonts for coding onto small print areas
- ✓ 7300 Spectrum: programmable pre-set ink mix times

## PRINTHEADS

- ✓ 2m conduit
- \* 4m conduit (not available with Solver or FG printers)
- \* 90° printhead configuration
- \* Positive air purge to printhead
- \* Cutaway printhead cover tube
- \* Magnetic shielded cover tube
- \* Midi Short Reach Right Angled (SRRA) printhead (for 7300, Solver), length 130mm

## INK RANGE

	Linx 7300	Linx 7300 Spectrum	Linx 7300 Solver	Linx 7300 Swift	Linx 7300BC	Linx 7300FG
Linx MEK base (dye-based/ soft pigmented)	✓	✓ (soft pigmented)	✓	✓ (1240, 1405)	✓ (1058)	
Linx mixed base	✓		✓			
Linx ethanol base	✓					
Linx MEK base High Opacity pigmented inks		✓				
Linx Food Grade inks						✓

## CONNECTIONS/INTERFACING FOR:

- ✓ Shaft encoder
- ✓ Primary and secondary product detectors
- ✓ External single stage alarm output
- ✓ USB
- ✓ RS232
- \* External multi-stage alarm output
- \* Ethernet
- \* Parallel I/O
- \* Multiple printer triggering from single product detector/shaft encoder
- \* Volt-free contact alarm connection (e.g. for use with external mains-driven alarm)

## PHYSICAL CHARACTERISTICS

Base and enclosure	Stainless steel
IP55 environmental protection rating (EN 60529:1991/IEC60529:1989)	✓ (not available with 7300 Spectrum)
IP65 environmental protection rating (EN 60529:1991/IEC60529:1989)	* (standard for 7300 Spectrum, not available with 7300FG printers)
Mounting options	Bench or console
Operating temperature range	5 – 45°C (FG: 0 – 40°C)
Humidity range (r.h., non-condensing)	90% max
Power supply	100-230V, 50/60Hz
Power rating	200W
Weight	21kg (Spectrum and FG, 24kg)

## REGULATORY APPROVALS

TÜV/GS	✓
CE mark	✓
FCC	✓
C-Tick	✓

Key ✓ standard \* option on request



www.matthews.com.au  
email: info@matthews.com.au  
Telephone: 1300 CODING

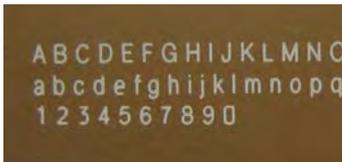


# Solaris e-SolarMark

The perfect steered-beam CO<sub>2</sub> laser coder for high quality, real-time coding.



\*Touch screen option above. Also available with alphanumeric keyboard or simple controller



### High Quality Marking

- The e-SolarMark provides excellent product traceability by delivering high quality, permanent and flexible marking of alphanumeric text, dates, serial numbers, barcodes, 2D codes and graphics.

### Extreme Performance

- Highly versatile, capable of marking a wide variety of substrates, including: paper, cardboard, foils, coated metals, plastics, wood, glass and many more.
- High performance marking on either moving or stationary products.
- Perfect for marking products at demanding line speeds.
- Large storage capacity, up to 3,000 (10KB average size) messages can be held in the memory.
- Internal software on real time operating system.
- Easy connection to any network.

### Easy Integration

- The e-SolarMark has an intuitive operating system which operates without a dedicated P.C.
- Online data exchange via network (LAN Ethernet) and serial (RS232)
- Flexible 90° bending modules allows for marking in any orientation.
- Compact design-fits easily into restricted production spaces.
- User friendly and simple to operate.
- A wide variety of options means the e-SolarMark can be customised to suit any application.
- Three levels of password protection provide exceptional security.
- Total package weighs 23kg (8kg control unit and 15kg marking head) making it easy to install and shift from line to line.

### Robustness and Low Cost of Ownership

- Nil consumable costs (no inks or solvents as typically required by other technologies).
- Low operation cost.
- No maintenance.
- Shock and temperature tested.

### \*The e-SolarMark YAG laser

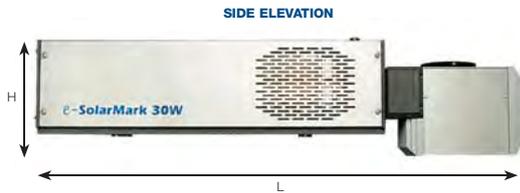
is available for special applications including high contrast permanent codes and images on difficult to mark materials such as metals and plastics.



## Appendix D: Matthews Intelligent Identification

# Laser Marking

### Dimensions (mm)



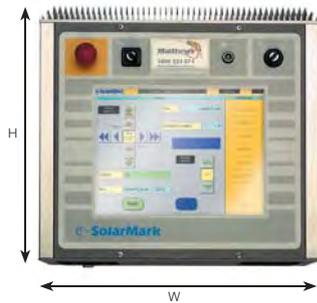
Marking Head	L	H	D
5W	635	150	150
10W	826	150	150
30W	766	150	150
55W	849	133	133

\*Including clearance

### BACK ELEVATION



### FRONT ELEVATION



### SIDE ELEVATION



### BOTTOM ELEVATION



Invisible laser Radiation  
Avoid Skin or eye exposure to  
direct or scattered radiation.

