

Hitachi IJ Printer PXR Series



http://www.hitachi-ies.co.jp/english/products/ijp/

Hitachi IJ Printers for industrial use can be selected in accordance with varieties of printing needs.



Compliance with the RoHS Directive

•With the PXR series, the amount of raw materials that affect the environment have been reduced. and the guidelines as set forth in the RoHS directive as issued by the European Union have been followed.

*The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

Eco-friendliness and Sanitary

•Varieties of ink types "Chrome-complex dye free ink and ethanol based ink"

•The printer uses the stainless enclosure body that is sanitary, robust and rust resistant, which conforms to the IP55 international safety standards for dust-proof, drip-proof devices.

The world's fastest, most comprehensive top-level high-speed printer.

•Maximum print speed 345 m/min (Font 5x5, 1 Line, Character pitch 1.5mm)

Large Panel

- •10.4-inch large TFT liquid crystal touch-panel display.
- Bright, easy-to-see and wide viewing angle.
- •The menu select system offers users exceptional ease and simplicity of use.



Memory Card

•A commonly available memory card can be used to store the copied "registered character data" and "print data". Uses the PC Card (Flash ATA Type II (8MB or above))

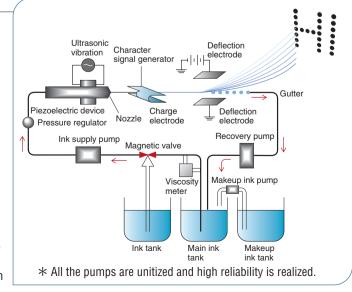
Principles of the Inkjet Printer

- •The ink pulled from the ink reservoir by the supply pump is set to specified pressure by a regulator, and supplied to the nozzle.
- •The ink is ejected from the nozzle and is subjected to vibrations by the piezoelectric device to create ink droplets.
- •The ink droplets are charged at the charge electrode to create
- •When the charged ink droplets pass through the deflection electrode, they will be deflected in the vertical direction in a quantity determined by the traveling speed and amount of charges applied to each droplet. As the object to be printed on moves in horizontal direction by a conveyer, characters will be
- •The ink droplets that are not used for printing are caught by the gutter and recovered into the main ink tank by the recovery
- •Ink used for printing is supplied from the main ink tank. Makeup ink is also supplied to the main ink tank to keep the fluid density constant. The inkjet printer runs best when maintaining optimum density control.



Viewing angle is drastically

increased



IJ Printer Selection Guide Character Size **Larger Small Characters** PXR-D BLK RED BLU GRN YEL **Small Characters** PXR-D BLK RED BLU GRN YEL BRN (nvisible P3 PXR-P **High-Speed Printing** PXR-H **Micro Characters** PXR-D BLK YEL



Small characters

Larger Small characters



PXR-H High-speed printing



Print Speed

PXR-P For pigmented ink

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2

• PXR-D for Small Characters



These models are suitable for wide variety of applications: food, beverage, cosmetics and pharmaceutical products.

Main Features

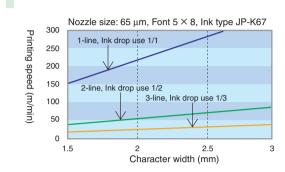
- · Various ink types and color inks can be used.
- Wide operating temperature.
 0 to 113°F/45 °C (JP-K67 and JP-K69)

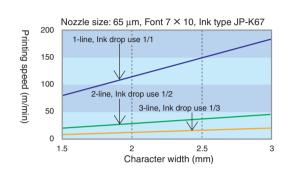


Printing Samples (Full Scale)

	Foi	nt	PXR-D260W	PXR-D460W
		5×5	0123456789ABCDEFGH	O12345678 ABCDEFGHI JKLMNOP@R STUVWXYZA
	PXR-I	5×7	0123456789ABCD	O12345678 ABCDEFGHI JKLMNOPQR STUVWXYZA
	PXR-D260W	7×10	0123456789 01234567 ABCDEFGH	0123456789012345678 ABCDEFGHIJKLMNOPQRS TUVWXYZABCDEFGHIJKL
PXR-D460W		12X16	0123456789ABC 0123456789ABC	01234 ABCDE
W		18×24	0123456789	
				789ABCDE
		24×32	012345678 012345678	AHRCDEL SAURCE

