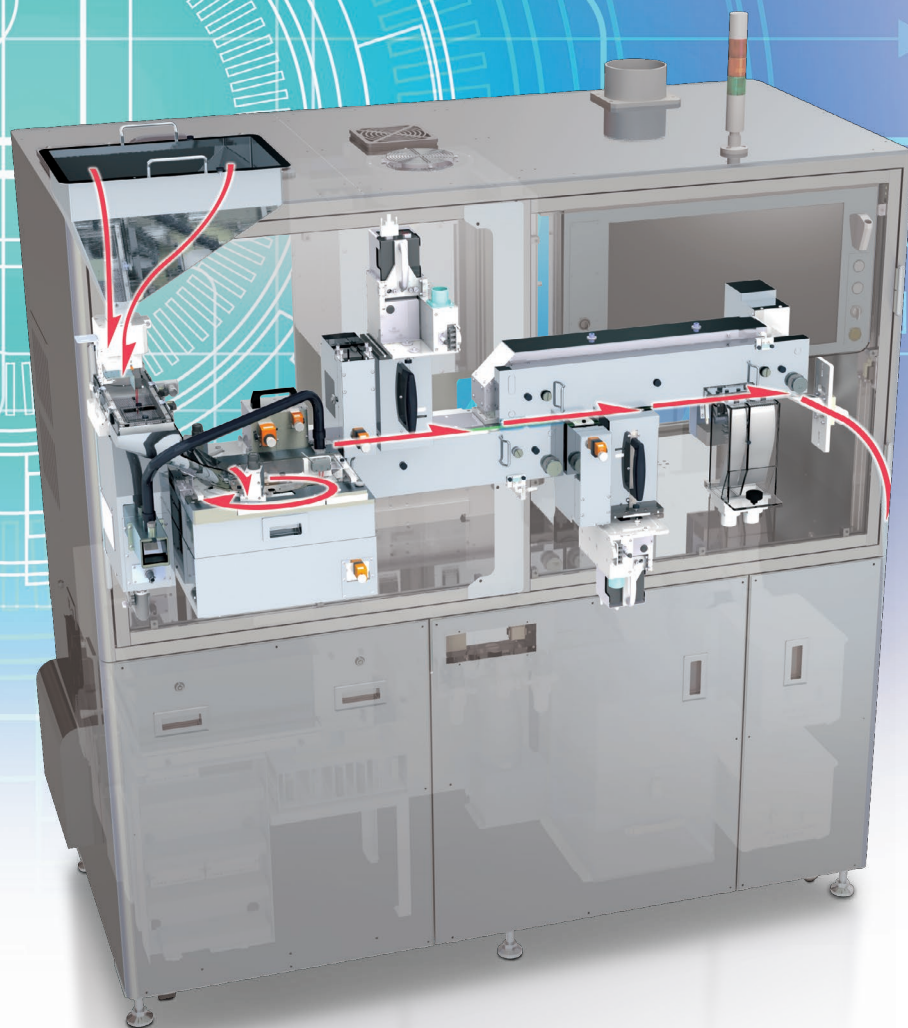




# TVIS-NSR

TABLET VISUAL INSPECTION SYSTEM

Revolutionising the Global Standard



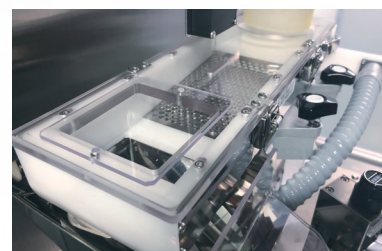
➔ Product flow direction of Tablet

# UNIT

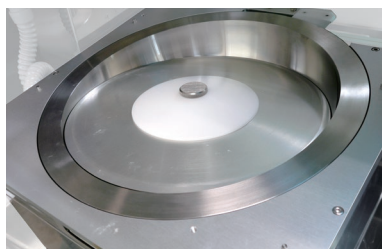
## INTRODUCTION



Hopper



Vibratory feeder



Flow-control subsystem



Face/side lighting unit  
and 3D inspection



Rejection unit



# TVIS-NSR

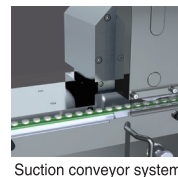
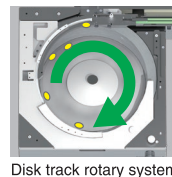
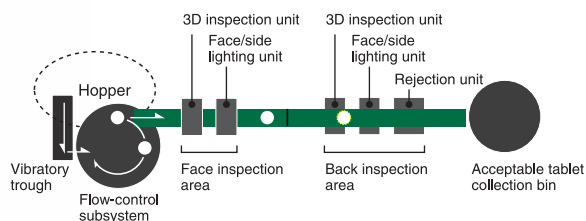
## TABLET VISUAL INSPECTION SYSTEM



Higher Processing Capacity,  
User-Friendly Operation and Easy Cleaning

### Processing Capacity

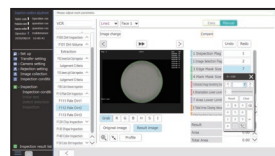
#### High processing capacity with new flow-control subsystem



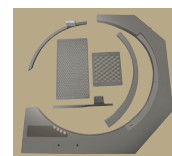
- New disk track rotary system for tablet feeding
- Stable transfer with high processing capacity
- Improved inspection speed up to 50% for circular tablets and 80% for shaped tablets (compared with the conventional model)

### User Friendly

#### Easy machine operation



Display inspection status on tablet image

