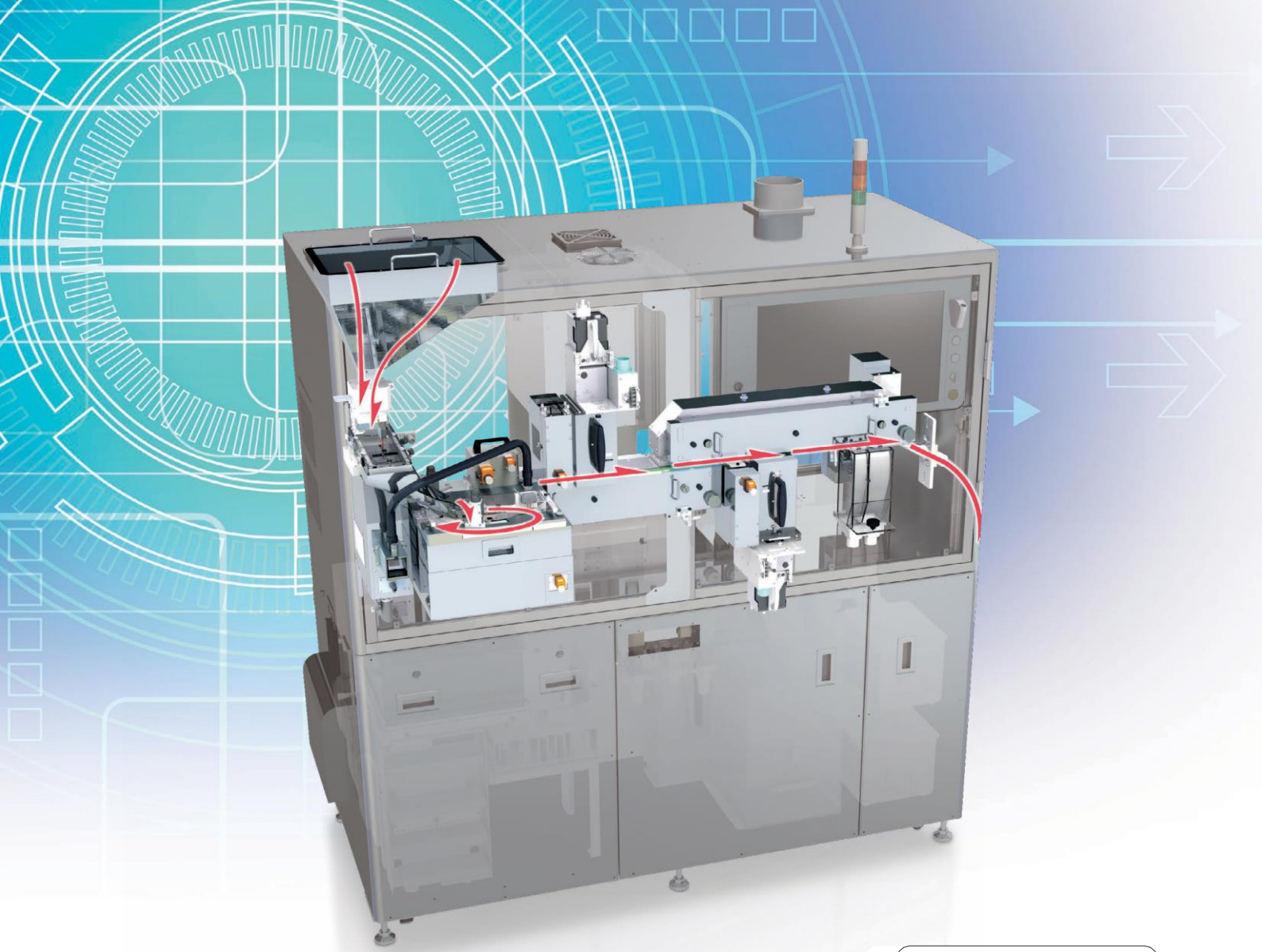
viswill

PHARMA TECHNOLOGY

T/CVIS-NSR

TABLET & CAPSULE VISUAL INSPECTION SYSTEM

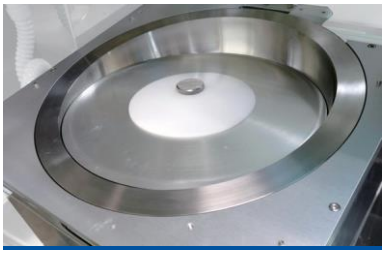
Revolutionising the Global Standard



UNIT
INTRODUCTION


Hopper


Vibratory feeder


Flow-control subsystem


Face/side lighting unit and 3D inspection


Rejection unit

T/CVIS-NSR

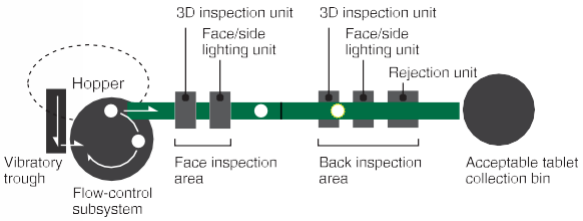
TABLET & CAPSULE VISUAL INSPECTION SYSTEM