Printing speed





Standard Specifications

	Printing sp	pecifications			
Model	PXR-D260W PXR-D260WL		PXR-D460W PXR-D460WL		
Nozzle size	DZZIE SIZE 65 μm 65 μm		65 μm		
Max. print line number	Up to 2 Lines		Up to 4 Lines		
Maximum number of print characters (each line)	1 Line: Up to 240 characters 2 Line: Up to 120 characters	3 L	ne: Up to 240 characters 2 Line: Up to 120 characters ne: Up to 80 characters 4 Line: Up to 60 characters		
Dot matrix (horizontal × vertical)	1–2 Line: 5×5, 5×8 (or 5×7), 7×10 (o 1 Line:12×16	1-3	Line: 5×5, 5×8 (or 5×7) , 9×8 (or 9×7) 3 Line: 7×10 2 Line: 12×16, ne: 18×24, 24×32		
Character height		0.08-0.39 inches / 2-	10 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), bac Input Device: Touch panel, input sound p				
Screen language 2 language selectable:			tch, Italian, Spanish, Portuguese, Swedish, Iungarian, Bulgarian and Catalan available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 2,296				
Standard characters	Alphanumeric (A-Z, a-z, 0-9), symbols (27), space: Total 90				
Number of user pattern registration	Each dot matrix 128 patterns				
Print functions	Calendar, Counter, Message storage (18 Bar codes (code39, ITF, NW-7, EAN13/U (Alphabet : 49 characters, Numerals: 98	JPC-A, Code 128/EAN 128	, Data Matrix 2-D code		
Input signal	Print target detection, Printing stop, Rec	iprocative printing, Rotary	encoder pulse		
Output signal	Print ready, Fault, Warnig, Print in progre	ess or print end, Online			
Data interface	RS-232C at baud rates selectable up to	38.4 kbps			
	General sp	pecifications			
Operating temperature range	32-113 °F / 0-45 °C (JP-K67, K69 Ink)				
Humidity range	30-90 % R.H. (no condensation) Note:	When humidity is more that	n 85 %RH, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100-120 / 220-240V±10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable leng	th 13.1 ft / 4 m		
Approval	CE, UL, cUL, C-Tick, FCC, ICES	Overall size (width × he	15.7×11.4×20.3 inches 400×290×515 mm		
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg		
	Dime	nsions			
Canada	Duluthood	DVD DyenW	90 Degree Printhead - DVP - D±60WI		

Dimensions						
Console	Printhead : PXR - D*60W	90 Degree Printhead : PXR - D*60WL				
15.7° 290mm Printhead	9.0° 228mm	Nozzle size : 65μm 7.8° 198mm 1.78° 145mm				

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3

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6

•PXR-D for Micro Characters



These models are suitable for small markings, such as on small components, wire, etc. in the electric and electronic fields.

Main Features

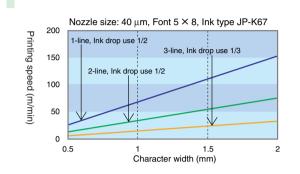
- Printing on products with extremely small marking areas is possible.
- These models are suitable for printing on small components.

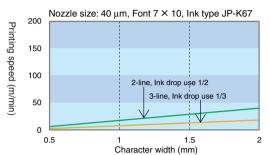


Printing Samples (Full Scale)

	Font	PXR-D440W PXR-D240W				
	5×5	O123456789ABCDEFGHIJKL	0123456789ABCDEFGHIJ KLMMOPQRSTUVWXYZABCD	O 123456789ABCDEFGH IJKLMNOP@RSTUVWXYZ 0123456789ABCDEFGH	O1234E6789ABCDEFGH IJKLMNOP@RSTUUWXYZ D123456789ABCDEFGH IJKLMNOP@RSTUVWXYZ	
PXR-I	5×7	0123456789ABCDEFGH	0123456789ABCDEFGH IJKLMNOPQRSTUVWXYZ	S 0123456789ABCEEFGH IJKLMNOFORSTUUWYZ 0123456789ABCDEFGH	4 0123456709ABCDEFGH T 17KTMNOPGRSTUVWXYZ 0123456789ABCDEFGH T 1JKLMNOPGRSTUVWXYZ	
PXR-D240W	7×10	0123456789ABCD	0123456789ABCD EFGHIJKLMNOPOR	O1234567890123456 ABCDEFGHIJKLMNOPC	7890123456789 RSTUVUXYZABCD RSTUVUXYZABCD	
PXR-	12×16	0123456789A	BCDEFG		0123456789 ABCDEFGHIJ	
PXR-D440W	18×24	0123456	789ABCD	E		
	24×32	01234	56789	A III		

