

NEW

**HITACHI**  
Inspire the Next

Coding & Marking Solutions

# Inkjet Printer

UX2 Series



## RELIABILITY

Highly reliable design and superior construction

## EFFICIENCY

Environmentally friendly with low operational costs

## EASE OF USE

Simple touchscreen operation with video-based guidance

For over 45 years, Hitachi has developed and produced **high-performance inkjet printers** based on the **well-proven Continuous Inkjet (CIJ)** principle for **industrial marking**.

Hitachi Industrial IJ printers are **high-speed printers** adopting a **non-contact printing method**, ideal for a **wide range of applications**. They are capable of applying best-before dates, logos, barcodes, lot numbers and data matrix codes, which makes the **new UX2 Series the perfect solution** for both complex and standard applications.

### Highly Reliable

Hitachi products are renowned for being **extremely reliable** in harsh environments. All functionally **critical parts** are **manufactured in-house**. The use of Hitachi's own components reinforces the **high quality levels, reliability and excellent value for money**.

### Cost-Effective

The new, **economical ink recovery technique** achieves industry-leading levels of solvent consumption and the **very low maintenance costs** **minimise the total cost of ownership**.

### Global Sales & Service Network

Are you looking for a **global company** that can work with you at a **local level**? Hitachi offers a **global sales and service network** when marking, coding and traceability challenges demand a **coordinated answer**. For each of your locations, and across your entire organisation, we will **champion your goals** by providing international consistency, a global perspective, broad expertise and coordinated services provided by dedicated contacts. Our **global team** applies its **worldwide technical expertise** to your **unique challenges** in a consistent way. Tangible deliverables and proven solutions are the results of our business analysis and project implementation. In addition, we offer **cross-border project management and coordination** between suppliers, OEMs and end-users. **You gain more visibility and save time and money.**

# Overview of UX2

INTUITIVE HMI

VIDEO GUIDANCE  
ONBOARD

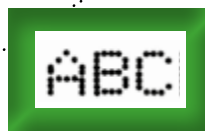
SAFE-CLEAN  
STATION  
(OPTIONAL)

LESS PRINT  
HEAD CLEANING

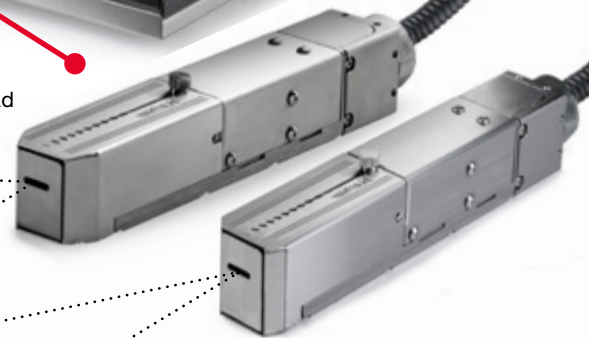
IMPROVED  
PRINT QUALITY



Standard print head  
(up to 6 lines)



Short print head  
(up to 2 lines)



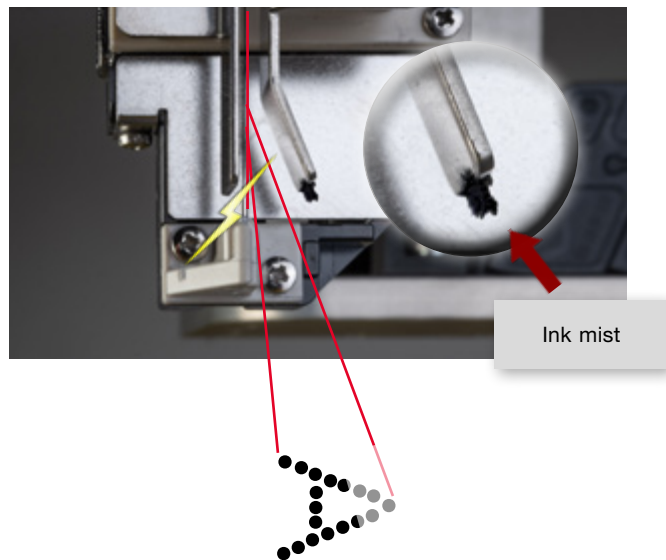
# Increased Production – Less Downtime

## Newly designed to stay **cleaner, longer**

### Conventional Printers

With **conventional print heads**, ink mist\*<sup>1</sup> deposits onto the surface of components that control the inkjet. Over time, the build-up of ink can result in **downtime lead to lost production**.

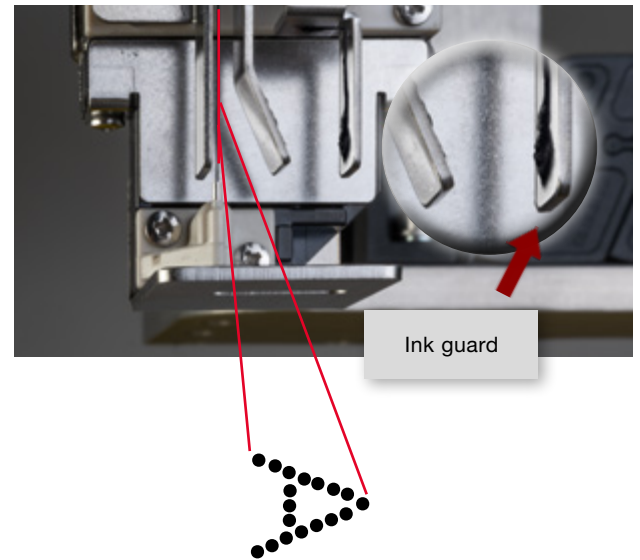
\*<sup>1</sup> Ink mist build-up may vary depending on operating conditions.



