Rotech

MARKING 25 YEARS OF EXCELLENCE

Rotech

Thermal Inkjet Guide

FOOD PHARMA MEDICAL COSMETICS INDUSTRIAL OTHER

MADE IN BRITAIN

THE CODE MARK OF EXCELLENCE

Thermalinkjet

Cost-effective, maintenance free product coding

Clean, maintenence-free and incredibly easy-to-use, thermal inkjet technology(TIJ) is an ideal replacement for thermal transfer (TT) and continuous inkjet (CIJ) for printing variable information, such as date codes, batch numbers and barcodes on to a wide variety of porous and non-porous substrates.

RELIABLE

- Works first time, every time
- No start-up time or shut down routine
- Consistently produces clear, high-resolution codes

EASY TO USE

- Direct data input available on printer
- Intuitive, free, format design software package
- Cartridges simply clip in and out

COST EFFECTIVE

- Low capital cost of equipment
- Ink cartridges are the only ongoing cost
- No maintenance

Other key benefits

- Compact design and easy to install
- Excellent print quality, (300dpi) allowing text down to 1.5mm –OCR camera friendly
- Wireless networking from standard software package
- Ability to print in different colours via a quick cartridge change
- No volatile ink/make up components
- No additional consumable costs
- Low waste (no ribbon cores/printheads/expended ribbon)
- Various interface options, including built in HMI, remote HMI, central control via PC/laptop, wireless or hard-wired networking

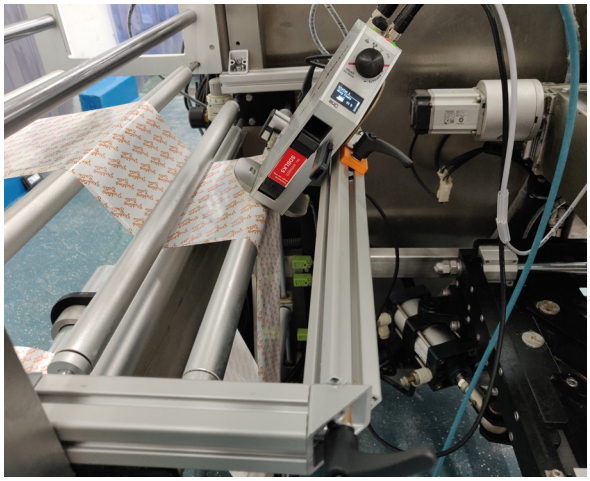
Printerintegration

Installing a thermal inkjet system requires far less space than a conventional thermal transfer printer, hot foil coder or continuous inkjet printer.

Due to the compact size and lower weight of thermal inkjet units, frame assemblies are less complex, smaller and lighter in weight, helping to further simplify the installation.

Use of an encoder allows measurement of the speed of the substrate passing under the printer, which in turn is calculated by the printer to reflect the rate at which the ink is transferred onto the surface of the material.

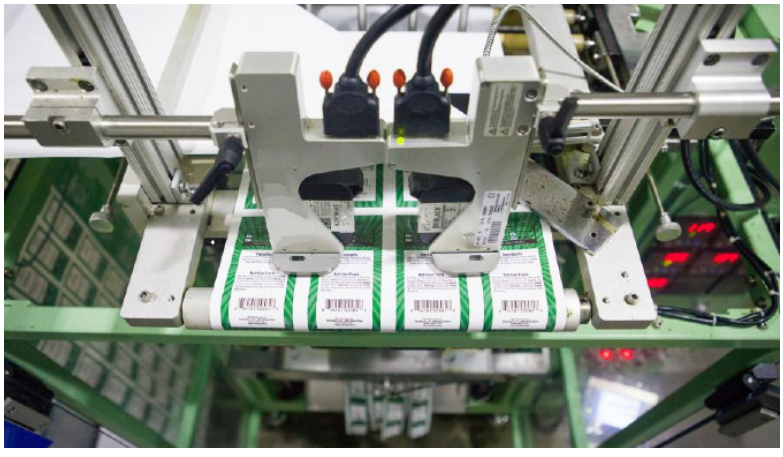
The print signal can be supplied direct from the parent machine or via an external photocell. Print position can be easily adjusted using the delay function built into the printer software.

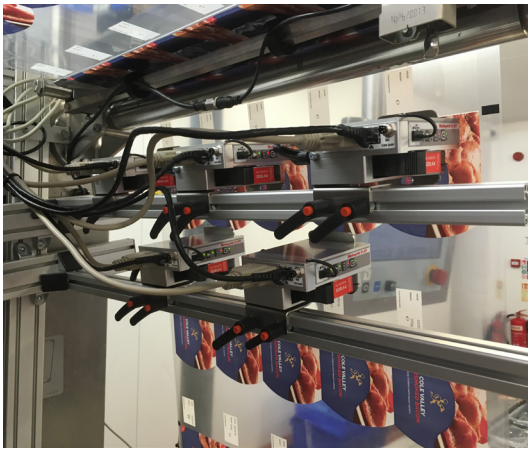


Our printers can easily be integrated onto the following:

