

Contactless Label Rewriting System

RICOH
imagine. change.

RICOH Rewritable Laser System



Cost and
process
savings

Reliable
label
operation

Green
operation

Contactless printing/erasing solution made possible with laser technology. Realizes labor cost reduction by automated label reprinting.

Ricoh's solution can write and rewrite up to 1,000 times using a laser diode system and specialized rewritable laser media. Rewritable laser media pre-attached on tote containers absorbs laser beam that generates heat to print, erase reprint both human- and machine-readable information on it. * Our research

Features

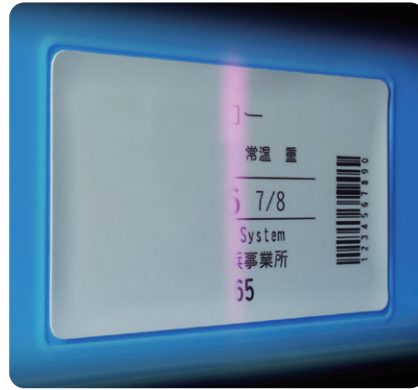
Rewritable approximately 1,000 times*

The label can be rewritten approximately 1,000 times* without replacing it.

* Our research

Can be used outdoors

The label has light resistance equivalent to 5 years and can be used repeatedly, even in outdoor for logistics applications.



Please refer to the website for product videos and key specifications.

<https://industry.ricoh.com/en/dtr>

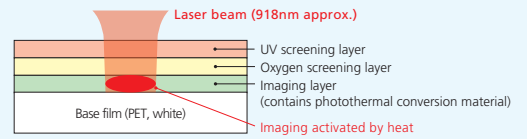


Rewritable Laser Media

The unique features of the laser printing method realizes long-term reliable operation.

[Layer structure]

After passing through the upper layers, the laser beam reaches to the imaging layer to trigger thermal chemical reaction. This unique process allows the media to have a thick UV and oxygen screening layer on the top of imaging layer. This results in long product life even with outdoor applications.



[Comparison in aging by light]

Compared to the conventional rewritable media for thermal heads, which deteriorates after several weeks of outdoor use, the latest laser media has significantly improved durability.

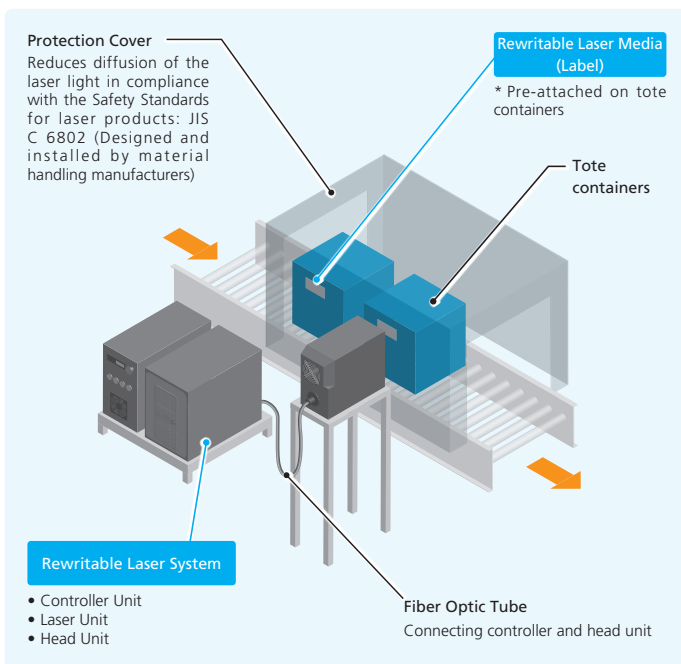


	Rewritable Laser Media	Conventional rewritable media
At the starting time of printing		
After 5 years (accelerated test)		

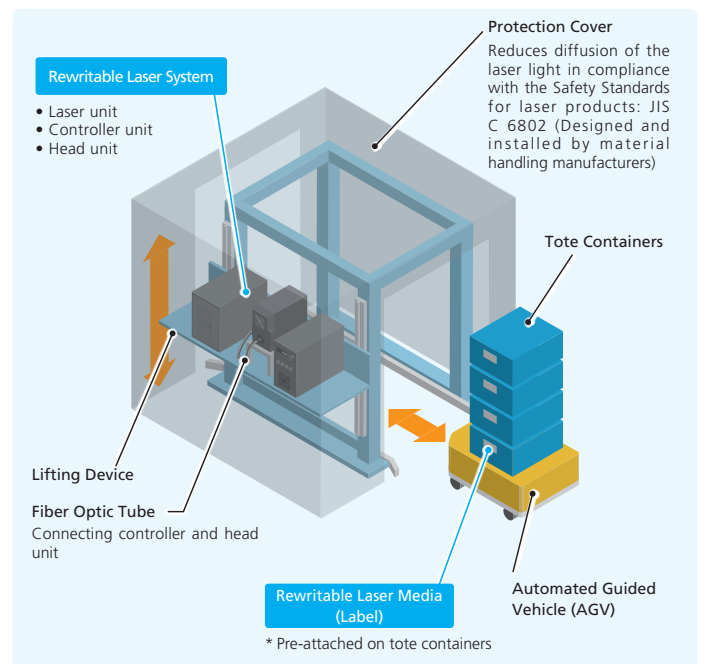
Advanced light resistance allows outdoor use for approximately 5 years

System Configuration Examples

Tote containers transported on conveyor line



Stacked tote containers on AGVs



* Reference only. Other configurations are possible accordingly.

