

viswill

TABLET VISUAL INSPECTION SYSTEM

TVIS-NS



Revolutionising the Global Standard

DAIICHI JITSUGYO VISWILL CO., LTD.

TABLET VISUAL INSPECTION SYSTEM


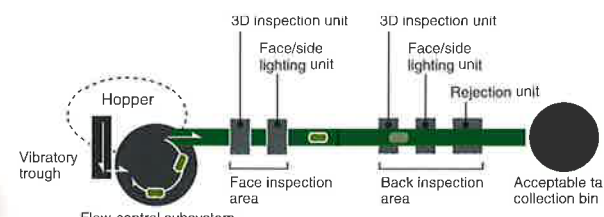


TVIS-NS



Higher Processing Capacity, User-Friendly Operation and Easy Cleaning

Processing Capacity



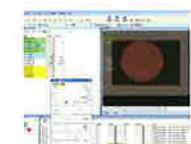

High processing capacity with new flow-control subsystem

- 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

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

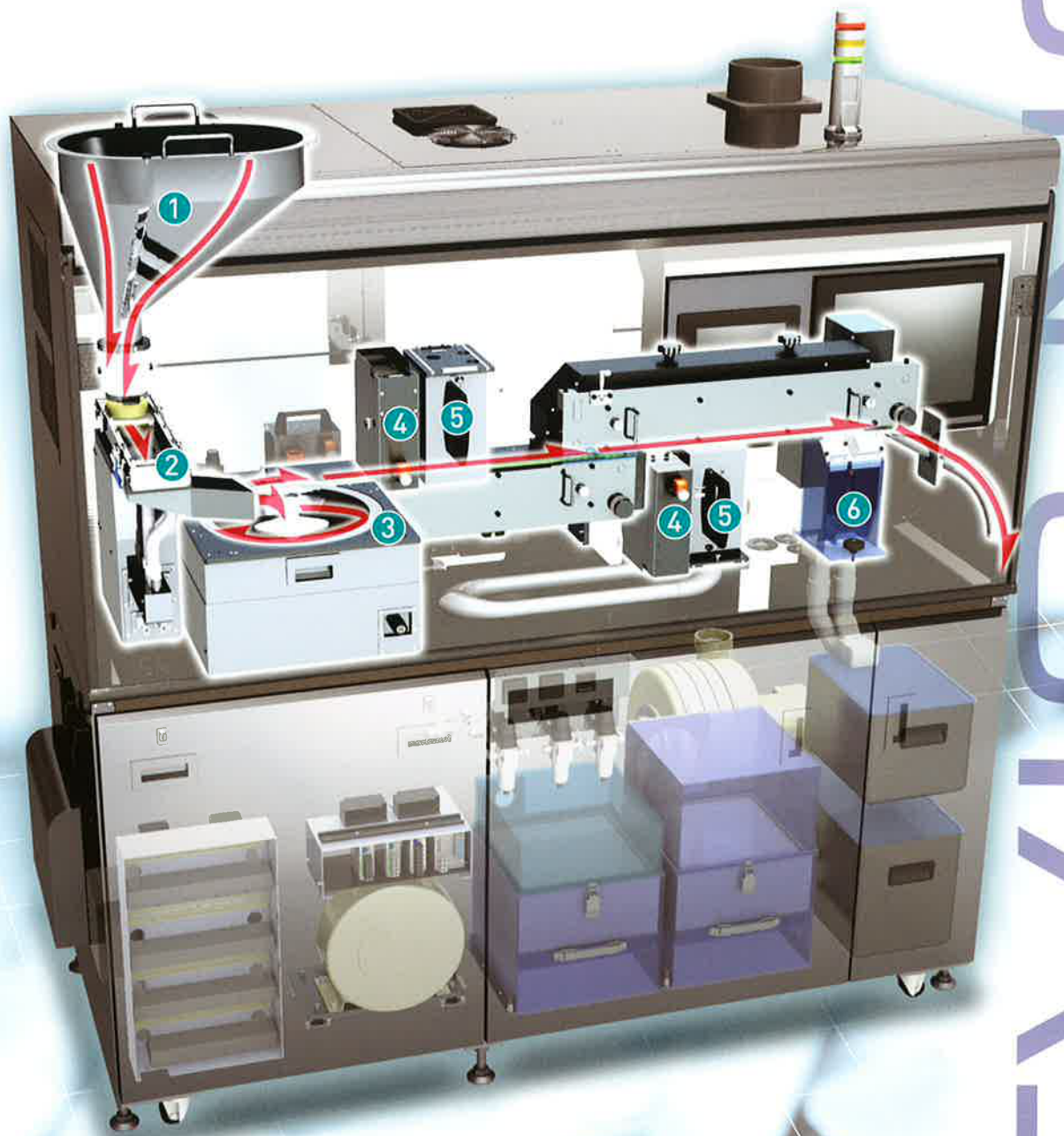
Easy Cleaning

Easy assembly and cleaning






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



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1 Hopper



2 Vibratory trough



3 Flow-control subsystem



4 3D inspection unit



5 Face/side lighting unit

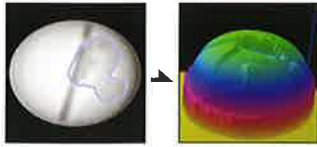


6 Rejection unit

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

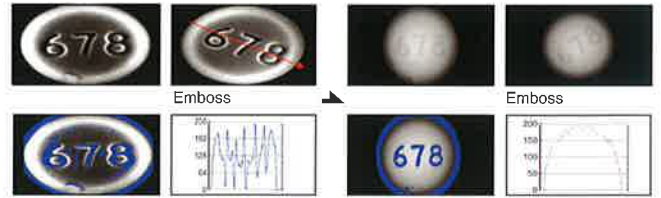


Chipped tablet with surface pattern

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.