CO<sub>2</sub> laser  
10,600 nm,  
150 W Max  
Class IV  
Laser Product



Controllers	W	H	D
Touch Screen	355	327	183
Alphanumeric Keyboard controller	350	327	150
Simple Controller	350	327	150
HD Controll cabinet	500	500	210

**Matthews**  
INTELLIGENT IDENTIFICATION



www.matthews.com.au  
email: info@matthews.com.au  
Telephone: **1800 333 074**

### PERFORMANCE

Laser type	Sealed CO <sub>2</sub> laser (tube life average 30,000hr)
Laser power	5w, 10w, 30w, *55w
Marking speed	1000 characters/sec
Marking on the fly & stationary	Character height 2mm, lens and Material Dependant

### GENERAL FEATURES

	Touch screen*	Control units Alphanumeric keyboard controller*	Simple controller*
Integral keypad	✓	✓	
High Brightness back lit LCD	✓	✓	✓
Choice of operator languages	✓	✓	✓
3 levels of password protection	✓	✓	✓
WYSIWYG message display	✓		

### PROGRAMMING & PRINTING FACILITIES

Bar codes	✓
2D codes	✓
Logos	✓
Graphics	✓
Vertical / horizontal & circular printing	✓
Upper and lower case characters	✓
Sequential numbering	✓
Shift codes	✓
Batch coding & counting	✓
Automatic date & time forward function	✓
Variable date formats	✓
Shot count	✓

### CONNECTIONS/INTERFACING

Shaft encoder	✓
Product detector	✓
Alarm outputs	✓
RS232	✓
Ethernet	✓
Wireless IrDA	✓
Remote stop start	✓
System interlocks	✓
Voltage free alarm connection	✓

### PHYSICAL CHARACTERISTICS

Environmental protection rating	IP 52 *IP65
Wall mounting	✓
Air cooled	✓
Operating temperature	5-45°C
Humidity range (relative humidity, non condensing)	10-95%*
Weight: control unit/marketing head	8kg/15kg
Electrical requirements	240V, 50Hz, 1pH

### SAFETY

Emission indicators	✓
Master key control	✓
Safety shutter	✓
Safety shutdown	✓
Interlock out puts	✓

### OPTIONS

Scanning head extension modules	*
Beam bending modules	*
Mounting stands	*
Guarding to comply with AS/NZ 2211	*
Conduit length to 15m	*
Dust & fume extraction	*
Product detector	*
Encoder	*
Customised software on request	*
Water chiller	*
Increment decrement shot count (batch count)	*

### REGULATORY APPROVALS

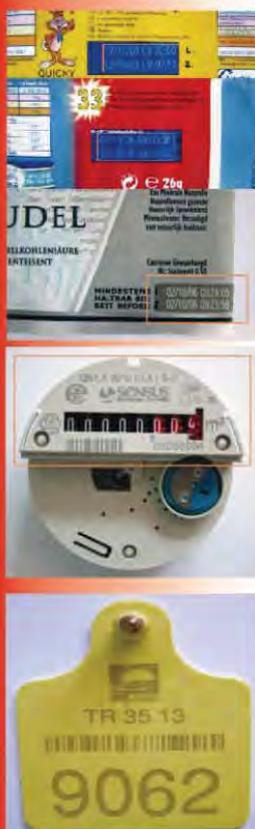
CE	✓
CDRH	✓

### MARKING SPECS

Lens Type	LF2	LF3	LF4	LF5	LF8
Marking field (mm)	50 x 50	80 x 80	100 x 100	120 x 120	200 x 200
Minimum line width (mm)	0.10	0.15	0.18	0.21	0.35
Resolution (mm)	0.012	0.019	0.024	0.029	0.048
Working Distance (mm)	104	127	183	213	389

Key	✓ standard	* option on request
-----	------------	---------------------

**Foils and plastics**



**Metals**



# e-SolarMark FL

## Laser Marking/Coding System on foils, plastics and metals



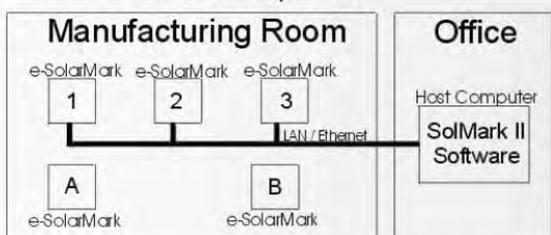
100 000  
Maintenance free  
Working hours \*

- \* No consumables: typical laser life time 100 000 working hours
- \* Minimal costs of operation: integrated air-cooling, 1-ph power supply, low power consumption

- Revolutionary solution for permanent coding on packaging foils, various plastic / metal products and packages
- Vector-quality code in stationary and "On the Fly" marking / coding
- Coding of alphanumerical texts / dates / timers, serial numbers, barcodes, 2D codes and graphics
- Compact and modular design, high integration flexibility due to number of options

- Internal software on real-time operating system
- Local / Remote job choice / modification / creation
- Unauthorized access protection
- Easy connection to the network
- Build-in touch screen panel for local job edition (option)
- On-line data exchange via: network (LAN/Ethernet) serial (RS232) and USB