Printing speed





Standard Specifications

	Printing s	pecifications			
Model	PXR-D240W			PXR-I	D440W
Nozzle size		40 إ	μm		
Max. print line number	Up to 2 Lines			Up to	4 Lines
Maximum number of print characters (each line)	1 Line: Up to 240 characters 2 Line: Up to 120 characters		3 Line: Up to 8	30 characters	2 Line: Up to 120 characters 4 Line: Up to 60 characters
Dot matrix (horizontal × vertical)	1–2 Line: 5×5, 5×8 (or 5×7), 7×10 (1 Line:12×16	(or 9×7, 9×8)	1-4 Line: 5×5 1-3 Line: 7×1 1-2 Line: 12× 1 Line: 18×24	0 16,	7) , 9×8 (or 9×7)
Character height		0.04 - 0.12 inc	hes / 1 – 3 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), ba Input Device: Touch panel, input sound				
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietnal Danish, Greek, Russian, Czech, Polish	mese, German, Fren , Arabic, Serbian, Tui	ch, Dutch, Italian, rkish, Hungarian,	, Spanish, Port Bulgarian and	tuguese, Swedish, I Catalan available
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to	1,514			
Standard characters	Alphanumeric (A-Z, a-z, 0-9), symbol	s (27), space: Total 9	90		
Number of user pattern registration	Each dot matrix 128 patterns				
Print functions	50 messages), Font mixture, Passwords security, UPC-A, Code128/EAN128), Data Matrix 2-D code 3 characters), Encoder function, Reciprocation printing, etc.				
Input signal	Print target detection, Printing stop, Re-	ciprocative printing, F	Rotary encoder p	ulse	
Output signal	Print ready, Fault, Warnig, Print in progr	ress or print end, On	line		
Data interface	RS-232C at baud rates selectable up to	38.4 kbps			
	General s	pecifications			
Operating temperature range	32-95 °F / 0-35 °C (JP-K67, K69 lnk)				
Humidity range	30-90 % R.H. (no condensation) Note:	: When humidity is more than 85 %RH, please purge inside of print head by air.			inside of print head by air.
Power supply (Automatic voltage selection)	AC 100-120 / 220-240V±10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable	e length	13.1 ft / 4	l m
Approval	CE, UL, cUL, C-Tick, FCC, ICES	Overall size (width × depth	n × height)		.4×20.3 inches 5×515 mm
Cabinet	Stainless Steel / IP55	Approximate w	eight	55 lbs / 2	5 kg
	Dime	ensions			
	Console		Printhea	ad : PXR - D	*40W
15.7°, 400mm	11.4* 290mm Printhead		1.57°	8.4° 213	

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BLK RED BLU GRN YEL

PXR-D for Larger Small-size Characters

The model is suitable for printing large characters on cartons, woods and buildings.

Main Features

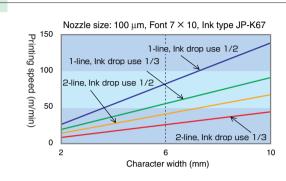
- The largest printing characters and print distance can be made among PXR series.
- Fast dry and high adhesion inks can be used with this model.

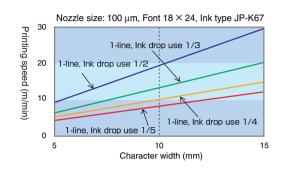


Printing Samples (Full Scale)

Font	PXR-I	D410W
FOIIL	Standard	Bold
7×10	0123456789ABCDE	0123456789ABCDE
7×10	0123456789ABCDE	0123456789ABCDE
12×16	01234ABCD	01234ABCD
12/10		
18×24	012ABCD	012ABCD
10/124	012ABC	012ABC
24×32	012AB	012AB
24/\02	012AB	012AB

Printing speed





Standard Specifications

	Printing :	specifications			
Model	PXR-D410W				
Nozzle size		100 μm			
Max. print line number		Up to 4 Lines			
Maximum number of print characters (each line)	1 Line: Up to 240 characters 2 Line: Up to 120 characters 3 Line: Up to 80 characters 4 Line: Up to 60 characters				
Dot matrix (horizontal × vertical)	1–3 Lin 1–2 Lin	1-4 Line: 5×5, 5×8 (or 5×7) , 9×8 (or 9×7) 1-3 Line: 7×10 1-2 Line: 12×16, 1 Line: 18×24, 24×32			
Character height		0.12 - 0.59 inches / 3 - 15 mm			
Display & input device	Display: TFT LCD (10.4 inch, color), be Input Device: Touch panel, input sound				
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietna Danish, Greek, Russian, Czech, Polisl	amese, German, French, Dutch, Italian n, Arabic, Serbian, Turkish, Hungarian,			
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	characters / s) Up to 468				
Standard characters	Alphanumeric (A-Z, a-z, 0-9), symbo	ols (27), space: Total 90			
Number of user pattern registration	Each dot matrix 128 patterns				
Print functions	Bar codes (code39, ITF, NW-7, EAN13	0 messages), Font mixture, Passwords security, IPC-A, Code128/EAN128), Data Matrix 2-D code characters), Encoder function, Reciprocation printing, etc.			
Input signal	Print target detection, Printing stop, Re	eciprocative printing, Rotary encoder p	ulse		
Output signal	Print ready, Fault, Warnig, Print in prog	gress or print end, Online			
Data interface	RS-232C at baud rates selectable up t	o 38.4 kbps			
	General :	specifications			
Operating temperature range	32-95 °F / 0-35 °C (JP-K67, K69 lnk)				
Humidity range	30-90 % R.H. (no condensation) Note	e: When humidity is more than 85 %RH	, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100-120 / 220-240V±10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable length	13.1 ft / 4 m		
Approval	CE, UL, cUL, C-Tick, FCC, ICES	Overall size (width × depth × height)	15.7×12.4×20.3 inches 400×315×515 mm		
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg		
	Dim	nensions			
	Console		Printhead		
15.7° 400mm	11.4" 290mm	1.57" 40mm	9.2° 233mm		

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PXR-P for Pigmented Ink

The model is suitable for various dark color surfaces.