### Print Longer with Ink Guard

**UX2 printers** can print for **3 times longer** than previous generations\*<sup>2</sup> due to a **unique print head design**. The ink guard feature attracts the ink mist to a collection area away from the sensitive printing components. The result is **fewer print quality issues and less frequent print head cleaning**. Keeping your production running while maintaining a **clean production environment**.

\*<sup>2</sup> Results refer to the same test environment and test conditions compared with UX Standard.



### Benefits

Fewer print quality issues



Less print head cleaning



Reduced ink contamination  
in print head



Print for 3 times as long  
between cleaning cycles



More production output



Cleaner production  
environment

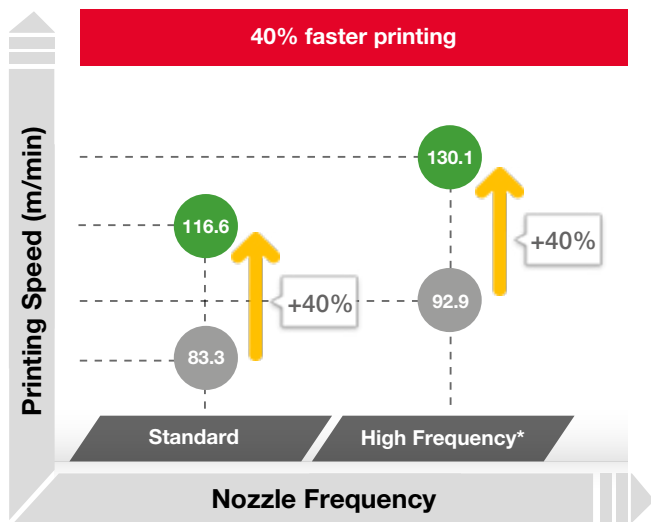


# Speed & Quality

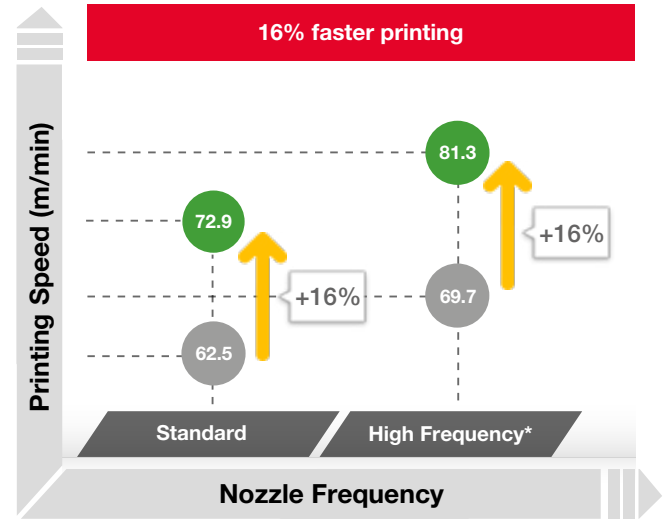
## Clear, **Precise Codes** at the Most Demanding Speeds

Using improved dot control algorithms, our newly designed UX2 printer is capable of producing clearly legible codes at the most demanding production speeds.

### Dual Line Printing



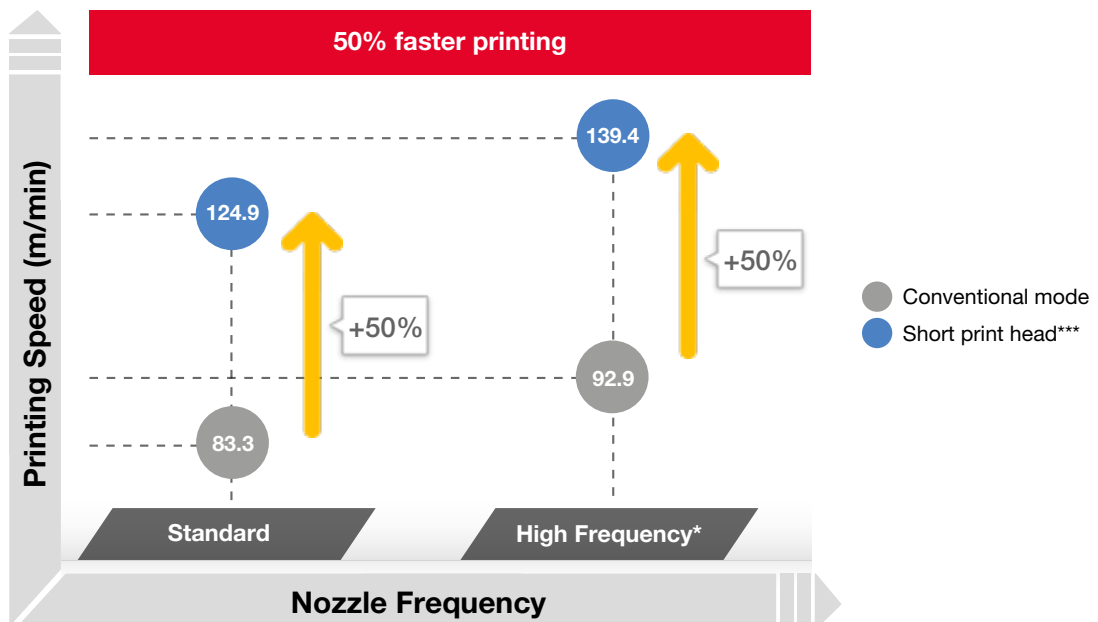
### Three-Line Printing



● New algorithm\*\*    ● Conventional mode

## Available with Two Head Sizes to Optimise Print Quality

Our standard head produces crisp code quality from 1 to 6 lines of print. A field configurable “short” print head option focuses on the most demanding print speed applications that require 1 or 2 lines of print.