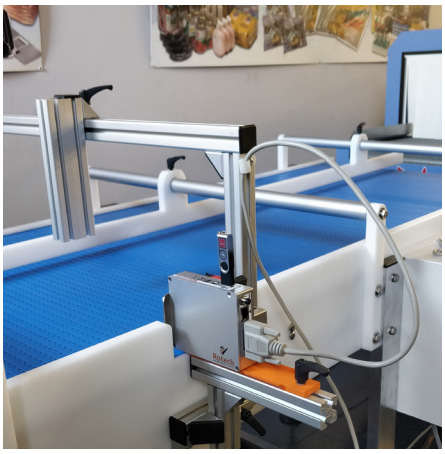
- Labellers
- Vertical form fill seal machines
- Thermoformers
- Horizontal form fill seal machines
- Flow-wrappers
- Cartoners
- Pouch sealing machines

"It's a simple, easy to use installation that requires no maintenance or servicing."



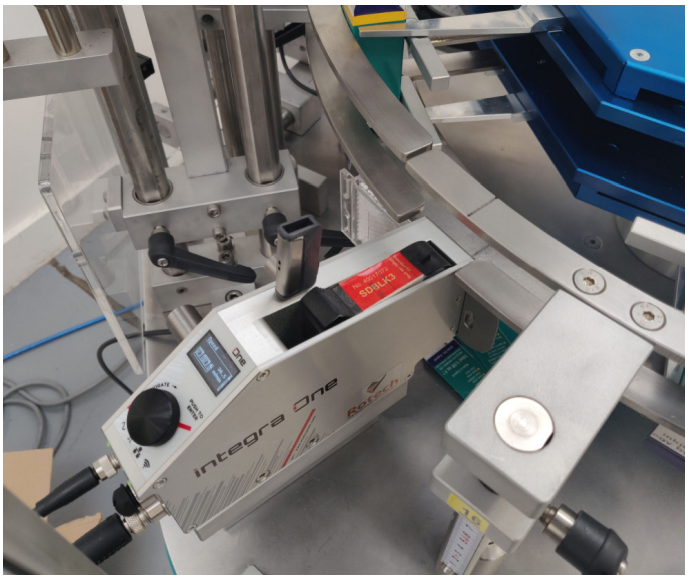


Printerintegration



X1Jet on conveyor

Integra on labelling line



Integra on rotary cartoner

X2Jet single head conveyor line

Integra on MR applicator

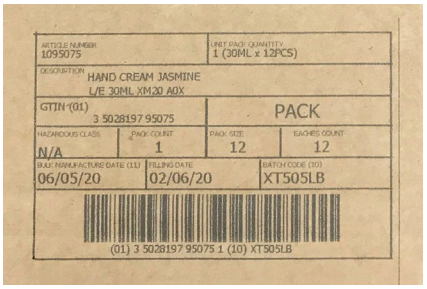
X2Jet bulk on sachet line

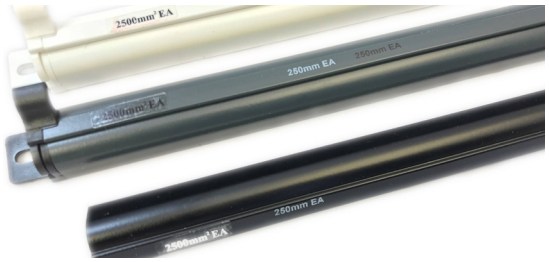
Integra with beacon on conveyor

Printsamples

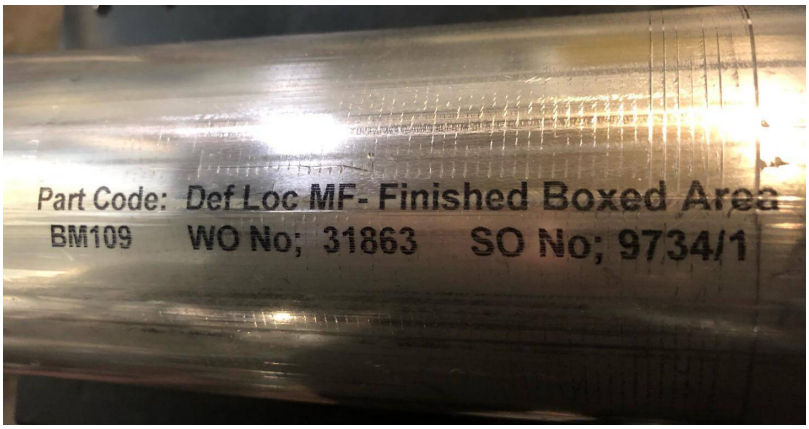
Top performance on any surface

Below you can see a just a small selection of the products and packaging that you can successfully print on to, using thermal inkjet technology.





Printsamples



The Proof is in the Print

There's no one-size-fits-all approach when it comes to coding products or packaging. Each application is unique and comes with it's own set of challenges and factors to put into consideration.

To ensure that we find the ideal solution, we offer a free print sample service. Simply send us some samples of product along with the coding requirements and we will run print tests here at our factory.

Alternatively, we can arrange for one of our sales engineers to visit and give you a free, on-site demonstration.

