LABEL INSPECTION SOLUTIONS

ONE STATION INSPECTION

IMAVISION

ONE STATION INSPECTION

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COMPANY PROFILE

Integrity First

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Having no integrity easily ruins any business,while strong sense of responsibility can help us succeed eventually. Being honest and having strong moral principles are at the heart of our culture. We firmly believe that sincerity will lead to mutual benefit and keeping promises is the foundation of our characteristics and business ethics.

People Oriented

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We respect human values and regard employees as our most valuable assets and the primary source of competitive advantage. All of our efforts aim to finally serve people, and all of our profits and prestige are mere rewards or praise coming from the process of serving people. We carefully hear voices of each partner, and are willing to become a platform to realize those ideas. We really enjoy seeing customers' ideas come to life, employees' dreams are turned into realities, and such kind of successful stories spread throughout the country and even the whole world.

Our Vision

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We support social development by using machine vision technologies.

Continuous Innovation

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From the date of establishment, "Making innovation part of our DNA" has always been the essential philosophy we adhere to. In the past 20 years, we created so many "breakthroughs" which have already been recorded in the machine vision history of China. With a global vision and a natural sense of urgency, however, we clearly understand that "innovation capability" is the soul of a hi-tech company and the only way leading to cutting-edge technologies and products which deserve customers' trust and indeed improve productivity.

Our Mission

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Based upon talented people and cutting-edge technologies, our business is focused around the advancement and application of technologies regarding machine vision, images processing and computer graphics. Our mission is to create, develop, produce and sell state-of-the-art machine vision components as well as solutions which aim to help people from various industries in the global market increase efficiency, reduce cost and improve quality. Ensuring our values are embedded in our customers' success, which helps us better meet the expectations of society.

During the past 20 years, we have delivered a range of solutions for industries such as printing, packing, electronics manufacturing, traffic management, and many more.

Honestly following our fundamental ideas of putting customer first, making innovations and getting actions rather than speech, we always keep our commitment to all partners –consistently offering leading technologies, superior products and outstanding services.
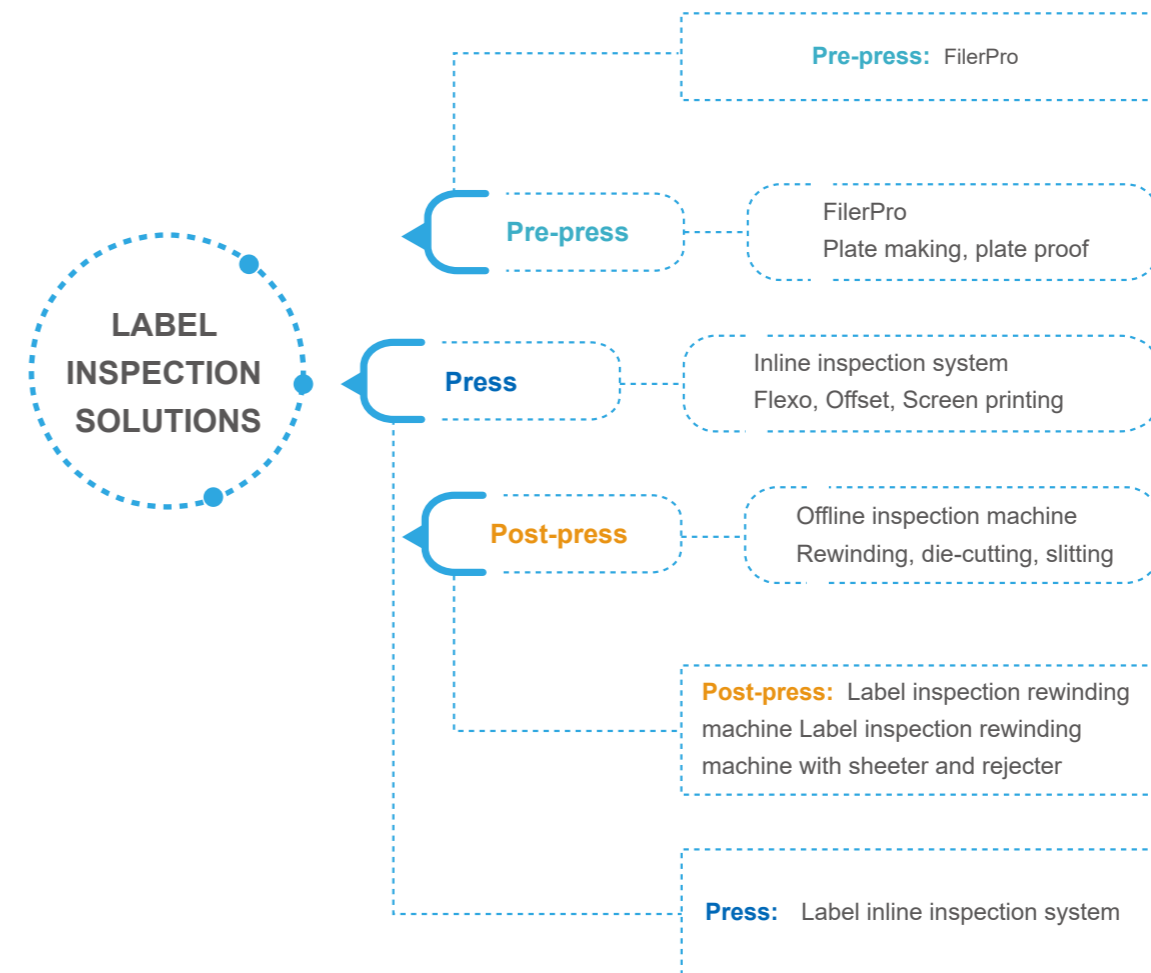
HIGH PERFORMANCE AND RELIABLE HARDWARE