Main Features

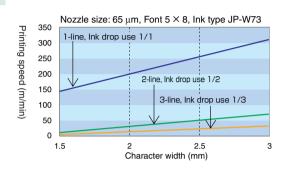
- · Whiteness and adhesion strength are improved by newly developed white-pigmented ink.
- New ink circulation system is sure to stir the pigment particles.

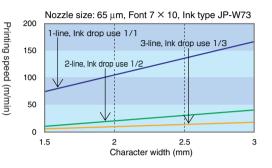


Printing Samples (Full Scale)

Font	PXR-P460W
5×5	O123456789A O1234 O12
5×7	01234567 01234 012345 ABCDEF NOPORS ABCDEF NOPORS
7×10	012345 0123 NOTE O123456789 NOTE O123456789 NOTE O123456789
12×16	0123456789ABCDEFGHIJ
18×24	0123456789ABCDEFGHIJ 0123456789ABCDEF
24×32	0123456789ABCDE

Printing speed





Standard Specifications · Nozzle size 65um

Standard Specifica	ations : Nozzle size 65 μ	ım		
	Printing sp	pecifications		
Model	PXR-P460W			
Nozzle size	65 μm			
Max. number of lines		Up to 4 Lines		
Maximum number of Characters per line	1 Line : Up to 240 characters 2 Line : Up to 120 characters 3 Line : Up to 80 characters 4 Line : Up to 60 characters			
Dot matrix (Horizontal × vertical)	1-4 Line : 5×5 , 5×8 (or 5×7), 9×8 (or 9×7) 1-3 Line : 7×10 1-2 Line : 12×16 1 Line : 18×24 , 24×32			
Character height		0.08 - 0.39 inches / 2-10 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), bar	cklight provided Input Device : Touch	panel, confirmation beep	
Screen language 2 language selectable	English, Chinese, Korean, Thai, Vietnam Greek, Russian, Czech, Polish, Arabic, S	English, Chinese, Korean, Thai, Vietnamese, German, French, Dutch, Italian, Spanish, Portuguese, Swedish, Danish, Greek, Russian, Czech, Polish, Arabic, Serbian, Turkish, Hungarian, Bulgarian and Catalan available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 2,083			
Standard characters	Alphanumeric (A-Z, a-z, 0-9), symbols (27) space : Total 90			
Number of logos / special character storage		Up to 128		
Print functions	Calendar, Counter, Message storage (15 Bar codes (Code 39, ITF, NW-7, EAN13 Data Matrix 2-D code (Alphabet : 49 cha	/ UPC-A, Code 128 / EAN128),	rds security, ncoder Function, Reciprocation printing, etc.	
Input signals	Print target detection, Printing stop, Rec	iprocative printing, Rotary encoder p	ulse	
Output signals	Print ready, Fault, Warning, Print in prog	ress or Print completed, Online		
Serial interface	RS-232C at baud rates selectable up to	38.4 kbps		
	General sp	ecifications		
Operating temperature range	32-104°F / 0-40 °C (JP-W73 lnk)			
Humidity range	30-90 % R.H.(no condensation) Note: V	When humidity is more than 85 %RH,	please purge inside of print head by air.	
Power supply (Automatic voltage selection)	AC 100-120 / 200-240 V±10 % 50/60 Hz 150 VA(AC Inlet)	Print head cable length	13.1 ft / 4m	
Approval	CE, UK, cUL, C-Tick, FCC, ICES	Overall size	15.7×12.4×20.3 inches	
Air supply	0.2-0.4 MPa	(width × depth × height)	400 × 315 × 515 mm	
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg	
	Dime	nsions		
	0 1		Bullette and	

Dimensions				
Console	Printhead			
15.7° 290mm Printhead	1.57° 228mm 40mm			

- *1. The print samples have been produced under ideal conditions. Print quality depends printing speed.
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• PXR-H for High-speed printing

The model meets high-speed printing needs on lines of electric wires, cans, etc.

Main Features

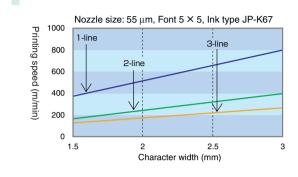
- Print quality has further improved by changes of nozzle control method.
- The world top class high-speed printing is possible

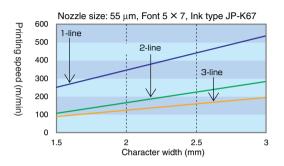


Printing Samples (Full Scale)

Font		PXR-H450W
	1 LINE	0123456789ABCDEFGHIJKLMN
5×5	2 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMNOP@RSTUVWX
	3 LINE	O183456789ABCDEFGHIJKLMN ABCDEFGHIJKLMNOP@RSTUVWX O183456789ABCDEFGHIJKLMN
	1 LINE	0123456789ABCDEFGHIJKLMN
5×7	2 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMNOPQRSTUVWX
0 / \\	3 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMNOPQRSTUVWX 0123456789ABCDEFGHIJKLMN
	4 LINE	0123456789ABCDEFGHIJKLMM ABCDEFGHIJKLMNOPGRSTUVWX 0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMNOPGRSTUVWX
12×16	1 LINE	