Ourservices

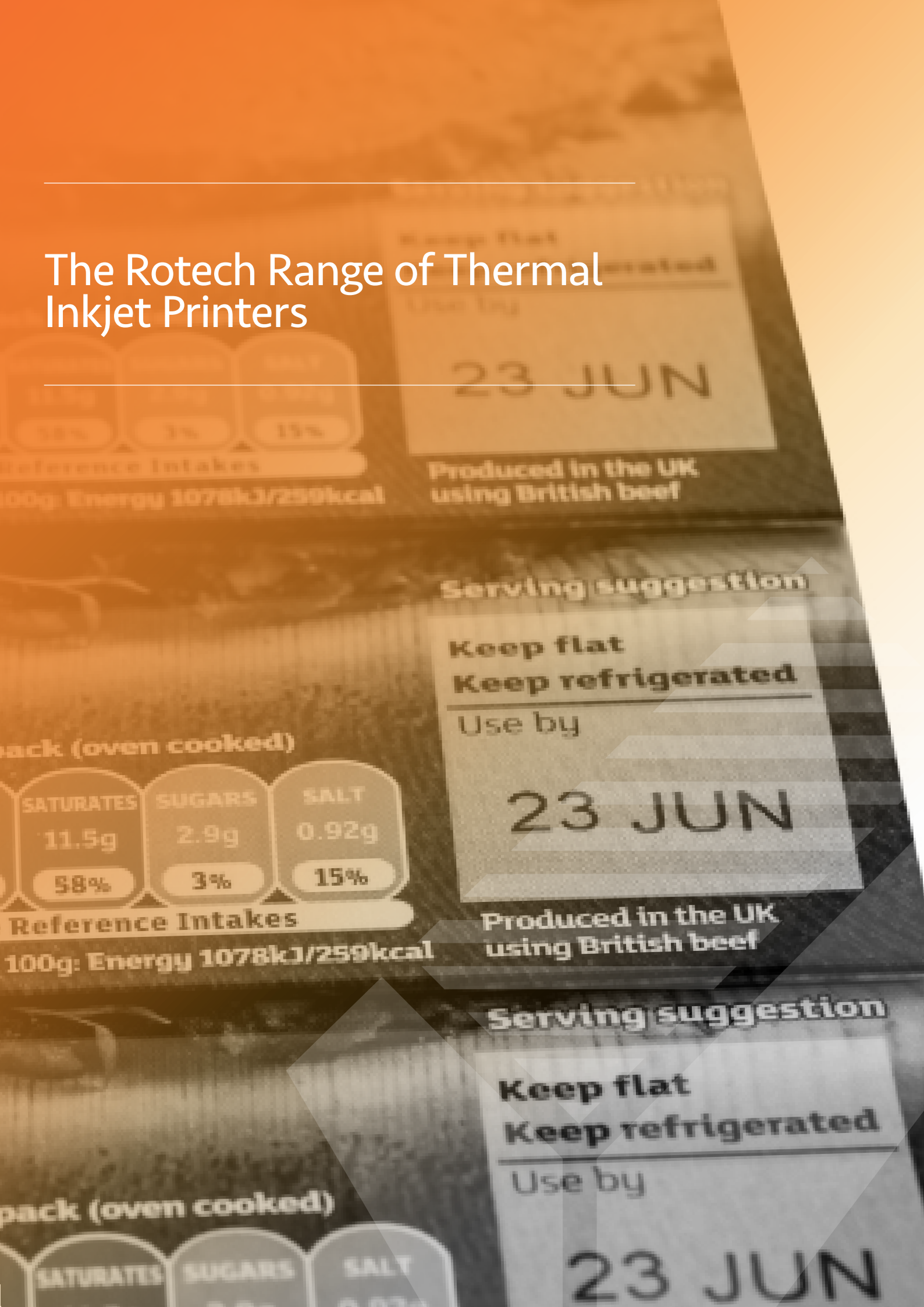
How we can assist you

Our support service makes it easy for you to respond to your customers demands, ensuring that their exact application needs are met and that they recieve the best service possible.

Our friendly, professional engineers are available to support you by:

- Demonstrating equipment
- Assisting with on-site presentations
- Providing flexible frame designs (bespoke to application)
- Print testing samples
- Arranging scheduled service visits
- Additional training, where required

The Rotech Range of Thermal Inkjet Printers



DATA SHEET

Rotech

Rotech HP X1Jet

The entry level, super compact thermal inkjet printer

With the controller and printer combined in one powerful, single unit, the X1Jet is extremely compact and cost-effective. A WiFi version is also available.

Using tried and tested HP printing technology, the Rotech HP X1Jet offers excellent print quality and it's compatibility with both water and solvent based inks makes it suitable for printing variable data onto a wide variety of substrates.