\* with high frequency compatible inks

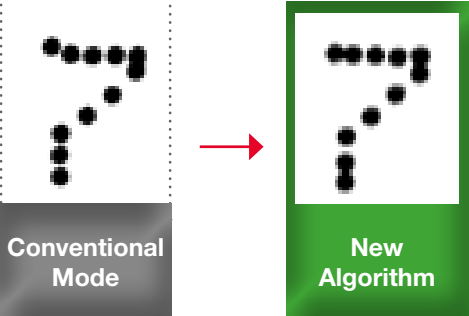
\*\* only support the specific font

\*\*\* print speed shown in the diagram are tested with 2 line print

# Improved Clarity

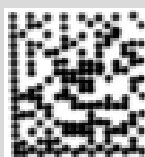
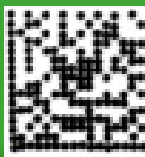


## Enhanced Dot Control Algorithm

Each printed character is made up of many dots of ink. If the dots are not correctly positioned, the printed characters are distorted and can be difficult to read. This becomes critical when printing barcodes. The new UX2 incorporates the latest advances in individual dot control, resulting in unparalleled print quality. Both text and barcodes are printed with substantially improved clarity.



Print samples showing how new droplet control algorithm improves dot placement and reduce character distortion

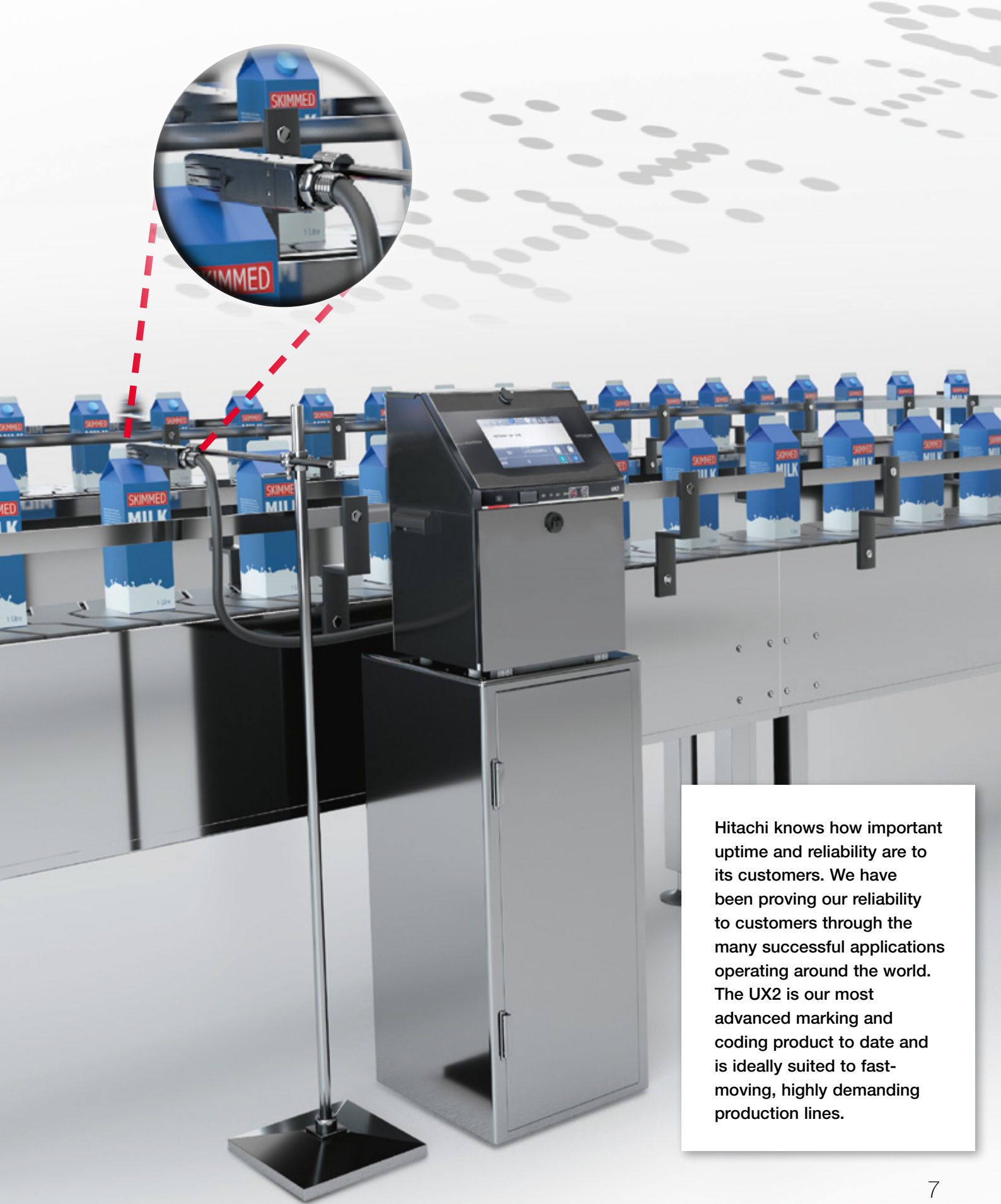
Print distance: 15 mm, Font size: 5x7, Speed: 36 m/min