Printing speed





PXR SERIES

Standard Specifications

_	Printing s	pecifications			
Model		PXR-H450	PXR-H450W		
Nozzle size		55 μm			
Max. print line number	Up to 4 Lines				
Maximum number of print characters (each line)		Up to 240 characters Up to 80 characters		120 characters 60 characters	
Dot matrix (horizontal × vertical)	1-4 Line: 5×8 (or 5×7), 9×8 (or 9×7) 1-3 Line:5×5 1-2 Line:7×10 1 Line: 12×16				
Character height		0.08 - 0.26 inches / 2 - 6.5 mm			
Display & input device	Display: TFT LCD (10.4 inch, color), ba Input Device: Touch panel, input sound				
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietnal Danish, Greek, Russian, Czech, Polish				
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)		Up to 3,17	3		
Standard characters	Alphanumeric (A-Z, a-z, 0-9), symbol	s (27), space: Total 90			
Number of user pattern registration	Each dot matrix 128 patterns				
Print functions	50 messages), Font mixture, Passwords security, UPC-A, Code128/EAN128), g, etc.				
Input signal	Print target detection, Printing stop, Reciprocative printing, Rotary encoder pulse				
Output signal	Print ready, Fault, Warnig, Print in progr	ess or print end, Online			
Data interface	RS-232C at baud rates selectable up to	38.4 kbps			
	General s	pecifications			
Operating temperature range	32-104 °F / 0-40 °C (JP-K67, K69 Ink)			
Humidity range	30-90 % R.H. (no condensation) Note:	When humidity is more	han 85 %RH,	please purge inside of print head by air.	
Power supply (Automatic voltage selection)	AC 100-120 / 220-240V±10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable le	ngth	13.1 ft / 4 m	
Approval	CE, UL, cUL, C-Tick, FCC, ICES	Overall size (width × depth ×	height)	15.7×12.4×20.3 inches 400×315×515 mm	
Cabinet	Stainless Steel / IP55	Approximate weigh	it	55 lbs / 25 kg	
	Dime	ensions			
C	Console		Р	rinthead	
15.7° 400mm		1.57°	9.0° 228mm		

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PXR Series Software Options

Samples of Application PXR SERIES

IJ Printer is Applied for Large Varieties of Printing.

Addition of print columns (Total 1,000 characters) [SOP-02]

The number of printable characters can be increased from standard 240 characters (24 items) to 1,000 characters (100

Standard	240 (characters)	24 (items)
Addition	760 (characters)	76 (items)
Total	1,000 (characters)	100 (items)

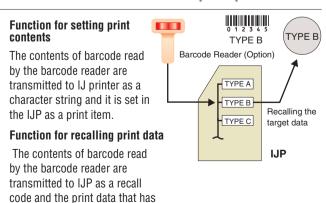
Special Communication Function A [SOP-04]

Function	Content
Output of print contents	Print content will be transmitted by serial communication when the printing is completed or on request.
Output of print completion code	Print completion code will be transmitted when the printing is completed.
Status output	The printer status will be output when any change occurs in status, or an inquiry of status is given from an external device.
Transmission of remote operation	Remote operations of start, stop, deflection voltage (ON/OFF) and fault clear are possible.
Transmission of clock initialization	Current time, calendar time control, calendar time and clock system (24/12-hour system) can be set.
Transmission of print data registration	Print data can be registered in the specified message number, and the registered print data can be recalled.

Barcode Reader Connection [SOP-08]

been assigned to the code is

recalled.



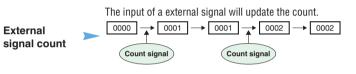
Addition of registered data elements (Total 300 data) [SOP-03]

The number of print data can be increased from standard 150 data to 300 data.

Standard	150 data
Addition	150 data
Total	300 data

External Signal Function A [SOP-05]

each printing



The input of a external signal will change the print contents at count digit to a preset value (reset value), and simultaneously reset the ongoing count figures to zero. $0123 \longrightarrow 0124 \longrightarrow 0125 \longrightarrow 0000 \longrightarrow 0001$ (When the reset Updating count for

Switching print contents using external signal

External signal reset

> This function reflects print contents that have previously been transmitted and then temporarily held in printing when external signal is input.

Calling up print data using external signal When an external signal is input, this function allows operator to recall previously registered print contents and print format, and set them as current print data.

Output during calendar updating

When IJ printer is in printable status and print contents are updated by internal calendar, a signal will be output to the optional terminal board.

When receiving external signal for count,

resetting, switching of print contents or data

calling, a signal will be output to the optional

Output notifying completion of signal input

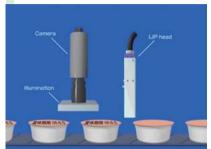
terminal board. **Communication Buffer** [SOP-16-03]

The print contents that are temporarily stored in the buffer are retrieved and printed one by one after the print ready status is set. The buffer capacity is 100 print items.