IDEAL FOR

- ✓ Autocodes, or printing from a PC
- ✓ Printing variable data on porous and non-porous substrates

TECHNICAL SPECIFICATIONS

Maximum print height: 12.5mm
Maximum print speed at 300dpi: Up to 90m/min*
DPI: up to 900
Weight: 650g
Dimensions (LxWxH): 188x80x98 mm
Ambient temperature: 5 to 40°c
Relative humidity (non-condensing): 10 to 90%

SOFTWARE VERSIONS:

	Print	Basic	Advanced	Pro/HiSpeed
Max print speed	30	30	60	90*
Max resolution vertical	300 dpi	300dpi	300/600 dpi	300/600 dpi
Max resolution horizonal	50-900 dpi	50-900 dpi	50-900 dpi	50-900 dpi
Max text length at 300dpi (m)	1	1	1	2
Text field	✓	✓	✓	✓
Counter	-	-	✓	✓
Time	✓	✓	✓	✓
Date	-	✓	✓	✓
Date Offset	-	-	✓	✓
Logo	✓	✓	✓	✓
Variables	-	-	✓	✓
Action fields	-	-	-	✓
Barcode	-	-	✓	✓
2D Code	-	-	-	✓
Data transfer via USB stick	✓	✓	✓	✓
Ethernet	✓	✓	✓	✓
WiFi	optional	optional	optional	optional

DATA SHEET

Rotech HP Integra One

Compact thermal inkjet printer for system integration

Unique "all-in-one" design with data entry via OLED display and iWheel device. Extremely compact and very easy to install and integrate. True "plug and play" printing.

Using proven HP technology, the Integra One offers excellent print resolution and it's compatibility with both water and solvent based inks makes it suitable for printing variable data onto a wide variety of both porous and non-porous substrates.

IDEAL FOR

- ✓ Printing on to labels, card, paper, flexible packaging and containers
- ✓ Mounting directly onto labelling systems and VFFS/HFFS packaging machines

TECHNICAL SPECIFICATIONS

Maximum print height: 12.7mm
Maximum print speed at 300dpi: Up to 180m/min*
DPI: up to 900
IP Rating: IP65 protection optional
Weight: 700g
Dimensions (LxWxH): 186x86x98 mm
Ambient temperature: 5 to 40°c
Relative humidity (non-condensing): 10 to 90%

SOFTWARE VERSIONS:

	Print	Basic	Advanced	Pro/HiSpeed
Max print speed	60	30	90/60*	90/180/60*
Max resolution vertical	300/600 dpi	300/600 dpi	300/600 dpi	300/600 dpi
Max resolution horizonal	50-900 dpi	50-900 dpi	50-900 dpi	50-900 dpi
Max text length at 300dpi (m)	2	2	2	6
Text field	✓	✓	✓	✓
Counter	✓	-	✓	✓
Time	✓	✓	✓	✓
Date	✓	✓	✓	✓
Date Offset	✓	-	✓	✓
Logo	✓	✓	✓	✓
Variables	✓	-	✓	✓
Action fields	-	-	✓	✓
Barcode	-	-	✓	✓
2D Code	-	-	✓	✓
Data transfer via USB stick	✓	✓	✓	✓
Ethernet	Option	✓	✓	✓
Password protection	Option	Option	Option	✓

DATA SHEET

Rotech HP X2Jet/X4Jet plus touch

High speed, intelligent control system for challenging applications

Intuitive touchscreen controller for 2 or 4 heads. Parallel operation via touch-optimised full keypad and function keys. 2 channel version for marking packaging on two independent production lines with different print starts and speeds.

Using proven HP technology, the X2/4 series offers excellent print resolution and it's compatibility with both water and solvent based inks makes it suitable for printing variable data onto a wide variety of both porous and non-porous substrates.

IDEAL FOR

- ✓ Printing on to labels, card, paper, flexible packaging and containers
- ✓ Mounting directly onto labelling systems and VFFS/HFFS packaging machines

TECHNICAL SPECIFICATIONS

Maximum print height: X2Jet - 25.4mm X4Jet - 50.8mm
Maximum print speed at 300dpi: Up to 180m/min*
DPI: up to 900
IP Rating: IP55
Weight: 3kg
Dimensions (LxWxH): 220x230x140 mm
Ambient temperature: 5 to 40°c
Relative humidity (non-condensing): 10 to 90%

SOFTWARE VERSIONS:

	Advanced	Pro/HiSpeed
Max print speed	90/60*	90/180/60*
Max resolution vertical	300/600 dpi	300/600 dpi
Max resolution horizonal	50-900 dpi	50-900 dpi
Max text length at 300dpi (m)	1	3
Text field	✓	✓
Counter	✓	✓
Time	✓	✓
Date	✓	✓
Date Offset	✓	✓
Logo	✓	✓
Variables	✓	✓
Action fields	✓	✓
Barcode	✓	✓
2D Code	✓	✓
Data transfer via USB stick	✓	✓
Ethernet	✓	✓
Password protection	Option	✓