Camera image

Monochrome camera

Monochrome camera with optical filters

Color camera

Improved emboss/printing inspection

Each character inspection with our own algorithms enables to reject mainly for emboss/printing defects.



Emboss chipping



Wrong emboss



Printing missing

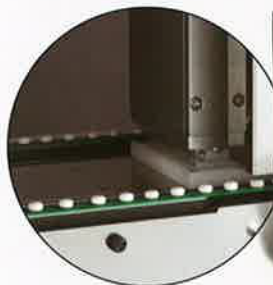
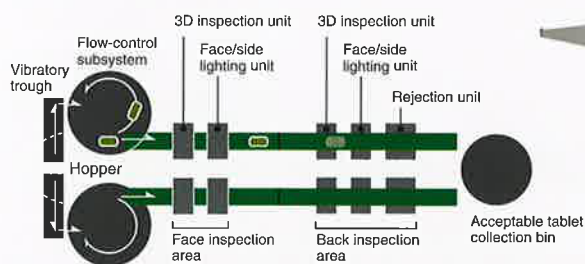


Dirt around printing



Printing defect

Double speed machine is also available.



Quality Compliance

- Compliance of Computer System Validation (CSV) and GAMP5
Daiichi Jitsugyo Viswill's Tablet Visual Inspection System became compliant with the CSV since 1998
- Compliance of 21 CFR Part 11 ISO9001/14001

Reference site with more than 1,000 machines installed, covering 70% market share (According to our survey)

- Unique tablet transfer system produces stable transfer of non-circular tablets including tablet with deep break line, ring shape tablet
- Soft handling technology for fragile tablets
- Unmanned solutions for night operations
- Customised options available

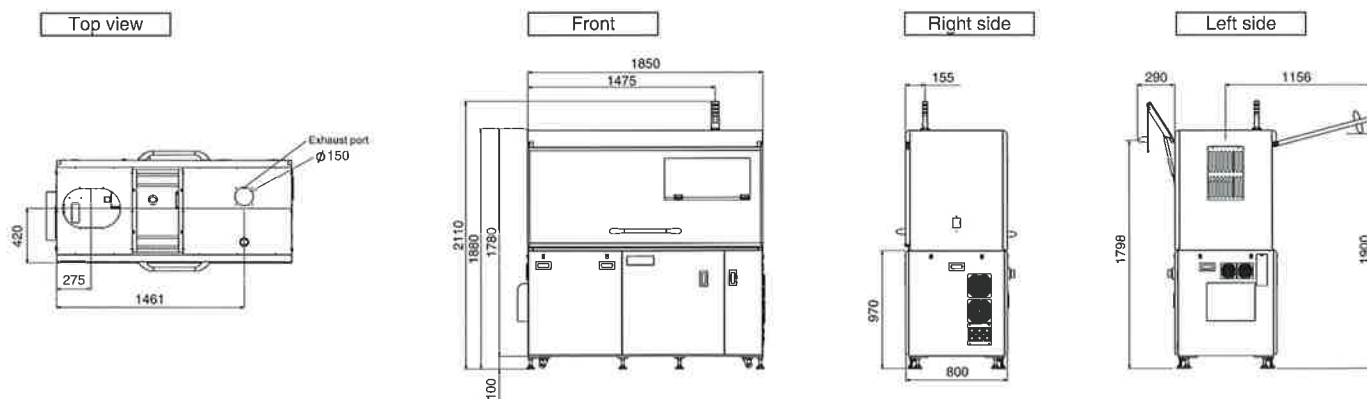


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TVIS-NS Standard Specifications

Item		Specification	
Inspection functions	Applicable tablets	Uncoated, film-coated, sugar-coated tablets; tablets with printed mark on one or both sides: scored tablets; tablets with engraved mark	
	Tablet size	Round tablets: 5-12 mm 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 color, coating and emboss defects, etc.	
	Inspected surfaces	Face, back, and side	
	Inspection accuracy	Detection of defects equivalent to a 50µm square or larger black speck, and 1 mm ² size chip	
	Processing capacity	300,000 tablets/hour (actual value; dia. 6mm). The value varies according to the size and shape of tablets.	
Hardware	Image and data processing	Optical unit	Face/side lighting unit (LED) and 3D inspection unit (laser)
		Camera	Face/side: 3CMOS color line sensor camera x 2, 3D inspection: CMOS area sensor camera x 2, Additional side inspection: 3CMOS color line sensor camera x 2 (optional)
		Monitor/communication	Touch Panel (15-inch for display and 8.4-inch for operation)
		Data processing unit	V-IPU (Viswill Image Processing Unit)
	Transfer subsystem	Hopper	Capacity: 22 L
		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 unit	Pneumatic system with rejection monitoring functions
		Defective tablet Collection bin	Capacity: 27 L
		Uninspected tablet collection bin	Capacity: 16 L
Pneumatic system		Suction blower for the belt conveyor units, 2.2 kW; suction blower for powder collection. 0.75 kW	
Software	Inspection functions	Overall evaluation; input of sensitivity; inspection condition setting; output of inspection results, simulation	
	Diagnostic functions	Monitoring of inspection status. Monitoring of hardware, self-diagnosis	
Size and environment	Dimensions	1,850Wx800Dx1,880H	
	Power supply	200 VAC (3 phase), 50/60 Hz	
	Pneumatic pressure	≥0.35MPa	
	Ambient conditions	Temperature, 10-30°C, humidity 30-70%	
	Outer housing	Stainless steel (SUS304) hairline finishing (buffing is available as optional)	

TVIS-NS Size



*Specifications and external appearance are subject to change without prior notice.
 *The data of this brochure is as of October, 2013.

Manufacturer

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