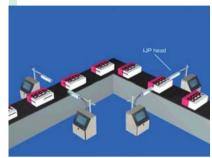
[Example of transmitting print contents constantly during printing]

External device	ABCDEFG
IJ printer	↓ ↓ ↓ ← Detection of print
Printing	ABCDEFG
[Example of tran	smitting collective print contents at the beginning]
External device	ABCDEFG
IJ printer	
Printing	ABCDEFG

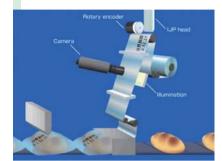
Cap label print inspection



Paper-pack print inspection



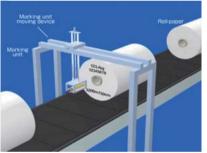
Film package print inspection



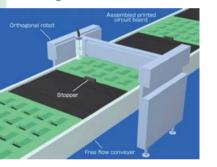
Traversing head automatic cup marking



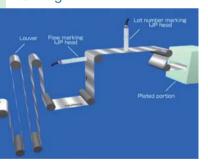
Roll-paper automatic marking



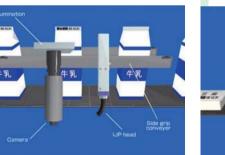
Assembled parts automatic marking



Steel-plate pitch print marking



Carton printing



Moisture/condensation removable printing



Various ink types and Color inks

All inks are based on RoHS.

Name of		Makeup ink		Adaptable nozzle & applicable ambient temperature (☑ : Adaptable)				Drying Light Stability			Primary applications	
Name of nk	Color	TYPE	Solvent base	PXR-D for Small Characters	PXR-D for Micro Characters	PXR-D for Larger small-size Characters	PXR-P for Pigmented Ink	PXR-H for High-speed printing	time at 68°F/ 20°C(s)*2	Test conditions	Result	Primary applications (Features)
IP-K26	Black	TH- TYPE B	MEK	32-95 °F/ 0-35 °C		32-95 °F/ 0-35 °C ☑		Fg	1 to 5	Same as 1 year in the sunshine	No change	Steel (Alkali soluble ink)
IP-K27	Black	TH- TYPE A	MEK	32-113 °F/ 0-45 °C ☑	32-95 °F/ 0-35 °C ☑				1 to 5	Same as 1 year in the sunshine	No change	
IP-R27	Red	TH- TYPE A	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑	1 to 5	Same as 8 months in the sunshine	Discolored but legible	Paper, metals, plastic (Bottle, PCB, Film, etc.)
P-B27	Blue	TH- TYPE C	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑			1 to 5	Same as 1 year in the sunshine	Discolored but legible	Electronic parts, glass container, etc.
P-G27	Green	TH- TYPE A	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑	1 to 5	Same as 8 months in the sunshine	No change	
P-K28	Black	TH- TYPE A	MEK	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Cans, PP-Sheet, PE-sheet, plastics (Retort-resistant, Wax-resistant)
P-K33	Black	TH-18	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑			32-95 °F/ 0-35 °C ✓	1 to 5	Same as 1 year in the sunshine	No change	Metals, plastics, PET laminated steel sheets (Non-migration)
P-K60*6	Black	TH-60	Ethanol	32-95 °F/ 0-35 °C ✓					3 to 10	Same as 1 year in the sunshine	Discolored but legible	Carton, painted container, metal, etc. (Suitable for applications dislike for odor)
P-K61	Black	TH-23	MEK	32-95 °F/ 0-35 °C ✓	32-95 °F/ 0-35 °C ✓			32-95 °F/ 0-35 °C ✓	1 to 5	Same as 1 year in the sunshine	No change	PP, PE
P-K62	Black	TH-18	MEK	32-95 °F/ 0-35 °C ✓	32-95 °F/ 0-35 °C ✓			32-95 °F/ 0-35 °C ✓	1 to 5	Same as 1 year in the sunshine	No change	Glass bottles, etc. (Resistant to condensation after printing)
P-F63* ⁶	Invisible	TH-63	MEK	32-95 °F/ 0-35 °C ☑					20 to 40	Same as 1 month in the sunshine	Reduced luminescence but legible*10	Paper, plastics, metals, etc. Special marking for production control(It is illuminated in ultraviolet rays after printing.)
P-T64	*9	TH-18	MEK	32-95 °F/ 0-35 °C ☑					1 to 5	-	-	Ceramic, metals, resistors, etc. (Heat resistant up to 1,300°C after printing)
P-K65	Black	TH-65	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑				10 to 13 for curing *7	Same as 1 year in the sunshine	No change	Printed circuit boards, electric parts, etc. (UV curable ink, highly resistant to organic solvents)
P-R65	Red	TH-65	MEK	32-95 °F/ 0-35 °C ☑					10 to 13 for curing *7	Same as 1 year in the sunshine	No change	Printed circuit boards, electric parts, etc. (UV curable ink, highly resistant to organic solvents)
P-K67	Black	TH- TYPE A	MEK	32-113 °F/ 0-45 °C	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-104 °F/ 0-40 °C ✓	1 to 5	Same as 1 year in the sunshine	No change	Paper, metals, plastic(Bottle, PCB, Film, etc.) Electronic parts, glass container, etc.
P-K68* ⁶	Black	TH- TYPE F	Ethanol	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ✓	15 to 30	Same as 1 year in the sunshine	Discolored but legible	Carton, painted container, metal, etc. (Suitable for applications dislike for odor)
P-K69	Black	TH-69	MEK	32-113 °F/ 0-45 °C ☑	32-95 °F/ 0-35 °C ✓	32-95 °F/ 0-35 °C ☑		32-104 °F/ 0-40 °C	1 to 5	Same as 1 year in the sunshine	No change	Can, paper, plastic container, pipe, steel plate (Chrome-complex dye free ink)
P-K70	Black	TH-70	MEK	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 6 months in the sunshine	Discolored but legible	Glass bottles, etc. (Alkali soluble ink, Sweating resitance on glass bottle)
P-T71	Red- purple to blue *11	TH-71	MEK	32-95 °F/ 0-35 °C ☑					1 to 5	Same as 6 months in the sunshine	Discolored but legible	Can, plastic bag, alminnum bag, plasti cup, etc. (Thermochromic ink in retort process)