X2Jet plus touch

A wide range of inputs including USB, Ethernet, and more

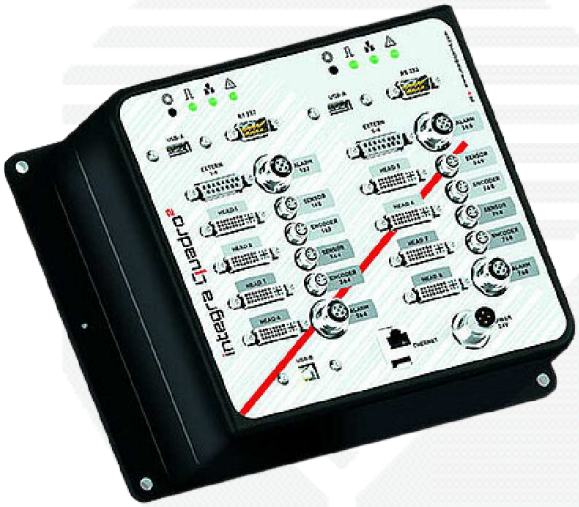
X4Jet plus touch

Integra Quadro/ Quadro²

Compact design for integration into control cabinets or machines

Features & benefits

- Optimised for integration into the production line with up to 4/8 printheads
- Developed in cooperation with our machines and installation manufacturers
- Ideal for applications where printing on to both primary and secondary packaging on one or two independant production lines is needed



- iLogic controller and OLED display are available for the Quadro, the Quadro² is completely designed for integration
- The printheads can be individually adjusted to the respective requirement
  1 channel: up to 4/8 printheads of one print technology
  2 channel: up to 4/8 printheads of different printing technology
  4 channel: up to 8 printheads of different printing technologies

Bulk ink system

Ideal for: applications with high ink use

Compatible with: Integra Quadro/Quadro² , Integra one, X2/X4Jet

Features & benefits

- Capacity of 10 ink cartidges
- Cost savings of up to 75% can be achieved for large-scale consumers
- Easy mounting of ink system
- Ink level sensing
- Minimises operator interventions

Special Models

Other thermal inkjet printers in our range

X1Jet Stitch

Ideal for : multi-lane or large area printing applications.

Exceptionally slim design. Up to 8 printheads can be cascaded to print a 100mm high print image.

Features & benefits

- Electronics installed behind cartridge to save space
- Compact design allows fitment to most packaging machinery
- All printheads can be controlled via a single interface

Shutter Printhead HP

Ideal for: aggresive/dusty environments

Designed to provide protection from dust and water ingression during a run by covering the nozzle plate

Features & benefits

- When printing is interrupted, the cartridge will automatically retract into the printhead and lock after a defined time
- When production resumes, the shutter will open and the cartridge will return to print position
- Uniform printing quality and clean operation, even after several days of printer being in standby/stopped
- Pressurised case prevents the ingress of dust (external compressed air connection required)
- Cartridge can be left in situ

Non-stop printhead

Ideal for: installation onto high-speed lines or lines where continuous production is a must

Features & benefits

- Designed for HP and LX Printheads
- Prints with a ratio of 2:1 - when the first cartridge is empty, the second will still be half full
- Reduces material costs since both cartridges may be fully emptied, in sequence
- Changing of cartridges and cleaning is possible without having to stop the production line
- Unique, alternating print sequence ensures cartridges do not dry out
- Maximum print height of up to 25mm (depending on printhead)

IP Models

Specially developed for harsh production environments

Integra one IP

Ideal for: system integration in wet or dusty environments, typical in the food industry.

Features & benefits

- IP65 protection class
- Intelligent, compact print systems
- Highly integrated, scalable HP printing system
- Operation via iLogik with OLED display

IP Jet

Ideal for: use in the food, plastics, pharmaceutical and chemical industries - can be left in situ during washdown operations.

Features & benefits

- IP65 protection class
- Compact, robust system for easy integration into production lines
- Optimised for vertical forming, filling and closing machines
- IP67 sealed plug-in connector

Integra ultimate

Ideal for: applications where the printheads sit in hard to reach places and/or are only used sporadically - can be left in situ during washdown operations.

Features & benefits

- IP65 protection class
- Print height of up to 25mm
- Patented nozzle shutter print head with integrated cleaning function

DATA SHEET

Rotech HP X1Jet Handheld

A battery operated, handheld thermal inkjet printer

Lightweight and compact, the Rotech X1Jet handheld is a powerful and versatile thermal inkjet printer.

The long-life battery enables high-quality printing over an extended period of time. Setting up the device and uploading the print images is a simple task via the use of a USB stick. A WiFi version is also available.

IDEAL FOR

- ✓ Printing high resolution text and images in multiple locations
- ✓ Totally portable for cable-free printing

TECHNICAL SPECIFICATIONS

Power supply: Lithium ion battery
Voltage: 12V
Power consumption: 15 W max
Weight: 1150g
Dimensions (LxWxH): 285 x 145 x 100mm
Ambient temperature: 5 to 40°C
Relative humidity (non-condensing): 10 to 90%

PERFORMANCE DATA:

Pro version	
Max resolution vertical	300/600 dpi
Max resolution horizonal	50-900 dpi
Max print height	12.5mm
Max text length (m)	2
Text field	✓
Counter	✓
Time	✓
Date	✓
Date Offset	✓
Logo	✓
Variables	✓
Action fields	✓
Barcode	✓
2D Code	✓
Data transfer per USB stick	✓
Ethernet	✓
Password protection	-

The printer and it's accessories such as the battery, charger, USB stick, instructions and the iDesign software are secured neatly in a durable case.

iDesign

Printer management and print image design

Simple to use software for designing printer formats and managing all types of printer. Included in all applications, free of charge.