* If Rewritable Laser System is to be used with lifting device, an additional evaluation is required.

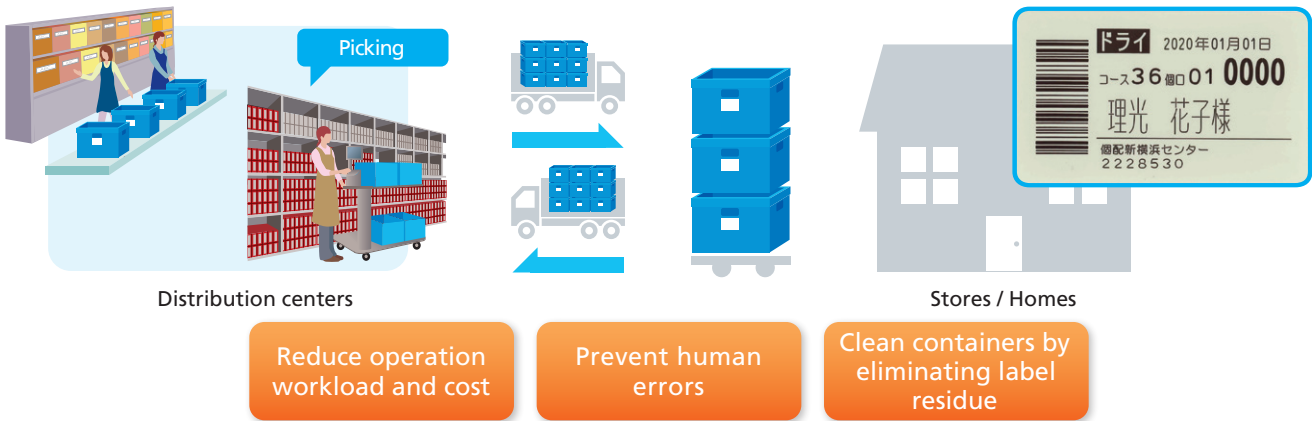
Realize labor cost savings with improved operational efficiency when using a fully automated relabeling process.

Increase eco-friendliness with reduced waste.

Conventional labeling requires hand-written or printed labels to be disposed as information is updated. Rewritable label makes both human- and machine-readable information rewritten without removing old label. It helps improve operational efficiency in circulating warehouse applications.

Application Example 1

Warehouse

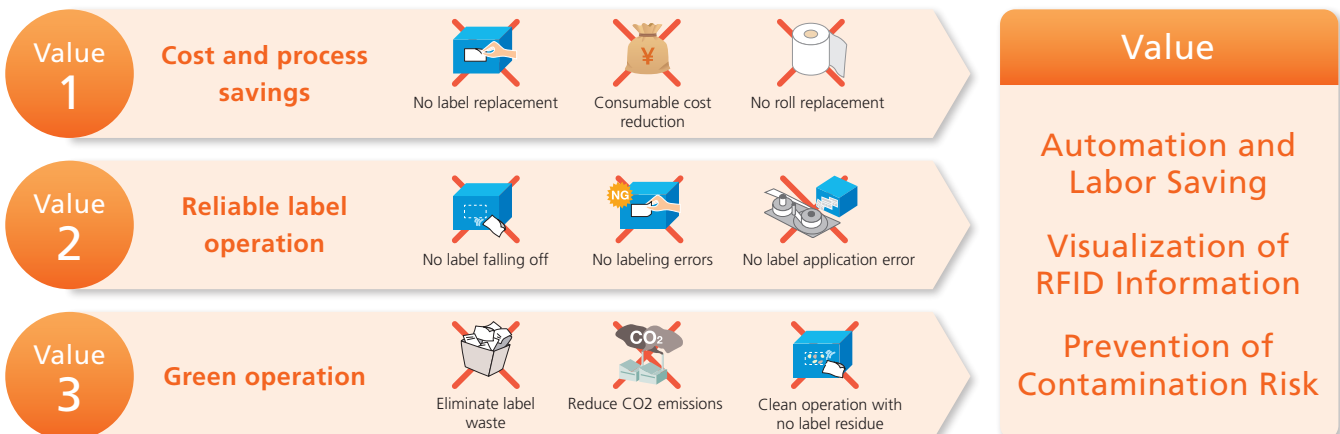


Application Example 2

Manufacturing



We solve problems of disposable labels.