No.	Item	Conventional Mode	New Algorithm																				
1	Print Result																						
2	Quality Grade* Results from 10 random codes	 <table border="1"><thead><tr><th>Grade</th><th>Count</th></tr></thead><tbody><tr><td>A</td><td>0</td></tr><tr><td>B</td><td>4</td></tr><tr><td>C</td><td>5</td></tr><tr><td>D</td><td>1</td></tr></tbody></table>	Grade	Count	A	0	B	4	C	5	D	1	 <table border="1"><thead><tr><th>Grade</th><th>Count</th></tr></thead><tbody><tr><td>A</td><td>5</td></tr><tr><td>B</td><td>5</td></tr><tr><td>C</td><td>0</td></tr><tr><td>D</td><td>0</td></tr></tbody></table>	Grade	Count	A	5	B	5	C	0	D	0
Grade	Count																						
A	0																						
B	4																						
C	5																						
D	1																						
Grade	Count																						
A	5																						
B	5																						
C	0																						
D	0																						

\* internal test result

Print distance: 15 mm, DM size: 16x16, Speed: 32 m/min





Hitachi knows how important uptime and reliability are to its customers. We have been proving our reliability to customers through the many successful applications operating around the world. The UX2 is our most advanced marking and coding product to date and is ideally suited to fast-moving, highly demanding production lines.

# Safe-Clean Station

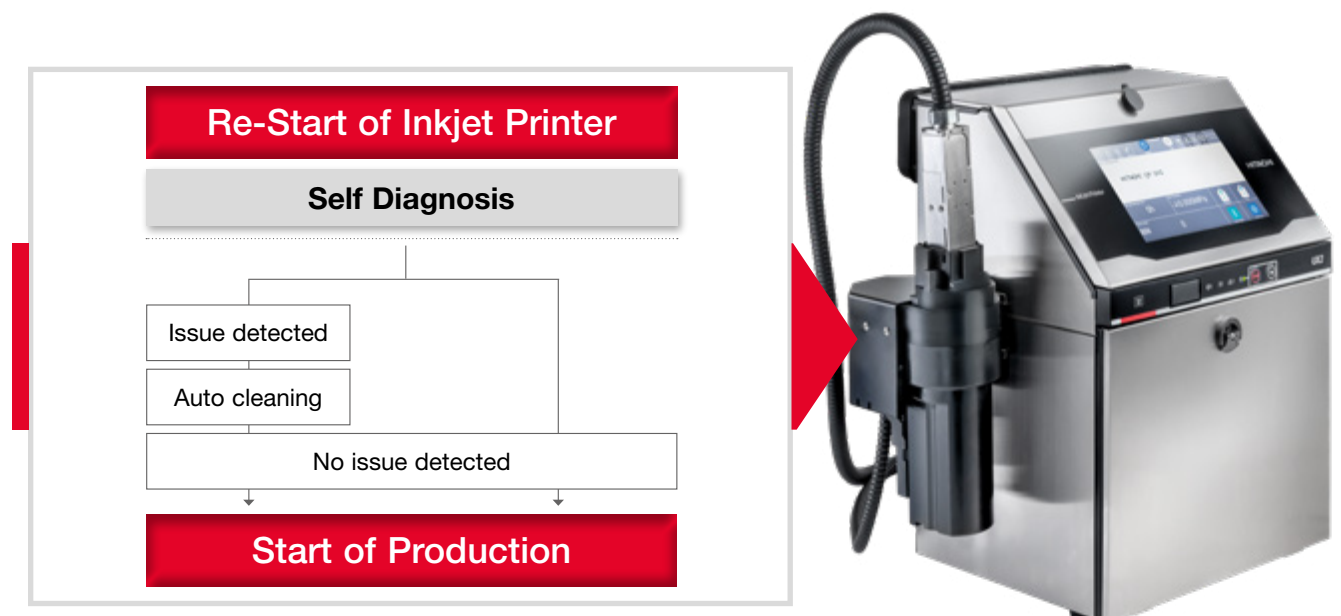
## Added Convenience and Safety

The sealed Safe-Clean Station thoroughly cleans and dries in one simple operation. Eliminate the need for open solvents when cleaning the print head. As the solvent volatilized during drying is sucked out by the air pump and discharged through the exhaust duct, the operator is not exposed to the solvent gas. All used make-up cleaning solvent is captured in a sealed reservoir - for safe disposal.



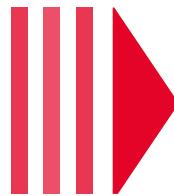
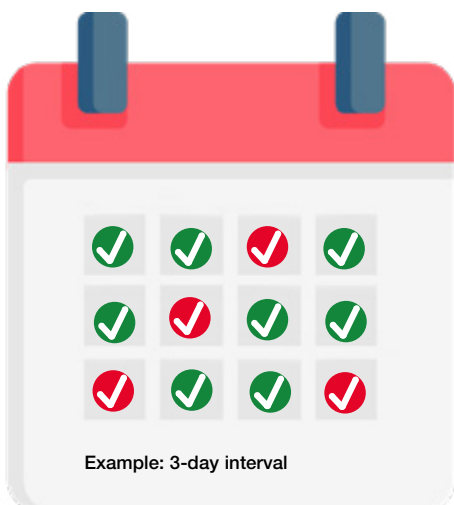
## Self-diagnosis by new Smart Start function

Most of the downtime associated with inkjet printers is a result of a dirty nozzle. The self-diagnosis start-up with Safe clean station can be used to automatically clean the nozzle by reversing the flow of solvent when necessary, which help ensure that IJP restarts smoothly.