Network (1, 2, 3 ...) and Autonomic (A, B, ...) mode of operation



- Different languages versions: English, Chinese, French, German, Spanish, Italian, Dutch, Polish, Swedish and Portugese
- System available as OEM version

21 CFR Part 11  
compliant



# e-SolarMark FL

**Laser Marking/Coding System on foils, plastics and metals**

<b>Technical Specifications</b>		
<b>Laser:</b>	20W	
<b>Wavelength:</b>	1062nm	
<b>Life time:</b>	100 000 working hours average	
<b>Operating Mode:</b>	Q-switched, Programmable Pulse Frequency	
<b>Electrical requirements:</b>	230V 50Hz / 115V 60Hz, 1PH	
<b>Power consumption:</b>	400W	
<b>Cooling:</b>	Air, integrated	
<b>Ambient temperature:</b>	5-40°C (40-105°F); Suggested 20-25°C (68-77°F)	
<b>Enclosure Type::</b>	IP 52 / NEMA 12	
<b>Dimensions</b>	<b>Control Unit</b>	<b>Marking Unit</b>
H x W x D mm	185x420x380	122x108x495
H x W x D in.	7.3x16.5x15.0	4.8x4.2x19.5
<b>Weight</b>	15 kg (33 lb.)	5 kg (11 lb.)

### Communication

- USB / RS232 / Ethernet 10 Base T
- Shaft encoder input (recommended encoder resolution: 8196 pulses per marking filed length)
- Product detector input: NPN / PNP - 24V Sensor
- Input / Output connector for: System interlocks, Remote Start / Stop, Ready, Marking, Fault signals
- SolMark II job edition software available for: Windows 9x, NT, 2000, ME, XP

### Marking Specification

Marking speed	<b>1600 characters/sec</b> Characters height 2mm, Lens and Material Dependent		
Lens type	F-Theta		
	<b>LF3</b>	<b>LF4</b>	<b>LF6</b>
Marking field (mm)	70x70	100x100	150x150

### OPTIONAL CONFIGURATION:

- Red laser pointer for mark position preview
- System setting for printing on highly sensitive plastic materials (e.g. foils)
- Touch Screen GUI Control Unit interface for local job creation and modification
- Alphanumeric Keyboard Control Unit interface for local job modification

### OPTIONAL EQUIPMENT:

- Fumes / Dust Extractor (with Active Carbon filter)
- Product Detector and Shaft Encoder

Specifications are subject to change without notice as products are continually improved

**CE and CDRH** compliant



Matthews Australasia Pty Ltd  
 35 Laser Drive, Rowville, VIC 3178  
 Tel: +61 3 9763 0533 Fax: +61 3 9763 2020  
 Free Call: 1800 333 074  
[www.matthews.com.au](http://www.matthews.com.au)  
 e: sales@matthews.com.au



Appendix E: Prinzen





## Prinzen Egg Coding Ovoprint A5 / A7

The PRINZEN Ovoprint inkjet egg printer is available for all packers from the PSPC range for traceability applications incl. date functions or commercial coding. Using proven inkjet technology, the Ovoprint offers high quality, low cost egg coding. The print head adapts itself to each individual egg height, which results in constant coding, day after day.



### **Ideal egg printer for egg producers**

- Minimum consumptions costs
- Approved food grade ink in different colours
- Easy input text & data
- Simple operation
- Printsize: 4,2mm height
- Egg counter
- Single or double size printing

### **Better results**

- High quality print due to height adjustable print heads

### **Durable and low maintenance**

- Reliable inkjet technology
- Durable materials
- Self maintenance: Easy switch of cartridge



Phone +31 (0) 543-490060  
[www.prinzen.com](http://www.prinzen.com)



## Prinzen Egg Coding

Egg Flex 5R / 7R

Available for traceability applications or commercial codes, Prinzen offers the Egg Flex stamper. The Egg Flex egg coder is available in R5 and R7 models to suit the Prinzen 5 and 7 row PSCP packers. This Egg Flex stamper is an effective method for coding each individual egg at a low cost. The quality of the code leaves nothing to be desired: simply perfect!



### Ideal egg coder for egg producers

- Minimum consumptions costs
- Approved food grade ink in several colours
- Fixed print texts (numbers, text and/or logo's)
- Mechanical operation
- Printsize: 3 lines with 17 characters Ø 17mm

### Better results

- Thanks to flexible rubber head high quality egg coding

### Durable and low maintenance

- Proven egg stamp technology
- Self maintenance: Easy switch of rubber head



Phone +31 (0) 543-490060  
[www.prinzen.com](http://www.prinzen.com)

Your local dealer:

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## Appendix F: Advanced Industrial Micro Systems

### Egg jet printers

Advanced Industrial Micro Systems (AIMS) presents HONAZ / SORVEH (Canada, Dubai) egg jet printer Model EJP-P2128 which is an economical, no maintenance, user friendly, high resolution four line non-contact multi-head printer specially designed to print on one to five rows of egg trays simultaneously (or on five to six tracks in a blister packing machine Model MJP-P2128).

The system comes complete with conveyor to feed egg trays and can easily be integrated with existing production lines and can print Company name, Logo, Pro. Dt., Exp. Dt., B. No., etc.