- For use as central hub to control multiple printers
- Unlocked - multiple users at no additional charge
- Format creation etc.

iDesign 8 Basic

- Intuitive print image design - for creating and managing print images
- Presentation of all connected printing systems, for status monitoring
- Simple linking to database for direct downloading of production data
- User administration options enabling different levels of user access
- Disgnostic tool for signal transmission and interface connection

iDesign 8 Pro

- Print image and system group definition
- Extended user administration (user groups, GAMP standard)
- Server client installation

iDesign remote - universal data linking tool

- Printing starts with ERP system production data (e.g. SAP)
- Automatic update of internal print image memory
- Manual scanner and database connection option
- Creating status messages and protocol files
- Customised configuration - no programming required
- Interfaces:HTTP - Request, TCP-Client, TCP-Server, Filedrop

DBPrint - serial printing of database tables

- Printing of datasets in a database table
- Printing systems with several print heads may be cascaded as required
- Print speeds up to 20 prints per head (display < 20)
- Printing lottery codes or address labels in lettershops

DATA SHEET

Rotech Seiko X72

Large area inkjet printer, ideal for high-resolution printing up to 72mm on to primary and secondary packaging

The Rotech Seiko X72 uses unique FREEFLOW ™ technology - an open and non-pressurised ink tank system. This completely removes the need for expensive, moving parts like pumps and valves, bringing the following benefits:

- Reliable, cost-effective and maintenance-free
- The printhead's lifespan is up to 6 times longer than systems that used a pressurised ink feed
- Completely unaffected by harsh or changing production environments

COMPATIBLE WITH ALL SOFTWARE AND ERP SYSTEMS

Where other printers only work with their own brand of software, we leave the choice of software completely up to you.

In essence, the Rotech Seiko X72 is an industrial PC with a printhead. Because of this, any imaginable software, connector or communication protocol is compatible and 100% industry 4.0 ready.

The use of free label design and management software on the 20cm touchscreen controller is totally optional, allowing you to choose the software and machine control method that is best suited to your particular application.

TECHNICAL SPECIFICATIONS

Printhead	Seiko 510BN
Print height	72mm
Print resolution	180 DPI
Drop size	50 Picolitre
Max. print speed	45m/min
Ink tank capacity	400ml
Omnidirectional print direction	180 degrees
Available inks	Oil-based (mineral-free) & solvent
Controller TsC20	20cm Touchscreen + Windows OS

Technology comparison case study 1

Cosmetic contract packer replacing 9 CIJ systems with TIJ

CIJ VS. TIJ

x 9

Annual cost = £5,000 per system

TOTAL £45,000 p.a.

Made up of:

£800 - doesn't include additional ink disposal and handling costs

Ink and solvents

Service & maintenance costs

£1,700
Service contract

£2,500
'Out of contract'

Total cost for year 1, approx.

£44,046

Made up of:

£39,915 - replacement X1Jet & iJet kits -
£4,435 cost per system inc. installation, framework etc.

The ability to print 2D barcodes - something the CIJ printers couldn't do

£4,131 ink cartridges - £459 per printer.Based on printing 12 Characters at 250dpi = 665K prints per Cartridge/3,990,000 prints per system, per year