Being a know-how company with a long history in machine vision industry, Daheng deserves trusts from counterparts all over the world and has established close cooperation with world-famous companies like Teledyne DALSA, Siemens, Chromasens, Schneider Kreuznach , MVTec, FESTO, to mention a few, which helps our customers directly enjoy the latest products with state-of- the-art technologies and significantly decrease the total cost accordingly.

LABEL INSPECTION SOLUTIONS

Daheng label inspection solution covers the process of whole printing, applied to reduce the waste of production, prevent the defective labels from being delivered to customers. The solution is introduced to improve the quality and economic performance for printing companies.

Pre-press: FilerPro

Pre-press
FilerPro
Plate making, plate proof

LABEL INSPECTION SOLUTIONS

Press
Inline inspection system
Flexo, Offset, Screen printing

Post-press
Offline inspection machine
Rewinding, die-cutting, slitting

Post-press: Label inspection rewinding machine Label inspection rewinding machine with sheeter and rejecter

Press: Label inline inspection system

FILERPRO-PRE-PRESS ARTWORK PROOFING SOFTWARE

▶ PRODUCT OVERVIEW

FilerPro is used in artwork designing process in pre-press department of printing companies to assist designer to monitor any changes made to artwork efficiently and lower chances of mistakes in designing.

▶ PRODUCT FEATURES

Comparison between customer's file and artwork.

Comparison between revised artwork and previous artwork.

Comparison between single-up file and multiple-up file.

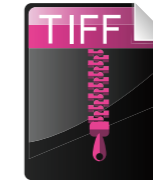## ▶ COMPOSITION

One set of scanner and high-performance laptop.

▶ SUPPORTED FORMAT

AI	PDF	TIFF	BMP	JPG

▶ PRODUCT FEATURES

Graphics
- Halftone dot shifts.
- Missing, added and shifted graphical elements.
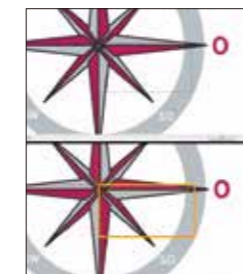- Incorrect transparencies.

Optional function
- Barcode, 2D code.
- Braille.
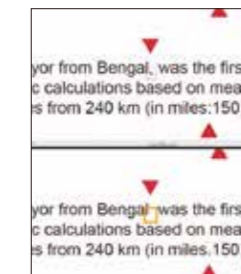- Color monitor, separation of spot color.

Texts
- Missing parts of letters; Filled in letters.
- Font, bold, italic, space, underline, and special characters.
- Color deviations.