It has a capacity of printing approx. 22,000 eggs / hour. These coders are ideal for on-line high speed coding on egg trays moving on conveyor (or on multi-track blister packing machines).

The message to be printed is very easily composed on its graphic display using the integrated complete QWERTY keyboard. The message can be up to four lines with a combination of small, medium or large characters from 1 to 17 mm in height along with logos.

Coder model	EJP-P2128
Supply voltage	230 Vac $\pm$ 10%, 150 VA
Operating range	5 to 45°C, 10 – 90% RH non-condensing
Printing area	4 lines of 120 characters each from 1 to 17 mm high
Printing speed	Max. 50 metres / min. for 1 to 4 line printing
Prints using	Piezo-electric print head for spraying ink
Inking medium	Disposable pre-mix ink in 200 ml cartridge
Printing medium	Water based inks (red, blue, etc.)
Impressions	Approx. 90 million characters of 2 mm per litre of ink
Dimensions	20x30x36 cm and 200x40x63 cm with stand
Weight	15 kgs for machine and 50 kgs with conveyor



## Appendix F: Advanced Industrial Micro Systems

No.	DESCRIPTION	PRICE
1a.	Industrial On-Line Egg Jet Printer Model EJP-P2128, which is an economical, no maintenance, user friendly, high resolution, four line non-contact multi-head printer specially designed to print on one to five rows of egg trays simultaneously. The system comes complete with conveyor system to feed egg trays and can easily be integrated with existing production lines and it can print Company name, Logo, Pro. Dt., Exp. Dt., B. No., etc. It has a capacity of approx. 22,000 eggs / hour.	US\$ 9,500.00
	The system is inclusive of everything needed for immediate production startup: a. Stainless steel machine stand with print head stand. b. Product detector with mounting bracket. c. 1 No. disposable pre-mix ink cartridge, 1 no. cleaning spray. d. Operator tool kit, operation and maintenance manual, operation video.	
	This printer does not have any air pump, viscosity control unit, filters, etc. and so there is no maintenance required. It does not require separate make up or wash solution as everything is included in the disposable ink cartridges making it very user friendly. The running cost is only about 14,000 impressions per US dollar.	
1b.	Optional accessories (consumables for subsequent use): a. Pre mix ink packs of 200 ml disposable cartridges (solvent/oil based) b. Cleaning spray (to be sprayed on print-head at startup and shutdown)	US\$50.00 US\$16.00
1c.	Continuous flat belt conveyor Model FBC with polyurethane coated fibre based conveyor belt size 200 mm width by 1.5 metres long. Stand alone powder coated steel type machine model with 900 mm height. The system has a fixed speed setting of approx. 13 metres per minute.	US\$850.00

	IJP-P2128 ink-jet printer	Other ink-jet printers available	Advantages of our ink-jet printer
a.	No mechanical parts	Air pump, viscosity control unit, etc.	Mechanical parts wear out and fail in time
b.	No filters for ink	Filter has to be changed regularly	Very high replacement filter cost saved
c.	Zero maintenance cost	Very high maintenance cost	Huge cost saving every year
d.	Push fit pre-mix disposable ink cartridge	Separate ink, make-up and solvent bottles	Ease of use for the operator
e.	Simple ethyl alcohol based inks	Methanol (M.E.K.) based inks	MEK is highly toxic for humans
f.	300 dpi high resolution printing	Very low resolution dot-dot type printing	Logos and barcodes can be printed perfectly
g.	Instantaneous startup and shutdown	Long procedure for startup and shutdown	No time is wasted for production
h.	90+ million characters per litre of ink	45 million characters per litre of ink	Very low running cost of printer

We expect that the above details meet your requirements and hope to receive your purchase order at the earliest.

### TERMS AND CONDITIONS:

- 1) PRICES : Ex-works, Dubai. Packaging and forwarding will be extra as applicable.
- 2) DELIVERY : Three to six weeks after receipt of confirmed purchase order with 100% advance payment.
- 3) PAYMENT : 100% advance payment through bank (Telex Transfer T/T).
- 4) WARRANTY : One year from date of delivery against manufacturing defects.
- 5) ON SITE : For demonstrations, installations and on-site maintenance outside of Mumbai, the customer will have to honour all travelling and lodging expenses plus a charge of US \$50 per day (including the day of travel).