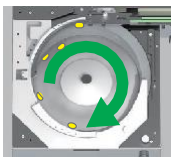
Higher Processing Capacity,

User-Friendly Operation and Easy Cleaning

Processing Capacity

High processing capacity with new flow-control subsystem



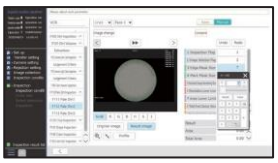

Disk track rotary system

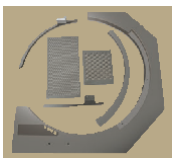

Suction conveyor system

- New disk track rotary system for tablet feeding
- Stable transfer with high processing capacity
- Improved inspection speed up to 50% for circular tablets and 80% for shaped tablets (compared with the conventional model)

User Friendly

Easy machine operation


Display inspection status on tablet image

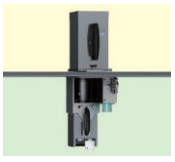

Change over parts

- Easy recipe making
- Automatic setting for all volumes
  (for Feeder, flow-control subsystem, suction blower for conveyor and powder collection)
- No adjustment for focus, iris needed
- Inspection parameters displayed in real time
  Enhanced easiness in optimum parameter settings

Easy Cleaning

Easy assembly and cleaning


All units are removed for cleaning


Complete separation of camera and optical units

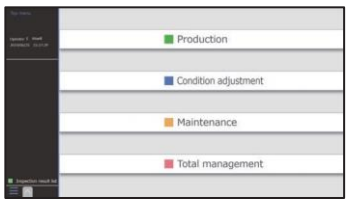
- Complete separation of camera and optical units from tablet transfer and inspection area

Intuitive Operation

EASY

ALL Data stored

EASY OPERATION



Home screen

Inspection screen

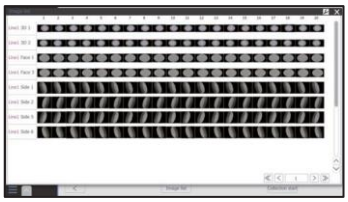
EASY SET UP

Set up video available

Real time view on tablet transfer

DATA ANALYSIS

Graph of the output and defect rate



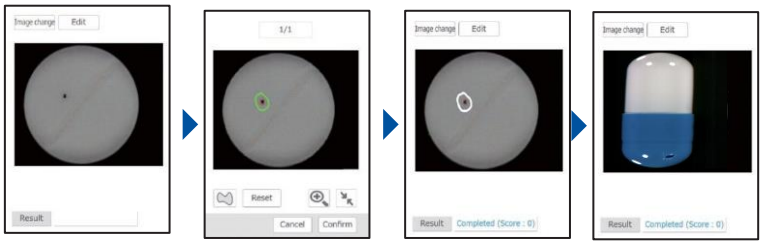
Backup of all defect images

Initial test result displayed

EASY RECIPE SETTING

Easy inspection of defect images

Past lot data analysis and comparison

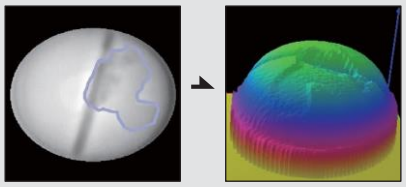


Easy setting

3D inspection: the new era of visual inspection

Rejection of coating defect

Shape characteristics of tabletsurfaces captured in 3D images



3D image of coating defect

Solid display

Inspection for face chipping of spotted tablet

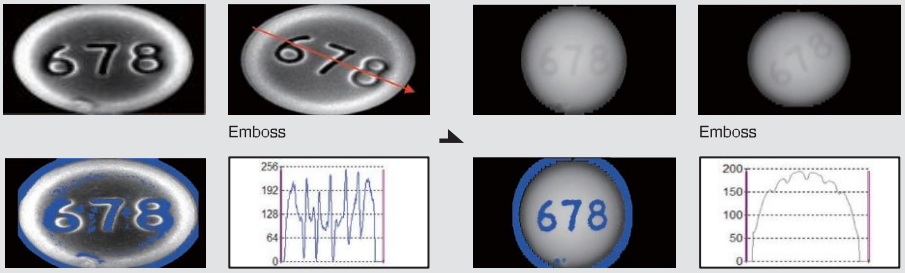
No influence from tablet surface pattern

Chipped tablet with surface pattern

3D image

Comparison with conventional ring lighting

Only characteristics of emboss and chipped tablets are captured



Conventional ring lighting image

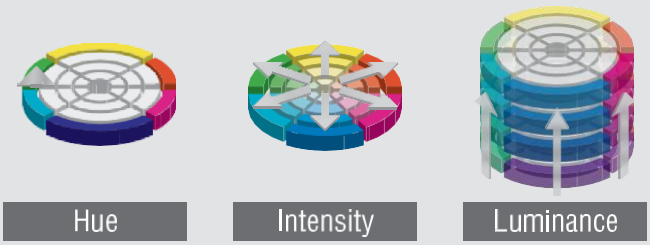
Ring lighting image and waveform

3D image

3D image and waveform

Make accurate color inspection possible with color camera

Color cameras with highly precise color resolution readily detect color defects based on the accurate feature extraction.