- Color deviation
- Incorrect design
- Missing comma
- Missing stroke

- Undesired capital
- Undesired font
- Undesired italic
- Wrong text

▶ INSPECTION REPORT

- 5 types of inspection report can be generated.
- 2 common types: 1st type of report only includes the confirmed real defects, which is used to report to QC manager; 2nd type of report includes all suspicious defects, which is used for archive.

LABEL INLINE INSPECTION SYSTEM

Label inline inspection system is installed on full-rotary, flexo press, gravure press and offset press machine to real time inspect print quality. Inspection system can be applied for quality control during printing process to avoid continuous waste. When defects are detected, system will alert operator with sound and light.

▶ PRODUCT FEATURES

Automatic create template:

Software can analyze the regions of pattern and variable code, and create template automatically.

Adjustable inspection parameters:

Software supports to set up inspection parameters for flexible quality control.

Powerful variable code inspection:

Software can inspect QR code, barcode and numeric character in various fonts.

Data management:

System can store defect information and classify by types.

Mark options:

Sticker device, ink-jet device and marker pen are optional.

▶ APPLICATION

Inspection system can be installed on flexo press machine, gravure press machine, and offset press machine, etc.

▶ TECHNICAL SPECIFICATION

Item	Label inline inspection system
Max. inspection speed	200m/min
Max. inspection width	330mm
Imaging resolution	4K color camera: 0.08mm(width)×0.08mm(length)
Inspected content	**Variable code** ● Barcode, Supervision code ● 2D code：QR, DM, PDF417 ● Numeric character **Print quality**
Inspected defects	Variable code defects：repetition, wrong code, bad code, absence, deviation, etc. Print defects：dirt, missing print, mis-registration, etc.
Min. size of supervision code	Width of thinnest line ≥0.3mm
Min. size of 2D code	8mm×8mm (Min. width and height of square ≥0.3mm)
Min. size of number	2mm×1.5mm
Min. size of print defect	0.2mm²
Operation system	Windows 7 64bit
Network	GigE
Environment parameters	
Environment temperature	-5℃ to 35℃(23℉ to 95℉)
Environment humidity	10% to 80%
Power supply	200-240V/50-60Hz/4.5A

LABEL INSPECTION REWINDING MACHINE WITH SHEETER AND REJECTER

Defect handling:
Reject defective sheet, and acceptable sheets collect by stacks.

Smart print quality inspection:
Algorithm can extract different color areas, and inspect each layer automatically.

The most powerful variable code inspection:
Support sequence code, ink-jet code, related code inspection.

Data files:
System can store data and generate files by each die-cutting sheet.

▶ **TECHNICAL SPECIFICATION**

▶ PRODUCT FEATURES

Two inspection modes:

✔ **Roll-to-roll:** in this mode, inspection system work as the standard label inspection rewinding machine. During inspection, system stops the defects at center of operation table for manual replacement. The finished product is rotary labels.

✔ **Roll-to-sheet:** in this mode, when defect is inspected, system will reject the defective sheet after die-cutting, and collect acceptable sheets by stacks. The machine does not stop or slow down in the whole process, the operator only need to collect good product stacks manually.

Item	Name	Specification
Inspection parameter	Max. inspection width	330mm
	Imaging resolution	4K color camera: 0.08mm(W)×0.08mm(L)
	Max. inspection speed	180m/min (Roll to roll)
	Inspected print defects	Dirt, missing print, deviation, poor trash-cleaning, color variance, mis-registration, etc.
	Min. defect size	High contrast: 0.03mm^2 Low contrast: 0.1mm^2
	Min. inspected registration	±0.1mm
	Color variance	△E ≧3
	Variable code type	1、Numeric character； 2、Barcode； 3、2D code：QR、DM、PDF417
	Inspected coding rule of variable code	Inspected coding rule: sequence code, ink-jet code, related code; Inspected code defect: wrong code, repetition, absence, bad code
sheeting parameter	Max web width	330mm
	Sheeting speed	300pcs/min
	Sheeting length	100mm~500mm

LABEL INSPECTION REWINDING MACHINE

Daheng label inspection rewinding machine performs full-width inspection for rotary labels. Industrial high-speed color camera is equipped to scan the label, inspect the print quality and variable code, and alert when print defects and variable code defects are found. Inspection software can be customized to store anti-fake data and images. When defect is detected, inspection system will alert with light and sound, and support to configure appropriate method to deal with defect.