## Appendix F: Advanced Industrial Micro Systems

<b>BATCH CODING, MARKING &amp; PACKAGING SYSTEMS</b>	 <b>ADVANCED INDUSTRIAL MICRO SYSTEMS</b>																							
<ul style="list-style-type: none"> <li>• Home Page (Exhibitions / News)</li> <li>• Introduction / Customers / Profile</li> <li>• Product Selection</li> <li>• Product Show Room</li> <li>• Ink Jet Printers                             <ul style="list-style-type: none"> <li>• Industrial On-Line Ink-Jet Printer (IJP)</li> <li>• Industrial Multi-Head Egg Jet Printer (EJP)</li> <li>• Industrial Multi-Head On Line Printer (MJP)</li> <li>• Wide Format Banner Printer (WFP)</li> </ul> </li> <li>• Off Line Coding Machines                             <ul style="list-style-type: none"> <li>• Table Top Electro Mechanical Coder (EMC)</li> <li>• Table Top Electro Pneumatic Coder (EPC)</li> <li>• Labels / Pouches / Cartons Stacking Auto Feeding High Speed Coder (SLC / SCC)</li> <li>• Table Top Hot Foil Coder (HFC)</li> <li>• Stacking Table Top Coder (TTC)</li> <li>• Motorized Pad Printing Machine (PPM)</li> </ul> </li> <li>• Manual Coding Machines                             <ul style="list-style-type: none"> <li>• Hand Held Coder for Cartons (HHC)</li> <li>• Hand Stamping System for Pouches (HSS)</li> <li>• Manual Hot Foil Coder (HFC)</li> <li>• Manual Pad Printing Machine (PPM)</li> </ul> </li> <li>• On Line Coding Machines                             <ul style="list-style-type: none"> <li>• On-Line Coder for Packaging Machines (BCC)</li> <li>• Hot-Roll Rotary Coder (Like Markem) (HRC)</li> <li>• Electro Pneumatic On-Line Coder (EPC)</li> <li>• On-Line Motorized Coder (EMC)</li> <li>• On-Line Hot Foil Coder (HFC)</li> <li>• On-Line Continuous Friction Coder (FDC)</li> <li>• Auto Carton Coder for Taping Mc (ACC)</li> <li>• On-Line Pipe Coder (PPC)</li> </ul> </li> <li>• Label Printers / Applicators                             <ul style="list-style-type: none"> <li>• Bar Code Printer (BCP)</li> <li>• Label Dispenser / Applicator (PLD)</li> <li>• Label Roll Printing Machine (LPM)</li> <li>• Semi-Automatic Bottle Labeling M/C (BLM)</li> </ul> </li> <li>• Conveying Systems                             <ul style="list-style-type: none"> <li>• Unwinding / Rewinding Machine (WRM)</li> <li>• Flat Belt Conveyor Systems (FBC)</li> </ul> </li> <li>• Packing Machine                             <ul style="list-style-type: none"> <li>• Semi Automatic Box Strapping M/c (CSM)</li> <li>• Carton Sealing / Taping Machine (CTM)</li> <li>• Tray Wrapping Machine (TWM)</li> <li>• Paper Folding Machine (PFM)</li> </ul> </li> <li>• Band Sealing Machine                             <ul style="list-style-type: none"> <li>• Automatic Band Sealer Machines (BSM)</li> <li>• Iron / Aluminium Film Sealers (AFS)</li> <li>• Pedal Heat Sealer (DPS)</li> </ul> </li> <li>• Shrink Packing Machine                             <ul style="list-style-type: none"> <li>• 2 in 1 Shrink Packing Machine (SPM)</li> <li>• L-Sealer with Shrink Tunnel (LST)</li> <li>• Manual Shrink Packager (IBS)</li> </ul> </li> <li>• Vacuum Packing Machine                             <ul style="list-style-type: none"> <li>• Vacuum Packaging Machine (VPM)</li> <li>• Double Chamber Vacuum Packager (DVP)</li> <li>• Mini Vacuum Sealer (MVS)</li> </ul> </li> <li>• Lidding / Capping Machine                             <ul style="list-style-type: none"> <li>• Cup Sealer Packaging Machine (CPM)</li> <li>• Induction Sealing Machine (ISM)</li> <li>• Heat Sealing Machine (HSM)</li> <li>• Cap Locking &amp; Capping Machine (LCM)</li> </ul> </li> <li>• Consumables &amp; Accessories</li> <li>• Coding Applications</li> <li>• PLC &amp; Automation for Packaging M/c</li> <li>• Enquiry Form / Contact Us</li> </ul>	 <p><b>SCROLLING HEADER</b></p>	<p><b>ON-LINE MULTI-HEAD EGG JET PRINTER - MODEL EJP</b></p>																						
		<p>AIMS presents <b>HONAZ / SORVEH</b> (Canada, Dubai) make Industrial EGGJET Printer <b>Model EJP-P2128</b> which is an economical, <u>no maintenance</u>, user friendly, high resolution <b>FOUR line</b> Non-Contact multi-head printer specially designed to print on 1 to 5 rows of egg trays simultaneously (or on 5 to 6 tracks in a blister packing machine <b>Model MJP-P2128</b>). The system comes complete with conveyor to feed egg trays &amp; can easily be integrated with existing production lines &amp; can print Company Name, Logo, Pro. Dt., Exp. Dt., B. No., etc. It has a capacity of printing approx. 22,000 eggs / hour.</p> <p><b>INTRODUCTION:</b></p> <p>These coders are ideal for <b>On-Line High Speed Coding</b> on egg trays moving on conveyor (or on multi-track blister packing machines).</p> <p>The message to be printed is very easily composed on its graphic display using the integrated complete <b>QWERTY keyboard</b>. The message can be upto 4 lines with a combination of small, medium or large characters from 1 mm to 17 mm in height along with LOGOs.</p> <p>The Inking system consists of a simple <b>disposable pre-mix ink cartridge</b> using food grade porous or fast drying &amp; indelible solvent-based inks (for porous and non-porous surfaces) which is just push fitted into its slot &amp; immediately you can start printing.</p> <p>The height of the print heads is then adjusted according to the height of the eggs in the trays &amp; when the tray travels on the conveyor, the whole message is spray-printed onto all the eggs at high speed while it is in motion without touching it.</p>																						