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News		Makeup ink		Adaptable nozzle & applicable ambient temperature (☑: Adaptable)				Drying Light Stability			D. Constanting Con		
Name of ink	Color	TYPE	Solvent base	PXR-D for Small Characters	PXR-D for Micro Characters	PXR-D for Larger small-size Characters	PXR-P for Pigmented Ink	PXR-H for High-speed printing	time at 68°F/ 20°C(s)*2	Test conditions	Result	Primary applications (Features)	
JP-K72	Black	TH-18	MEK	32-104 °F/ 0-40 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-104 °F/ 0-40 °C ☑	1 to 5	Same as 1 year in the sunshine	Discolored but legible	Plastic container, etc. It is highly adhesive to plastics,especially PP.	
JP-W73	White	TH-73	MEK	32-104 °F/ 0-40 °C			32-104 °F/ 0-40 °C		5 to 7	Same as 1 year in the sunshine	No change	Rubber hoses, plastic pipes, metal, glass, electric/ electronic parts, etc. (White pigment ink)	
JP-T75	Black to Blue	TH-75	2-Pentanon Ethanol	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 2 weeks in the sunshine	Discolored but legible	Plastic, polypouches, tin-free steel, tin-plate, aluminum, glass, metal closures of various colors (Thermochromic ink in retort process)	
JP-R76	Pink	TH-76	MEK	32-95 °F/ 0-35 °C ☑					1 to 3	Same as 1 year in the sunshine	Discolored but legible	Glass, plastics, metals and coated paper.	
JP-B82	Blue	TH-82	MEK	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	2 to 3	Same as 1 year in the sunshine	Discolored but legible	Returnable bottles during the Cold Fill process (Washable with caustic wash)	
JP-K83	Black	TH-83	MEK	32-95 °F/ 0-35 °C ☑					*8	Same as 1 year in the sunshine	Discolored but legible	Glass, plastics, metals and coated paper (Heat curable ink, resistant to certain chemicals)	
JP-K84	Black	TH-84	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑			32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Metal, electric wire and film (Non-migration, retort-resistant and alcohol-resistant after printing)	
JP-B85 * ⁶	Blue	TH- TYPE C	MEK	32-95 °F/ 0-35 °C ☑					1 to 5	Same as 1 year in the sunshine	Discolored but legible	Glass, plastics, metals and coated paper.	
JP-K86	Black	TH-86	Acetone	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑			32-95 °F/ 0-35 °C ☑	0.3 to 0.6	Same as 1 year in the sunshine	No change	Glass, plastics, metals and coated paper.	
JP-K87	Black	TH-18	MEK	32-104 °F/ 0-40 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Glass, plastics, metals and coated paper (Resistant to Ethanol)	
JP-K88	Black	TH-71	MEK	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	Discolored but legible	Container made of PE such as food, the beverage, cosmetics, and the medicines.	
JP-W89	White	TH-73	MEK	32-104 °F/ 0-40 °C ☑			32-104 °F/ 0-40 °C		5 to 7	Same as 1 year in the sunshine	No change	Rubber hoses, plastic pipes, metal, glass, electric/ electronic parts, etc. (White pigment ink)	
JP-K90	Black	TH- TYPE E	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑			32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Metal, electric wire and film (Non-migration, retort-resistant and alcohol-resistant after printing)	
JP-Y91	Yellow	TH-84	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ✓	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Rubber hoses, PVC pipes,metal, glass,electric/ electronic parts, etc.	
JP-F92	Invisible	TH-18	MEK	32-95 °F/ 0-35 °C ☑					1 to 3	Same as 1 month in the sunshine	Reduced luminescence but legible *10	Paper, plastics, metals, etc. Special marking for production control. (It is illuminated in ultraviolet rays after printing.) Compared with the current JP-F63 ink, it dries fast. It has an excellent retort resistance and high visibility under UV light, also.	
JP-Y94	Yellow	TH- TYPE E	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑		1 to 5	Same as 1 year in the sunshine	No change	Rubber hoses, PVC pipes, metal, glass, electric/ electronic parts, etc. The visibility improved compared with the current JP-Y91.	
JP-B95	Vivid Blue	TH-18	MEK	32-95 °F/ 0-35 °C ☑					1 to 5	Same as 1 month in the sunshine	Discolored but legible	Glass, plastics, metals and coated paper. Chrome substance and methanol are not contained.	
JP-F97	Invisible	TH-71	MEK	32-95 °F/ 0-35 °C ☑					1 to 5	Same as 5 to 10 hours in the sunshine	Reduced luminescence but legible *10	Paper, cartons, and books (It is illuminated in red in ultraviolet rays after printing.)	
JP-K101	Black	TH-101	MEK	32-104 °F/ 0-40 °C					2 to 3	Same as 1 year in the sunshine	Discolored but legible	General purpose. Glass, plastics, metals and coated paper. Superior adhesion to coldfilled (+36°F or +2°C) glass bottles with a very thin layer of condensation.	