Payback is less than 12 months

Year 2

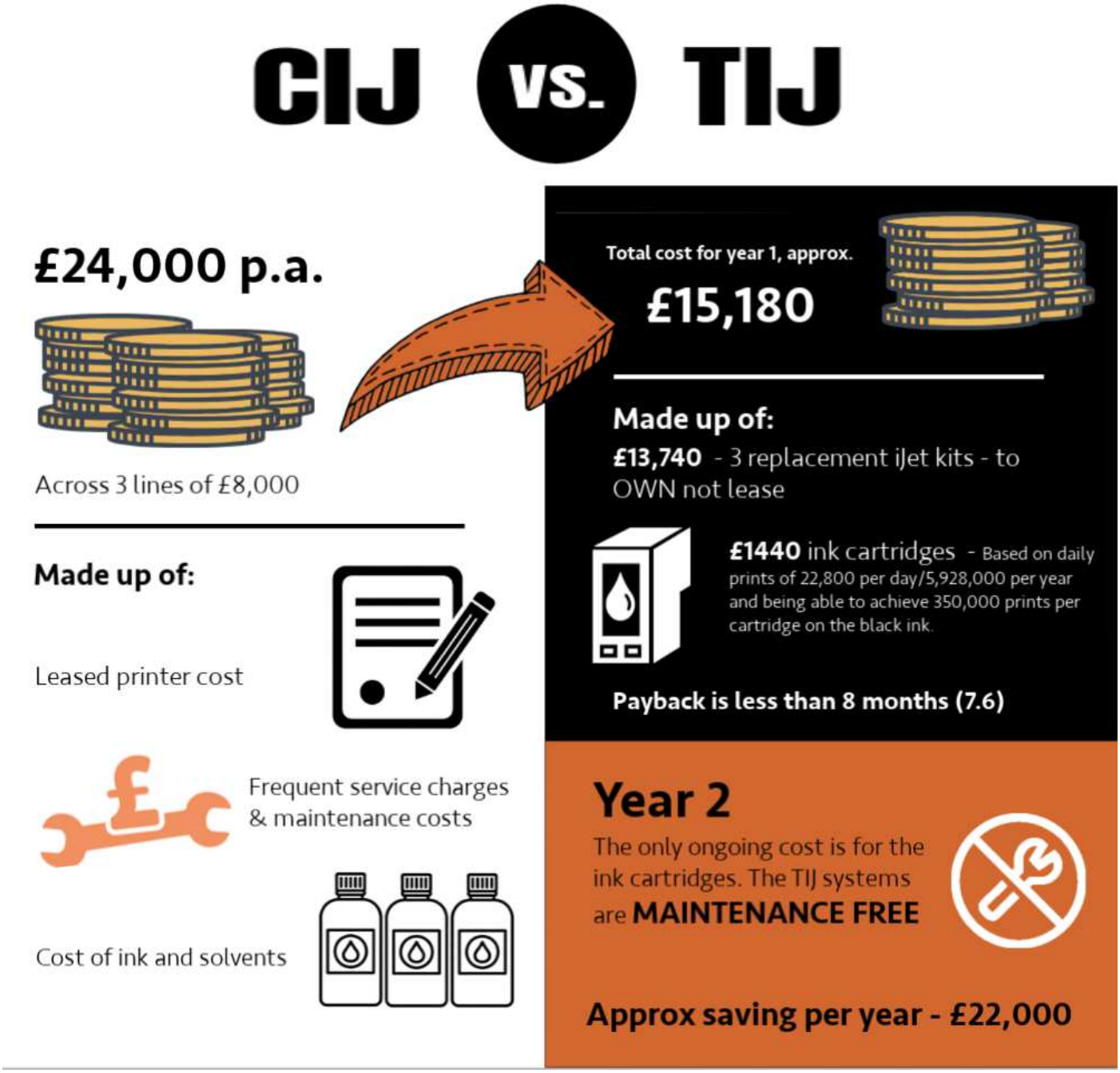
The only ongoing cost is for the ink cartridges - The TIJ systems are **MAINTENANCE FREE**

Approx saving per year - £40,500

Note: calculation didn't include cost of any downtime that would have occurred.

Technology comparison case study 2

FMCG contract packer replaced 3 leased CIJ systems with TIJ printers and achieved a 8-month payback



Note: As the original calculation did not include any downtime or ink disposal and handling costs, there will be additional saving here

Casestudies

Customer: Molls Bacon
Project: Applying variable information on to film lids of thermoformed packs

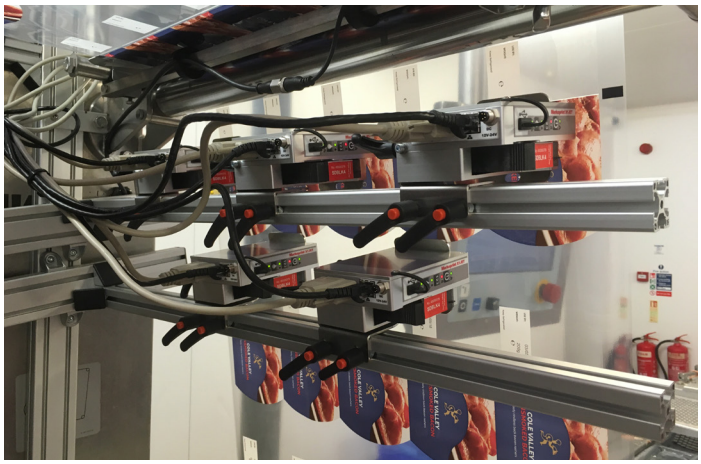
About Molls Bacon - From it's Birmingham slicing and packaging facility, Molls Bacon supplies the food service and retail markets in the UK and overseas with vacuum and MAP packed bacon, sold under its Cole Valley brand as well as under customers' own labels.

The requirement - Molls was already buying consumables from Rotech, so when it needed a new system for applying variable data to the film lids of thermoformed packs, it sought advice from the coding specialist.

Up until this point, Molls Bacon had been overprinting labels, then using a label applicator to apply the labels across the web path. A move from labels to pre-printed film prompted them to look at direct coding options.

The industry standard solution for coding film on a thermoformer is to use a thermal transfer printer in conjunction with an indexing unit. However, these large systems are expensive to buy and operate. Ribbon is often wasted and the disposal of the ribbon and cores is an added expense. Even using continuous inkjet for such an installation brings unnecessary costs, both in terms of initial investment, running costs and waste disposal.

The Solution - In the first UK installation of its kind, Rotech supplied Molls Bacon with a five head, centrally-controlled thermal ink jet coding solution. The capital cost was a third less than the thermal transfer systems that are usually specified for these on-thermoformer applications, and the bacon producer is enjoying low running costs thanks to exceptional ink economy, reduced set-up times and zero servicing.



What the customer had to say...

"I'm very impressed that the only upkeep I have to do on these printers is clean the heads twice a day. The unit is very efficient in regards to ink consumption - there is still 40% left and we haven't replaced the cartridges since they were installed in March. If I'd known then what I know now about TIJ, I would have had these printers on our other thermoformer."