▶ SUPPORTING 3 TYPES OF INSPECTION MODES FOR VARIABLE CODE

Sequence inspection

Load data file, validate the code one by one in accordance with code sequence in data file Inspecting repetition, wrong code, absence, bad code.

Existence inspection

Load data file, inspect whether the code on the label is in data file Inspecting repetition, wrong code, absence, bad code.

Readability inspection

Do not load data file, only check if the code can be read. Inspecting repetition and bad code.

▶ SUPPORT TO

- Inspect sequence code, inkjet code, and related code.
- Record and generate data files for each slitting rolls.
- Generate statistic report.
- Equip defect review machines.
- Equip label sticker, ink-jet marker as optional marking devices.

▶ ANTI-FAKE IMAGE STORAGE

Anti-fake label contains randomly-aligned fibers to correspond with 2D code, which is irreproducible relation between fiber alignment and 2D code. Inspection system needs to capture the image of fibers, and decrypt 2D code, correlate the image with 2D code, and then upload to server. Customer uses mobile to scan the 2D code on the package, and connect internet to acquire the corresponding fiber-featured image, so customer can compare the feature of fibers and verify the authenticity of products.

Production

Fiber alignment corresponds with 2D code → Inspect and store images → Uploading images to server

Circulation

Scanning 2D code →
Verifying authenticity ←
Scanning 2D code

Connecting website
Acquiring the corresponded image

TYPICAL LABELS

▶ TECHNICAL SPECIFICATION

Variable code and Print Inspection Rewinding Machine		
Model	DH-FJ330-4K	DH-FJ330-8K
Max. inspection width	330mm	
Mode	Color	
Imaging resolution	Horizontal/vertical: 0.08mm/pixel	Horizontal/vertical: 0.04mm/pixel
Max. inspection speed	200m/min	100m/min
JPG saving speed	≥ 45m/min	≥ 35m/min
Inspected print defects	Dirt, missing print, deviation, poor trash-cleaning, color variance, mis-registration, etc.	
Min. defect size	High contrast: 0.03mm^2 Low contrast: 0.1mm^2	High contrast: 0.01mm^2 Low contrast: 0.05mm^2
Min. inspected registration	±0.1mm	±0.05mm
Color variance	△E ≧3	
Variable code type	Numeric character; Barcode ; 2D code: QR、DM、PDF417	
Inspected coding rule of variable code	Inspected coding rule: sequence code, ink-jet code, related code; Inspected code defect: wrong code, repetition, code missing and bad code.	
Min. size of recognizable code	Numeric character: 2mm*1.5mm Barcode: thinnest line ≥0.3mm 2D code: 8mm*8mm (Min. width and height of cube ≥0.3mm)	Numeric character: 1mm*0.8mm Barcode: thinnest line ≥0.2mm 2D code: 6mm*6mm (Min. width and height of cube ≥0.2mm)
Operation system	Windows 7 64bit	
Network	GigE	

Reeler parameters	
Max. mechanical speed	200m/min
Max. feeding width	330mm
Running roller width	350mm
Max. unwinding diameter	700mm
Max. rewinding diameter	500mm
Coiling mode	Suitable for internal and external
Unwinding and rewinding core	76mm
Slitting accuracy	±0.25mm
Working power supply	AC380/50HZ /Three phase four wire
Dimension(L×W×H)	2,800mm×1,400mm×1,500mm
Air pressure	100 p.s.i

▶ ANTI-FAKE LABELS

▶ ELECTRONIC LABELS

▶ VARIABLE DATA LABELS

TYPICAL DEFECTS

▶ **CHEMICAL AND FOOD LABELS**

▶ **PHARMACEUTICAL LABELS**
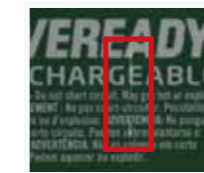
▶ **PRINT DEFECTS**

Missing print	Dirt	Deviation	Poor trash cleaning	Varnish deviation

Missing punctuation	Wrinkles	Missing print	Mis-registration	Lamination wrinkle

▶ **PRINT DEFECTS**

Poor printing	Dirt

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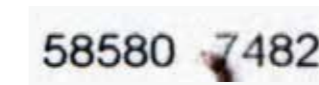
Missing print	Dirt	Poor printing

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