## Always ready to print

Even after long periods of inactivity, the cleaning station eliminates build-up of dried ink by periodically running an automatic nozzle-rinse according to a pre-programmed schedule. This means that the printer is always ready to print and will not need any manual cleaning at start of production.



# Self-Guided Troubleshooting

## Video on Board, for Preventative Maintenance and Recovery

An interactive video on the printer screen guides users to carry out routine tasks, preventative maintenance activities and even recover the printer from a fault condition. It's so intuitive, even untrained users can easily follow the on board video guidance.

As a result, daily interaction with the UX2 is instinctive with no surprises. When needed, users will be guided by the video to clean the print head and add fluids.

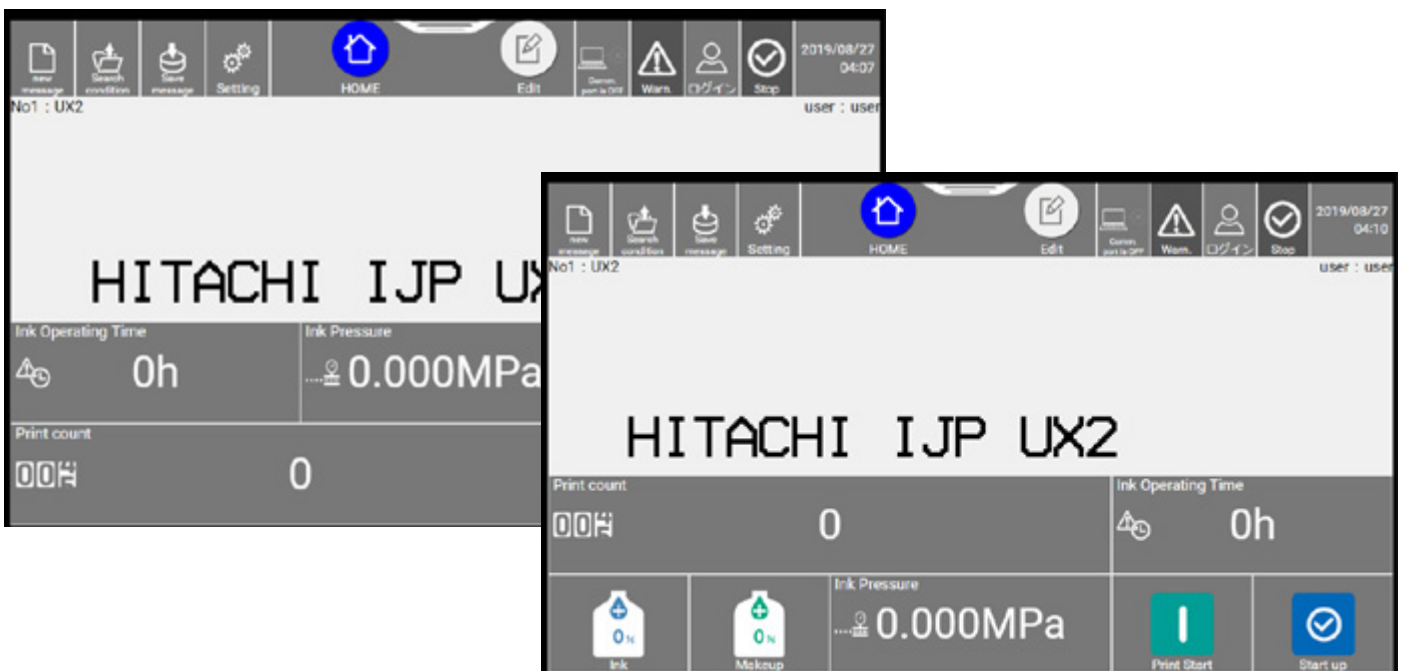


# Intuitive Display & Simplified Printer Setup

## Flexibility to Meet Your Needs

The printer screen is designed with flexibility in mind. With a configurable home screen, you can choose what information is critical to display to operators.

- Choose the information critical to your production needs.



Familiar tablet-style touchscreen allows swipe functionality similar to smartphones and tablets.