16

¹¹ MEK: Methyl Ethyl Kelone
2 Note that the drying speed varies depending on shapes and materials of the printing object, and environment.
3 Hue and adhesion of the ink should be confirmed by printing samples in advance.
Please ask Hitachi distributor when you need the printing samples.

^{*4} Please follow the law of the country when you use and dispose of the inks.
*5 Please read the Material Safety Data Sheet (MSDS) before you use the inks.

The MSDS can be obtained from the web site written on cover of this brochure, or inquire the nearest Hitachi distributors.

^{*6} Please supply clean and dry air from the air purge connection port at the rear of the console because the ink is hygroscopic. Please refer to the instruction manual for details.
*7 Typical hardening conditions: Metal halide lamp (2kW), Lamp light emission length 250nm (80W/cm)
*8 Requires heat curing at 300-350°F /149-177°C between 30-60 minutes to meet the solvent resistance required by the specified Military Standard.
*9 "Cobir of the printing varies depending on the heating temperature. Brown (room temperature), Gray (932°F/550°C), light blue (2,372°F/1,300°C)
*10 Luminescence will be resumed by painting of the regenerating solution.

Ink and Makeup Ink Consumption





Hitachi IJ printers reduce the running cost for printing.

Ink and makeup ink consumption

	Calculating exa	imples (Rough indication)
Ink quantity used by printing	=×	dot number x Number of characters x Production number wharacter x I print object x I month ···· (1)
Makeup ink consumption by vaporization	Mean vaporizing volume of makeup ink 1 hour	Operating hours 1 day Operating days 1 month
Ink quantity for periodic replacement = Ink quantity per replacement)		X Operation hours / day X Operating days / month Ink life (hours)

[Note]

- \bullet Above calculations are an estimate based on ambient temperature of 20°C
- Ink quantity for periodic replacement is a case when the operating hours is more than 200 hours.
- ★In case the operating hour is less than 200 hours, please use following formula to calculate the ink quantity for periodic replacement.

Ink quantity for periodic replacement = Ink quantity per replacement (cm³/replacement) × Ink life (hours)

 $\langle \text{Example} \rangle$ 65 μm nozzle, JP-K67 ink, 8 characters/printing, 5 \times 7 font, 6M pcs/month, 16 hours/day, 25 days/month operation

1,200hours = 598 (cm³/month) +134 (cm³/month) = 732 (cm³/month)

Makeup ink consumption by

Evaporation

= 2 + (Ink quantity for printhead cleaning)

= $5 (cm^3/hour) \times 16 (hours/day) \times 25 (days/month) + (Ink quantity for printhead cleaning)$

= 2,000 (cm³/month) + (Ink quantity for printhead cleaning)

Mean ink drop volume of each nozzle diameter

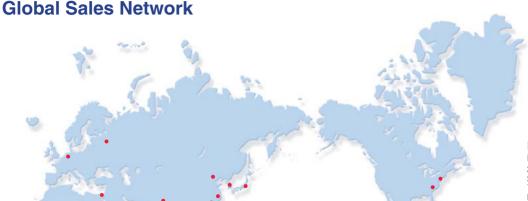
Nozzle diameter (μm)	40	55	65	100
Mean ink volume (cm³/dot)	2.8×10 ⁻⁷	5.3×10 ⁻⁷	8.3×10 ⁻⁷	3.4×10 ⁻⁶

Mean dot number of each alpha numeric font

Font	5×5	5×7,5×8	7×10	9×7	12×16	18×24	24×32
Mean dot number/character	11	15	23	15	78	154	288

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For further information, please contact your nearest sales representative.





Registration number: JACO-EC99J2009 Registration date: July 22, 1996

The Energy Saving Systems Division (Taga Division) of Hitachi Industrial Equipment Systems Co., Ltd. obtained ISO 14001 certification, an international standard for environmental management systems.



Registration number: JQA-QMA12087 Registration date: April 1, 2005

The Energy Saving Systems Division (Taga Division) of Hitachi Industrial Equipment Systems Co., Ltd. obtained international standard ISO 9001 certification for the quality assurance of the hoist motor block contained in this brochure.