		<p><b>FEATURES:</b></p> <ul style="list-style-type: none"> <li>• Stainless steel rugged construction. All machine stands, product sensor with stand, print head stand included with the system. The print module is well protected &amp; insulated in the Stainless steel tubular print head.</li> <li>• Graphic 128 X 64 backlit liquid crystal display &amp; integrated QWERTY keyboard with Real time clock and calendar, expiry date, Bar Codes, LOGOs, serial nos. (counter) &amp; storage of 9 messages of 4 lines each of 120 characters per line with facility for password lock.</li> <li>• Push fit disposable solvent / water based pre-mix ink cartridge for ease of use. Uses simple inks that do not require any mixing or viscosity adjustments whereas other printers use Methanol (M.E.K.) based highly toxic to humans &amp; difficult to use inks.</li> </ul>																						
	<p><b>SPECIFICATIONS:</b></p> <table border="0"> <tr> <td>Coder Model</td> <td><b>EJP - P2128</b></td> </tr> <tr> <td>Supply Voltage</td> <td>230 Vac ± 10%, 150 VA</td> </tr> <tr> <td>Operating Range</td> <td>5 to 45 deg. C, 10 - 90% RH non-condensing.</td> </tr> <tr> <td>Printing Area</td> <td>4 lines of 120 char each from 1 to 17 mm high.</td> </tr> <tr> <td>Printing Speed</td> <td>Max. 50 Meters / min. for 1 to 4 line printing.</td> </tr> <tr> <td>Prints using</td> <td>Piezo-electric print head for spraying ink.</td> </tr> <tr> <td>Inking Medium</td> <td>Disposable pre-mix ink in 200 ml. cartridge</td> </tr> <tr> <td>Printing Medium</td> <td>Water based inks (Red, Blue, etc.)</td> </tr> <tr> <td>Impressions</td> <td>Appx. 90 million char. of 2 mm per lit. of ink.</td> </tr> <tr> <td>Dimensions</td> <td>20X30X36 cm &amp; 200X40X63 cm with stand.</td> </tr> <tr> <td>Weight</td> <td>15 Kgs for machine &amp; 50 Kgs with conveyor.</td> </tr> </table>	Coder Model	<b>EJP - P2128</b>	Supply Voltage	230 Vac ± 10%, 150 VA	Operating Range	5 to 45 deg. C, 10 - 90% RH non-condensing.	Printing Area	4 lines of 120 char each from 1 to 17 mm high.	Printing Speed	Max. 50 Meters / min. for 1 to 4 line printing.	Prints using	Piezo-electric print head for spraying ink.	Inking Medium	Disposable pre-mix ink in 200 ml. cartridge	Printing Medium	Water based inks (Red, Blue, etc.)	Impressions	Appx. 90 million char. of 2 mm per lit. of ink.	Dimensions	20X30X36 cm & 200X40X63 cm with stand.	Weight	15 Kgs for machine & 50 Kgs with conveyor.	<ul style="list-style-type: none"> <li>• Latest technology high speed 128 nozzle, 17 mm <b>XAAR</b> piezo-jet print head which is very high resolution &amp; gives very high quality of print.</li> <li>• Instant startup within 1 minute for the first print &amp; instant shutdown within 1 minute with print head cleaning. Other printers require upto 30 minutes for each of the procedures &amp; require a trained engineer.</li> <li>• <b>No air compressor, pumps, viscosity control units or mechanical parts, hence lower running cost &amp; more reliability. Maintenance free compared to other printers, which have a lot of moving parts &amp; filters, which can fail &amp; need to be replaced.</b> If there is a power failure, most printers require a major over haul by a trained engineer whereas this printer just starts printing as if nothing has happened.</li> <li>• The system is PC linkable via the COM (RS-232) port. The windows based <b>FLEXICODE</b> software allows for the control of the print layout and design and for downloading of LOGOs, Bar Codes, data, etc.</li> </ul>
Coder Model	<b>EJP - P2128</b>																							
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	<p><b>201, Triumph Industrial Estate, Behind Patel Extrusion (Itt Bhatti), Opp. Hyundai Mark Motors, Goregaon (E), Mumbai - 400 063, INDIA.</b>  <b>Ph: (022) 28766351, 28756353. Fax: (+91) - 22 - 28766352.</b>  <b>Website: <a href="http://www.coding-india.com">www.coding-india.com</a>, <a href="http://www.indiamart.com/aims">www.indiamart.com/aims</a></b>  <b>Email: <a href="mailto:samir_garg@vsnl.com">samir_garg@vsnl.com</a>, <a href="mailto:info@coding-india.com">info@coding-india.com</a></b></p>																							