## Easier Setup Screen

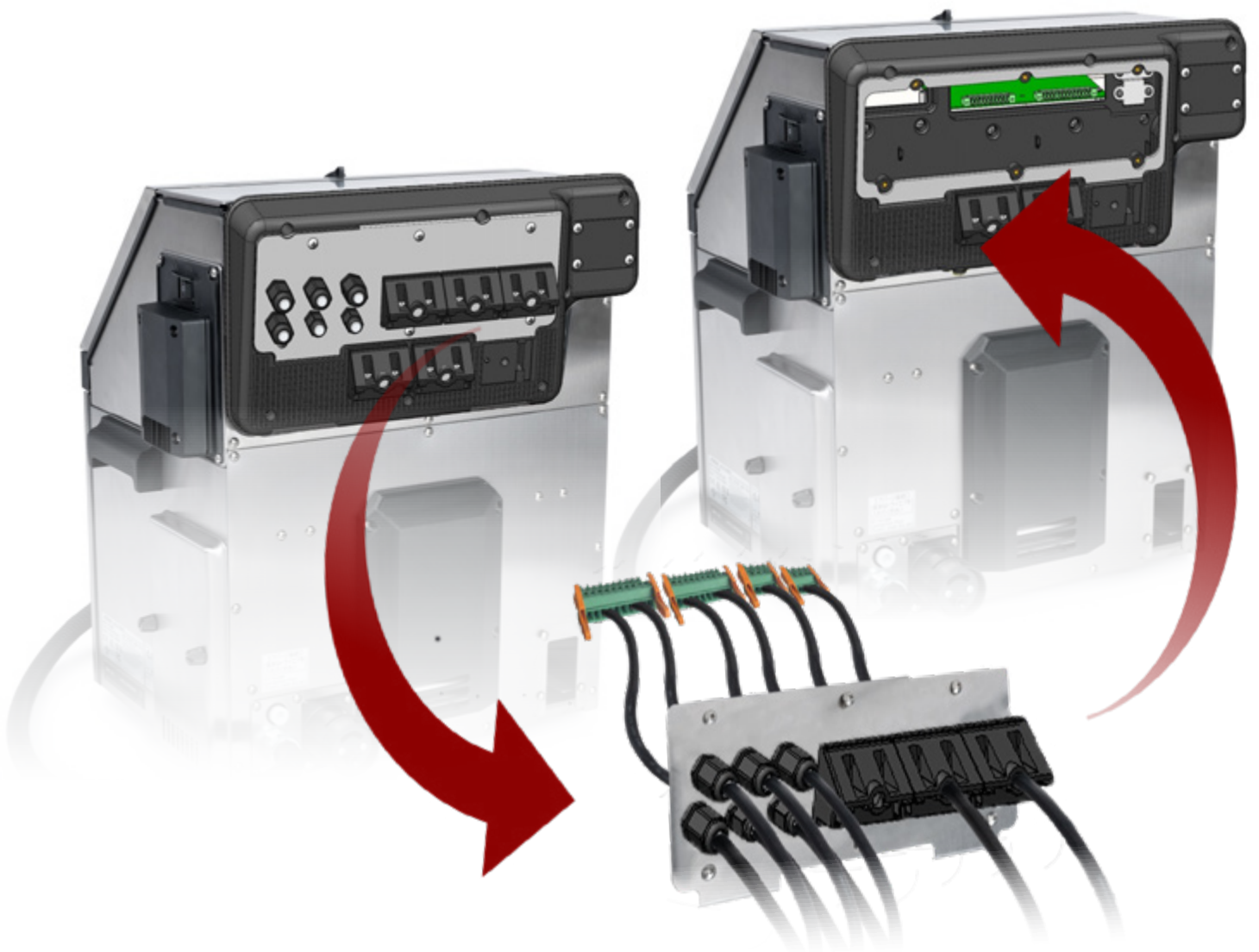
The new, intuitive on-screen setup eliminates confusion when creating messages, which saves the user time.



# Quick Line Changeovers

## Move Printers with **Ease**

Our quick-change I/O connectors enable printers to quickly move from line to line. Eliminate time-consuming mistakes by preconfiguring the I/O routing in advance.



## Integration with modern industrial protocols

### Modern Communication Protocols

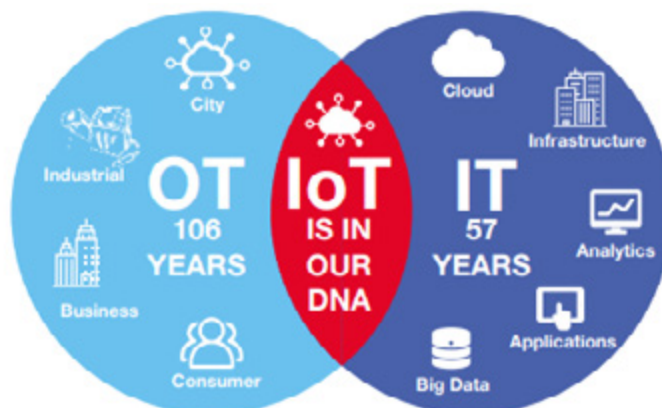
By employing modern open protocols such as OPC-UA, Hitachi's printers are ready for the upcoming Industry 4.0/IoT revolution. This open-style data connectivity enables our printers to be compatible with virtually any networked platform, regardless of OS. In addition, the latest UX printers come equipped with Ethernet/IP, OPC-UA, Modbus and Serial RS-232. Hitachi is currently the first CIJ manufacturer to gain ODVA\* approval for Ethernet/IP.

\* ODVA is a trade and standards development organisation, based in Michigan, USA.



### Improve Operations, Quality and Transformation with IoT Analytics

Hitachi is one of the few companies in the world with decades of experience and deep expertise in both OT (operational technology) and IT. In the industrial arena, we're developing data-driven smart manufacturing and maintenance solutions that are rapidly displacing traditional processes.



# Reasons to Make Your Life Easier ...

## Simple Fluid Management

IC tags are adopted for the ink and solvent fluid cartridges. Installation of the wrong cartridge can be prevented by simply passing the cartridges over the main unit, which is equipped with RFID\* (Radio Frequency Identification) reader. A message appears on the screen if the wrong cartridge is scanned.

\* Some geographic areas are excluded.