Product Appearance

Rewritable Laser Marker



Head Unit

Laser Unit

Controller Unit

Rewritable Laser Media



- Type A ▶ 50×85mm (1.9"×3.3")
- Type B ▶ 60×92mm (2.3"×3.6")
- Type C ▶ 80×115mm (3.1"×4.5")

Product Specifications

Rewritable Laser Marker

Laser	Laser output	Printing	Class 4 19W
	Erasing	Class 4 125W	
	Wavelength		918nm
Printing/erasing area			110×110mm
Print contents	Characters	Double-byte character : Alphanumeric, Hiragana, Katakana, Symbol	
		Kanji (JIS 1st and JIS 2nd level), IBM extended characters	
		Single-byte character : Alphanumeric, Katakana, Symbol	
	Decorative characters	Bold characters, Reverse characters, Open face characters	
	Character size*1	2mm~30mm	
Barcode type	Type	Code39, Code128, ITF, NW-7, GS1-128, UPC-A, EAN-13	
	Barcode data capacity	Up to 46 digits	
	Two-dimensional code type	Type	QR code (model 2), DataMatrix
	QR code data capacity	Up to 300 characters (Kanji)	
Printing time			Depends on data amount
Erase time*2			2.1 seconds
Line width*3			0.25mm
Interface	Data communication	Network	10/100BASE-TX/1000BASE-T, Socket communication
	Control	Character code	Shift JIS (S-JIS), UTF-8
		Terminal type	Round crimp terminal
Standard work distance			114mm
Work distance variation range	With position compensation*4	114mm±10mm	
	Without position compensation	114mm±3mm	

Power consumption	Printing	160VA±30VA
	Erasing	450VA±50VA
	Waiting	120VA±30VA
Power supply voltage		AC100V±10% 50/60Hz
External dimensions	Head unit	W:162mm D:330mm H:280mm (excluding protrusions) (W:6.3" D:13.0" H:11.0")
	Laser unit	W:250mm D:430mm H:350mm (excluding protrusions) (W:9.8" D:16.9" H:13.8")
	Controller unit	W:200mm D:430mm H:350mm (excluding protrusions) (W:7.9" D:16.9" H:13.8")
Fiber optic tube length (distance between head unit and laser unit)		2.0m
Weight	Head unit	18.5kg±0.5kg (40.8lbs±1.1lbs)
	Laser unit	14.5kg±0.5kg (31.9lbs±1.1lbs)
	Controller unit	12.0kg±0.5kg (26.4lbs±1.1lbs)
Operation temperature		0°C~40°C (without condensation or freezing)
Operation humidity		35%RH~80%RH (without condensation or freezing)
Noise		Less than 80db
Operation altitude		In door, up to 1000m high
Protective structure	Head unit	IP65
	Laser unit	IP5X (Dust proof only)
	Controller unit	IP5X (Dust proof only)
Standard (radio safety, product safety, laser safety)		IEC61010-1:2010, IEC60825-1:2014, EN61326-1:2013, IEC61326-1:2012, JIS C. 1010-1:2019, JIS C. 6802:2014

*1 Indicates the range of character size that can be set. Due to printing conditions, small characters may not be reproduced sufficiently. Recommended font size is 4mm or more. *2 With Type A media erased at 22°C. The erase time varies depending on the operation temperature. *3 Reference only. May vary depending on printing condition. *4 With the distance correction function activated. * Product specifications may change without notice. Last update: July 1, 2022.

Rewritable Laser Media

Classification	Item	Specification	Test method	
Basic properties	Thickness	150 ±15µm	Ricoh test method	
	Thickness (including liner)	220±22µm		
	Base material	PET		
Imaging/erasing properties	Imaging color	Black	Visual inspection	
	Background density	0.25 or less		
	Image density	1.0 or higher		
	Density after erasing	Background density +0.03 or less		
Image preservation properties	Light resistance	Density after printing	1.0 or higher	Ricoh test method
		Density after erasing	Background density +0.03 or less	
	Water resistance	Density after printing	1.0 or higher	
		Density after erasing	Background density +0.03 or less	
Adhesive properties	0°C	5N / 25mm or higher		
	23°C50%			
	35°C85%			

* Unit of Product Warranty: 1 box. * Operational conditions: 0~35°C, 35°C85%RH without condensation. * Storage conditions: Avoid Direct sunlight and humidity. Keep it indoor (0~40°C, 30°C85%RH without condensation). * Warranty period: 12 months after shipment from Ricoh for the unpacked product in the above conditions. * Product specifications may change without notice. Last update: July 1, 2022.

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For safety use

- Before using the product, please read the instruction manual carefully and use it correctly. • Use the correct power supply and voltage as indicated.
- Do not use or install the product in a place where there is a lot of water, moisture, dust, or oil smoke. • Make sure to connect to ground. In case of malfunction or leakage, there is a possibility of electric shock. • This product is equivalent to a JIS Class 4 laser. Do not look at or touch the direct laser beam or its reflected light.

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