# Appendix G: Nuovo Printing Systems



**Nuovo** Your competent egg marking specialist!

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**Nuovo egg printing systems manufactures printing systems for the marking and coding of eggs. This is done by ink jet egg printing or egg stamping. Nuovo egg printing systems delivers stand alone egg printers and egg stampers but also delivers egg printers and egg stampers for installation on farmpackers or grader.**

**Nuovo egg printing systems is active since 1992 in the poultry industrie / egg industrie and has proven to be a reliable partner for all your egg printing / egg marking / egg coding and egg stamping solutions.**

**Serie: Egg-Jet**  
Machines for egg marking with ink cartridges



Egg printing devices for printing of eggs on 30er egg trays or different kinds of small packs. (Standalone or Farmpacker)

As well as on the weighing transport or infeedlane of all graders.

The use of Logos, automatic date and counting functions are standard. All devices are equipped with 6 to 8 printed texts, which can be changed by the user over a PC/laptop.

**Serie: Easy-Print**  
Machines for egg marking with stamp rubbers



Egg stamp devices for marking the eggs with a producer number and/or a Logos, for which no sequential date is necessary. (Standalone, Farmpacker or Grader)



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**Serie: Easy-Print**  
Machines for egg marking

Handstamp
Standalone units
For assembly on farmpackers
Consumables
Print example

**Handstamp R1**




- Manual egg stamp
- Fixed imprint
- Imprint size 15 mm by 15 mm
- Stamping pads exchangeable
- Ink reservoir refillable

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EGG STAMPING

## Appendix G: Nuovo Printing Systems



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**Serie: Egg-Jet**  
Machines for egg marking

Standalone units	<div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p><b>Egg-Jet Piccolo</b> Small printing system, manual model</p> <p><b>Capacity: up to 4'000 Eggs per hour</b></p> <p>Manual operation with one print head Prints 1 up to 4 lines</p> <p>Movie: <a href="#">Egg-Jet Piccolo</a></p> </div> <div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p><b>Egg-Jet BAN1</b> Stand alone egg printing system</p> <p><b>Capacity: 8'000 Eggs per hour</b></p> <p>Automatic stand alone printing system using one print head Prints 1 up to 4 lines</p> <p>Optional: <a href="#">Buffer roller belt 3 or 6 trays</a>, <a href="#">Mobile frame (stainless steel)</a></p> <p>Movie: <a href="#">Egg-Jet BAN1</a></p> </div> <div style="padding-bottom: 10px;"> <p><b>Egg-Jet BANS</b> High capacity egg printing system</p> <p><b>Capacity: 24'000 Eggs per hour</b></p> <p>Automatic standalone printing system using 5 print heads Prints 1 or 2 lines</p> <p>Optional: <a href="#">Buffer roller belt 3 or 6 trays</a>, <a href="#">Mobile frame (stainless steel)</a></p> <p>Movie: <a href="#">Egg-Jet BANS</a></p> </div>
For assembly on farmpackers	
For assembly on graders	
Consumables	
Programming	
Print examples	



[more...](#)



[more...](#)



[more...](#)



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**Serie: Egg-Jet**  
Machines for egg marking

Standalone units	<div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p><b>Egg-Jet Sprinter R1</b> Installation on Mopack 55/70</p> <p><b>Egg-Jet Sprinter R1+</b> Installation on Mopack 85/100</p> <p><b>Capacity: up to 36'000 Eggs per hour</b></p> <p>1 pce. Printhead</p> <p>Pictures: <a href="#">Examples</a></p> <p>Optional: <a href="#">Egg counter</a></p> <p>Movie: <a href="#">Egg-Jet Sprinter R1</a></p> </div> <div style="padding-bottom: 10px;"> <p><b>Egg-Jet Sprinter R6</b> Installation on take away conveyor or in feed conveyor of tray stacker (Staalkat, Diamond, Prinzen and so on)</p> <p>5 or 6 pce. Printheads</p> <p><b>Capacity: up to 36'000 Eggs per hour</b></p> <p>Pictures: <a href="#">Examples</a></p> <p>Movie: <a href="#">Egg-Jet Sprinter R6</a></p> </div>
For assembly on farmpackers	
For assembly on graders	
Consumables	
Programming	
Print examples	



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## Appendix G: Nuovo Printing Systems



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**Serie: Egg-Jet**  
Machines for egg marking

Standalone units
For assembly on farmpackers
For assembly on graders
Consumables
Programming
Print examples

**Egg-Jet SOR Installation on weighing transport**

Installation on for example:  
Moba (Mobanette, Moba68/88),  
Staalkat (Micro- Intercompacta),  
Benhil

**Capacity: same as grading machine**

1 or 2 pce. Printhead

Pictures: [Examples](#)  
Optional: [Egg counter](#)  
Movie: [Egg-Jet SOR2 M68](#)  
Movie: [Egg-Jet SOR1 Mobanette](#)



more...

**Egg-Jet SOR Installation on in feed rollers**

Installation on for example:  
Moba (9A, 2000),  
Staalkat (Ultracompacta, ECM)

1 to 12 pce. Printheads

**Capacity: same as grading machine**

Pictures: [Examples](#)



more...