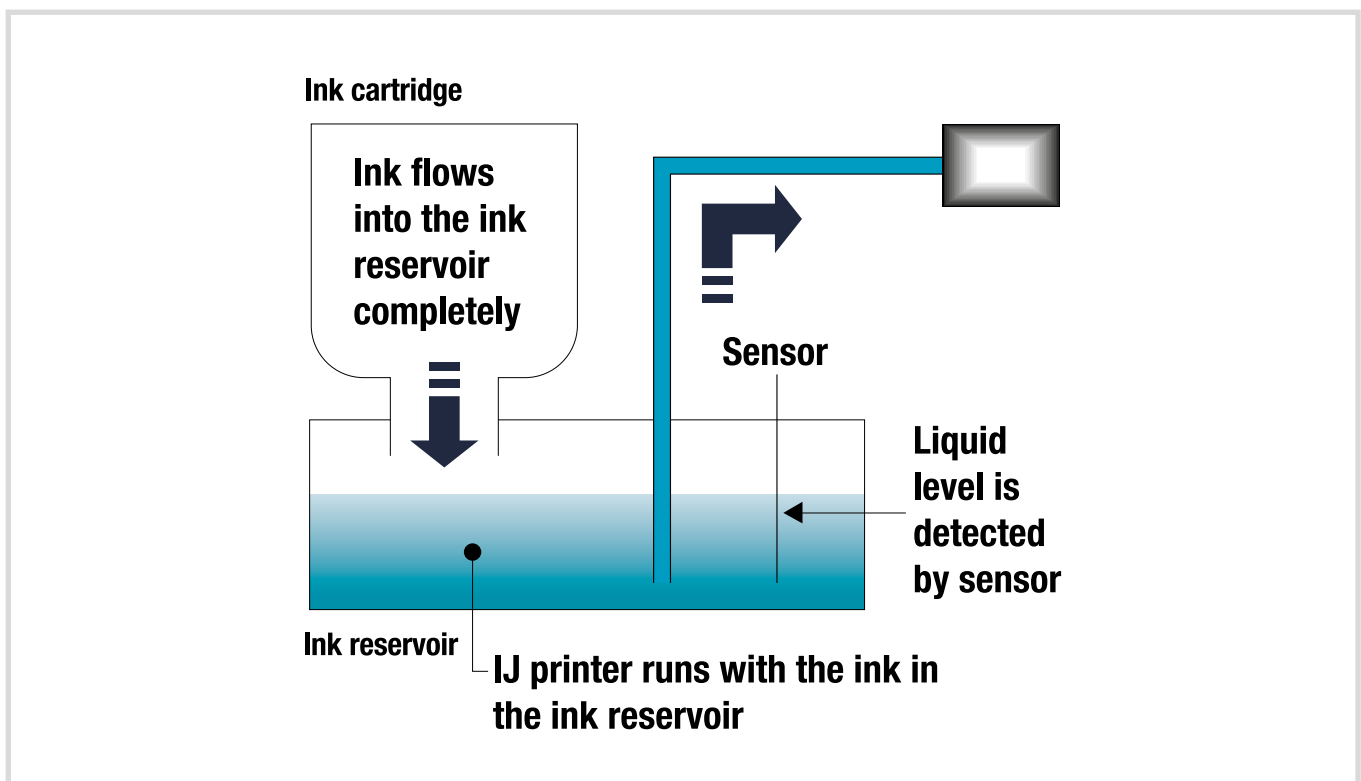
\* Hitachi Industrial Equipment Systems Co., Ltd. declares that the IC tag reader is in compliance with the essential requirements and other relevant provisions of the FCC Part15 subpart C, EN 301 489-1/-3, EN 300 330-1/-2.



RFID prevents the installation of the wrong cartridge

## Simple, Ecological Disposal

Ink and solvent cartridges are good right down to the last drop and drain fully into their respective reservoirs. All fluid drains out of the containers ensuring that both the ink and make-up cartridges can be disposed of easily, instead of incurring costly hazardous waste disposal.



## Tapered Print Head

By designing the print head with a taper, Hitachi is able to get closer to certain packaging formats. One example is the gable-top carton. This shorter distance ensures improved print quality. The print head has also been coated with anti-corrosive plating to keep it operating even in severe environments.



## New printing Technology, „6-Line Print“ to Suit a Wider Variety of Needs

6-line printing is now possible from one print head. Even with multiple print lines, the original Hitachi interlaced-drop control ensures that each character is accurately printed. Whilst for single-line printing at high speed the print quality is improved using the new print control system.



## Made in Japan

Hitachi industrial IJ printers are manufactured using the know-how and technological expertise that have been accumulated since 1975 in Hitachi City, where Hitachi was first founded.

After production, all printers have to pass Hitachi's strict quality management testing process before shipment. We provide quality products to our customers worldwide.



## Speciality printing is possible with a wide array of ink types

### Highly Adhesive

Metal / Paper / Plastic

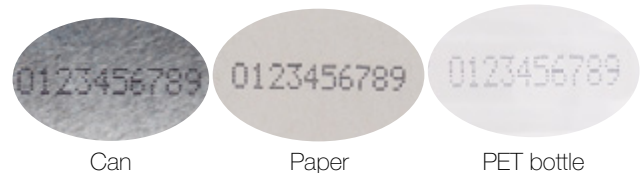
Suitable for containers made from PP (polypropylene) or PE, or two-piece can, three-piece can in the food, medicine and cosmetics industries, etc.



### Ethanol Ink

Metal / Paper / Plastic

Suitable for applications where MEK-based ink is not acceptable in the food, pharmaceutical and cosmetics industries.



### Quick Dry Ink

Film

Suitable for food packaging, film and applications where quick drying is required, such as pillow packaging machines.

Time	Quick-Dry Ink	Standard Ink
0.3	19.12.16	19.12.16
0.5	19.12.16	19.12.16
1.0	19.12.16	19.12.16

### Solvent-Resistant

Film / Plastic

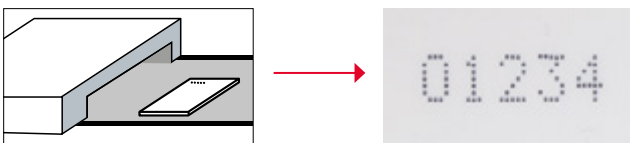
Suitable for food packaging and processing in which containers are cleaned by ethanol. This ink is resistant to being wiped with ethanol during the sterilisation process.