Hue

Intensity

Luminance

Camera image

Monochrome camera

Monochrome camera with optical filters

Color camera

Improved emboss/printing inspection

Our algorithms allows to inspect each character and to reject emboss/printing defects.

Emboss chipping

Wrong emboss

Printing missing

Dirt around printing

Printing defect

T/CVIS-NSR Standard Specifications

Item			Specifications
Tablet Inspection functions		Applicable	Uncoated, film-coated, sugar-coated tablets; tablets with printed mark on one or both side: scored tablets; tablets with engraved mark
		Tablet size	Round tablets: 5-12mm in diameter and 2-8 mm in thickness. Shaped tablets: 5-12 mm in width, 2-8 mm in thickness, 5-21 mm in length. Non-Standard shape tablet is also applicable.
		Inspected items	Dirt, scratch, adherence of foreign particle, crack, chip, deformation, different colour, coating and emboss defects, etc.
		Inspected surfaces	Face, back, and side. Top, bottom and side.
		Inspection accuracy	Detection of defects equivalent to a 50µm square or larger black speck, and 1 mm² size chip.
		Processing capacity	300,000 tablets/hour (actual value; dia. 6 mm). The value varies according to the size & shape of tablets.
Capsule Inspection functions		Applicable	Single Colour or two colours hard capsule, Printed capsule, Soft gelatine capsules (TBD capsule with transparent in cap/body or capsule with low brightness)
		Capsule size	Hard capsules: 0 - 5 size, Soft capsules: 5-8 mm in diameter, 5-21 mm in length
		Inspected items	Bright and Darkness: dirt, adherence of foreign particle, scratch, crack, hole, etc Shape: collapsed, dent, length, double capping, etc Colour: different product, discoloured, etc Head of capsule: dirt, adherence of foreign particle, crack, scratch, collapse
		Inspected surfaces	Cap/Body whole direction and surface, Head of capsule
		Inspection accuracy	Detection of defects equivalent to a 50µm square or larger black speck, and 1 mm² size chip.
		Processing capacity	85,000 - 125,000 capsules/hour (actual value)
Hardware	Image and date processing	Optical unit	Face/side lighting unit (LED) and 3D inspection unit (laser)
		Camera	Face/side: 3CMOS colour line sensor camera x4, 3D inspection: CMOS area sensor camera x2
		Monitor/communication	Touch Panel (23.8 inch)
		Data processing unit	V-IPU (Viswill Image Processing Unit)
	Transfer subsystem	Hopper	Capacity: 21L
		Vibratory feeder	Electromagnetic rectilinear feeder
		Flow-control turntable	Dia 350 mm, disk track rotary system
		Conveyor units	Dual conveyor lines using timing belts
	Rejection subsystem	Rejection units	Pneumatic system with rejection monitoring functions
		Defective tablet Collection bin	Capacity: 16L
		Uninspected tablet collection bin	Capacity: 12L
		Pneumatic system	Suction blower for the belt conveyor units: 3.7kW
Software		Inspection functions	Overall evaluation, input of sensitivity, inspection condition setting, inspection result output, simulation
		Diagnostic functions	Monitoring of transfer condition, monitoring of detective ration, monitoring of hardware malfunction, monitoring of tablet feed
Size and Environment		Dimensions	1,854W x 883D x 1,901H
		Power supply	Through separate transformer, with primary specifications: 3 x 380 - 400 - 415V - 50-60Hz - Y+N - 10.4 kVA
		Pneumatic pressure	>= 0.5MPa
		Ambient conditions	Temperature, 10-30°C, humidity 30-70%
		Outer housing	Stainless steel (SUS304) hairline finishing (buffing is available as an option)

TABLET

Round tablet: 300,000 tablet / hour (actual value with 5mm dia)
Shaped tablet: 150,000 tablet / hour (actual value with 8mm length)

CAPSULE

5 size: Max 125,000 capsules / hour
4 size: Max 117,500 capsules / hour
3 size: Max 110,000 capsules / hour
2 size: Max 100,000 capsules / hour
1 size: Max 92,500 capsules / hour
0 size: Max 85,000 capsules / hour

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