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**Serie: Egg-Jet**  
Machines for egg marking

Standalone units
For assembly on farmpackers
For assembly on graders
Consumables
Programming
Print examples

**Consumables**

Cartridge Nuovo 40ml

**Certified food saved Egg ink**

Colors: red, green, blue, black

Option: Also washable, not washable and cook-firm Egg ink available

Movie: [Inserting the cartridge](#)

[Special Ink](#)



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EGG STAMPING

## Appendix G: Nuovo Printing Systems

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**Serie: Egg-Jet**  
Machines for egg marking

Standalone units
For assembly on farmpackers
For assembly on graders
Consumables
Programming
Print examples

**Programming**

On all our latest printer models the printed text can be modified by PC/Laptop using Microsoft Windows.




- Easy to upgrade, without modifications
- Simply programmable under Microsoft Windows 98/NT/2000/XP
- **Operation in english, german, french, dutch, italian and spanish**
- Set and change printing parameters
- Prepare text with various fonts, symbols, and logos
- Automatic date function
- Memory function same as PC

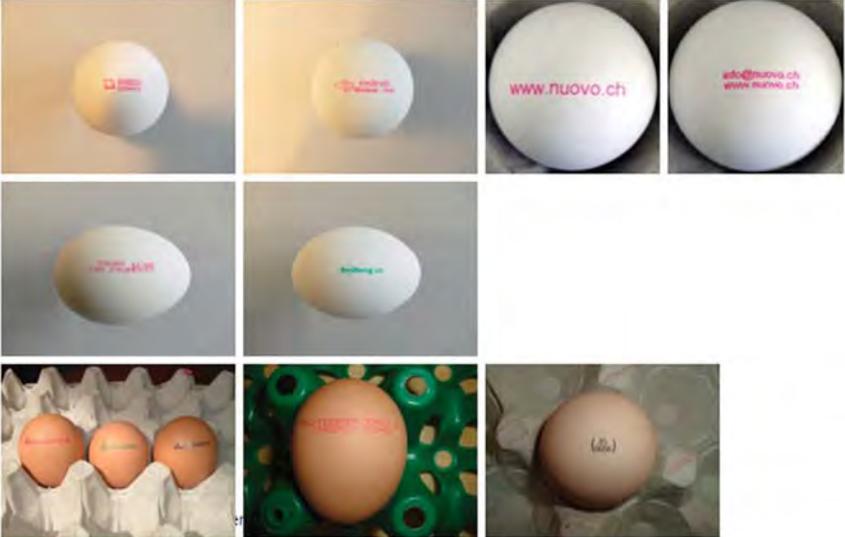
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**Serie: Egg-Jet**  
Machines for egg marking

Standalone units
For assembly on farmpackers
For assembly on graders
Consumables
Programming
Print examples

**Egg-Jet Print example**





*Nuovo printing, for better egg marketing!*

**OFFLINE SYSTEMS**



**INLINE ON GADERS**



**INLINE ON PACKERS**



# NUOVO 3 Technologies

*For each application the perfect system!*

**GENERAL REMARKS:**

- Already more then 10 years worldwide satisfied customers
- Robust and reliable systems
- Simple operation, simple programming
- Suitable for every packing method
- Proved, food grade ink, in various colours
- Minimal consumption costs
- No fixed service and maintenance costs

**OUR TECHNOLOGIES:**



**Egg Jet Serie**

- Ink Jet technology
- Application: traceability incl. date functions or commercial prints
- Printfield: height 4,2 mm / length 50 mm
- Printhead adapts it selves to each egg height
- Free selectable texts, fond styles and logos
- Several automatic date functions
- Programmable with Egg Jet Software (MS Windows)
- Quality: max. 300 dpi
- Print capacity: 36.000 Eggs/hr, per printhead (1.300mm/s)

**NEW!**



**Multi Jet Serie**

- Multi Ink Jet technology
- Application: extensive commercial prints combined with traceability
- Printfield: height 10 mm / length 50 mm
- Compact printhead adapts it selves to each egg height
- Free selectable texts, fond styles and logos
- Several automatic date functions
- Programmable with Multi Jet Software (MS Windows)
- Quality: > 1.000 dpi
- Print capacity: 36.000 Eggs/hr, per printhead (1.300mm/s)

**NEW!**



**Easy Print Serie**

- Egg Stamp technology
- Application: traceability or commercial prints
- Printfield: Height 15 mm / Length 15 mm
- Fixed print texts
- Ink pad simple changeable
- Refillable ink tank
- Print capacity: 36.000 Eggs/hr., with 6 heads

Switzerland  
 NUOVO AG - Barzloostr. 20 - CH-8330 Pfäffi kon ZH  
 Tel: +41 (0)1 950 05 20 - Fax: +41 (0)1 950 5733  
 www.nuovo.ch

The Netherlands  
 NUOVO BV - Dorpsstraat 84 - NL-5471 NA Loosbroek  
 Tel: +31 (0) 413 229 180 - Fax: +31 (0) 413 229 158  
 info@nuovo.ch



AUSTRALIAN EGG  
CORPORATION LIMITED



egg biz  
Performance  
Improvement  
Profitability

This booklet is supplied to all egg producers through investment of the laying chicken R&D levy. AECL also provides other tools and activities for egg producers including:

- Eggbiz (a business tool for improved efficiency in egg production) — [www.eggbiz.org](http://www.eggbiz.org)
- skills and knowledge development — [www.aecl.org/training](http://www.aecl.org/training)
- business development, extension and quality assurance services — [extension@aecl.org](mailto:extension@aecl.org)