Time	Solvent-Resistant Ink	Standard Ink
Right after printing	2019.8.18 QPS	2019.8.18 QPS
Wiping with alcohol	↓	↓
After being wiped with alcohol	2019.8.18 QPS	2019.8.18 QPS

### UV Curing

Electronic parts

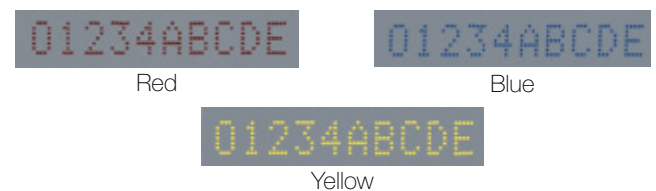
Suitable for PCB and electronic parts. Curing by UV light makes the printed ink resistant to oils and solvents.



### Coloured Ink

Metal / Paper / Plastic

Highlighting the printed object with a different coloured ink.



### Ultraviolet Luminescence

Can / Plastic

Only seen in UV light, this is suitable for security applications to ensure the integrity of your brand or product.

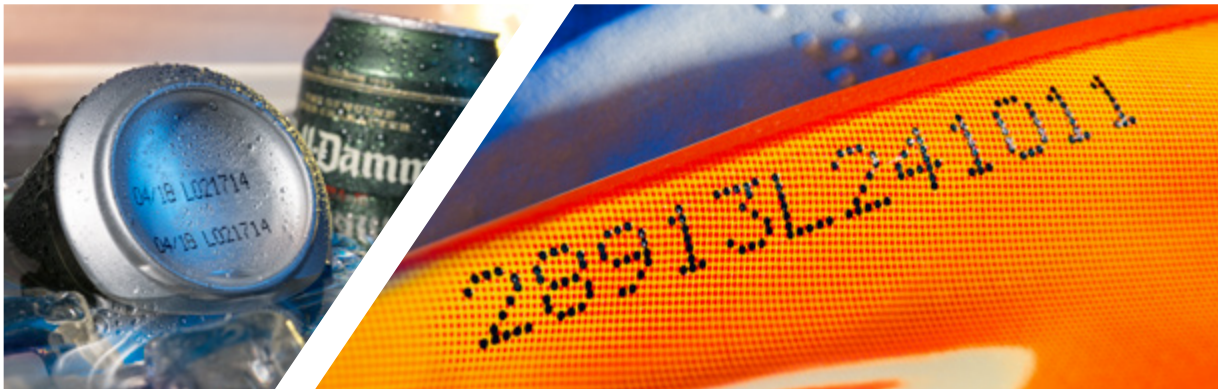


After printing (invisible)



Irradiated by UV light (luminescence)

# Print Samples



# Printer Specifications

		UX2 UX2-D160W
Nozzle size		65µm
Max. number of print lines		up to 6 lines
Max. number of print characters		240 characters (option: up to 1,000 characters)
Font (Horizontal × Vertical)	4x5	1 to 6 lines (Short printhead option : up to 2 lines)
	5x5	1 to 6 lines (Short printhead option : up to 2 lines)
	5x8 or 5x7	1 to 4 lines (Short printhead option : up to 2 lines)
	9x8 or 9x7	1 to 4 lines (Short printhead option : up to 2 lines)
	7x10	1 to 3 lines (Short printhead option : 1 line)
	10x12	1 to 2 lines (Short printhead option : 1 line)
	12x16	1 to 2 lines (Short printhead option : 1 line)
	18x24	1 line
	24x32	1 line
	30x40	1 line
36x48	1 line	
Character height		2-10mm (optional short print head: 2.0-6.5mm)
Input device & display		WYSWYG design Display: 10.1" color TFT LCD, WSVGA(1024×600) Input device: Touch panel, input sound provided
Maximum print rate (character per second) (Font 4×5, space 1 dot, 1 line, 76.9kHz)		Up to 1,538 (option: up to 3,076)
Standard characters		Alphanumeric(A-Z, a-z,0-9), symbols(27) and space: Total 90
User pattern		200 patterns each for dot matrix (50 patterns for Free size)
Barcode print		code39, ITF, NW-7, JAN-13, JAN-8, code128/EAN128, UPC-A, UPC-E, GS-1 Databar
2D code printing		Data Matrix (Alphabet: 49 characters/Numericals: 98 characters), QR code (Alphabetical characters only: 61, Numbers only: 101), Micro-QR code (Alphabetical characters only: 11, Numbers only: 18)
Print functions		Calendar, Count, (Option: Shift code)
Message storage capacity		300 messages (option: up to 2000 messages)
Input signal		Print target detection, Printing stop, Rotary encoder pulse, Reciprocative printing, Remote control (Run, Stop, High-voltage ON/OFF, Reset), (NPN/PNP selectable)
Output signal		Print in progress or Print complete, Online (NPN/PNP selectable), Print ready, Fault, Warning (NPN only)
Customizable screen		✓
Animation guidance		✓
Safe-Clean-Station		Optional
Data interface		USB/RS-232 Converters at baud rates selectable up to 115,200bps
Ethernet communication		Modbus, EtherNet/IP, OPC-UA
Print head cable length / angle		4m (in-line/90 degrees)
Operating temperature range		0-50°C (1067K Ink)
Operating humidity range		30-90%RH (no condensation)
International protection		IP65
Power supply (Automatic voltage selection)		AC100-120/200-240V±10%, 50/60Hz
Dimension		460×425×534mm (Width×Depth×Height)
Approximate weight		27 kg (60 lbs)





## Head Office

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### Japan

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