What the customer had to say...

"One of the aspects of the Rotech printer that I like best is that we can add additional messages to the packaging. We can flag up this information about our compostable film, references to the particular flavour or a limited edition lolly. It takes only a matter of seconds to pull different settings from the memory. On graphics, you can achieve almost photographic quality."

Customer: LICKALIX
Project: in-line printing of variable information

About LICKALIX - London-based. family-run producer of healthy, organic ice-lollies.

The requirement - In 2019, LICKALIX made the bold decision to switch their Polypropylene (PP) film to a compostable alternative - the first 'frozen treat' company to do so.

After purchasing a new flow-wrapper, it was suggested to them that they consider in-line thermal inkjet (TIJ) coding to print best-before dates, batch codes and other variable information on to their packaging.

As their lollies are frozen, yet packed and coded in ambient temperatures, finding an efficient, reliable coding solution was essential to ensure minimal time out of the freezer.

Our Solution - Integrated with a flow-wrapper machine from Ilapak, The Integra One printer meets all of the requirements. It's OLED display and rotary dial for menu selection make it simple to use and an encoder ensures that, as machine speeds ramp up and down, the coder keeps pace with the flow-wrapper and maintains consistent code quality.

In addition, the ink used by the Integra printer has excellent adhesion to the compostable film, something that was proved by comprehensive pre-installation trials.

Customer: Rollagranola
Project: Direct printing on to cereal boxes

About Rollagranola - Established as a start-up in 2014, premium granola brand, Rollagranola, produce a range of delicious, healthy products that are made with top quality ingredients. Their products can be found on the shelves of major supermarkets, premium food stores, and on their own website.

In 2016, due to an increase in demand, Rollagranola moved from the founder's kitchen into their 2,500 square foot factory in Hertfordshire, where they set about putting new production equipment and resources in place.

The requirement - To speed up output and improve efficiency, Rollagranola invested in a Freemantle carton erector which completely automated the packing process.

However, despite the packing process being transformed, the company were still applying date and batch codes by hand using a sticker gun - a slow process which occasionally lead to products being mislabelled. A direct coding application was needed.

Our Solution - Rollagranola produces around 34 boxes of different varieties per minute. The small cereal boxes are all of a consistent size, with a standard print area, meaning that only one printer was required to date and batch code all cartons.

Using a simple up and over bracket assembly, an Intégra, themal inkjet printer was positioned on to the carton feeder, allowing clean, crisp codes on multiple types of data to be printed on to the boxes, with no mess and no maintenance required.

What the customer had to say...

"We looked at various options but chose Rotech's Intégra printer because of its simplicity and reliability. Moving to this new thermal printing technology has reduced our labour costs and eliminated mis-labelling, which has improved overall efficiency"

Customer: MacPhilips Foods
Project: Printing date and batch codes on to food labels

About MacPhilips Foods - UK distributor of quality African Foods and ingredients that are supplied to wholesalers and retailers across the UK and Europe.

The requirement - Macphilips Foods were having problems with their continuous inkjet printer - it was becoming increasingly troublesome and expensive; poorly printed codes were leading to product recalls, downtime was frequent and consumable costs were high.

The company required a reliable, robust and cost-effective solution to print their products. They were especially having trouble finding ink that would stick to the lids of their palm oil bottles - after coming into contact with the oil, the print would rub off.

Our Solution - To meet all of their needs, we suggested that it would be easier, cleaner and more efficient to print their codes directly onto the label. This would provide a solid code which they could apply to any of their products. To demonstrate this, we installed a small X1Jet directly onto the labeller and set it to print in the 3mm area.

The results were instantaneous – a reel of labels was precisely coded in a matter of minutes, clearly marked and still firmly in place when wiped with oil.

For added flexibility, we showed them how the printer could be simply unplugged and moved onto the conveyor line for direct printing onto the pre-labelled bottles, and adjusted to any position to print on any of their other products – for short or long runs. They were convinced, and along with the many other benefits that the printer offered, the solution was perfect and an order was placed.

What the customer had to say...

"I would like to express my sincere thanks for making the printer installation happen so soon after the survey. Words cannot express how happy I am with the set up and the printer itself - this will make my life so much easier and eliminate the constant headaches I used to encounter. "

ourstory

Founded in 1997, Rotech has grown to become one of the most respected coding and marking specialists in the UK. Our privately owned business has built a reputation of providing a valuable, end-to-end service - from consultancy and advice, through to product installation and ongoing support.

Our success is due to our expertise and our ability to listen and solve problems. No matter how small or how significant, we will always deliver the right solution in terms of efficiency, sustainability and quality engineering.

Our extensive knowledge of coding and marking technology, combined with our friendly, reliable, 'can-do' attitude, has led us to being trusted and respected by organisations right across the packaging industry, both in the UK and Internationally.

Rotech

ROTECH MACHINES LIMITED

1 Brownfields Court, Welwyn Garden City
Hertfordshire, AL7 1AJ England

E: sales@rotechmachines.com T: +44 1707 393 700
W: **rotechmachines.com**

PPMA MEMBER