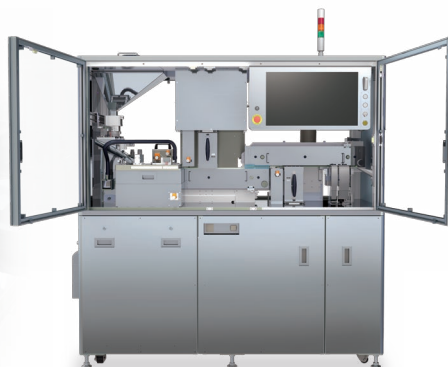


Change over parts

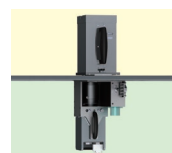
- Easy recipe making
  - Automatic setting for all volumes (for Feeder, flow-control subsystem, suction blower for conveyor and powder collection)
  - No adjustment for focus, iris needed
  - Inspection parameters displayed in real time
- Enhanced easiness in optimum parameter settings

### 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



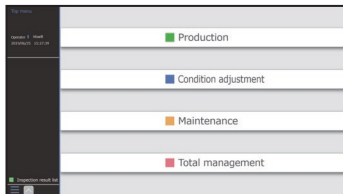
Intuitive  
Operation

EASY

ALL Data  
stored



## EASY OPERATION



Home screen



Inspection screen



Set up video available



Real time view on tablet transfer

## DATA ANALYSIS



Graph of the output and defect rate

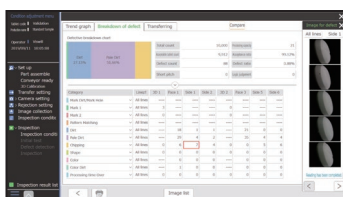


Backup of all defect images

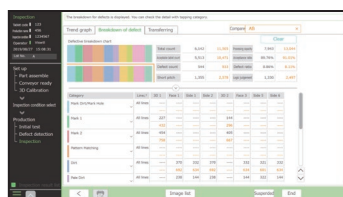


Initial test result displayed

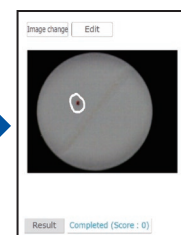
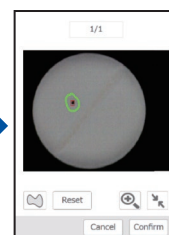
## EASY RECIPE SETTING



Easy inspection of defect images



Past lot data analysis and comparison



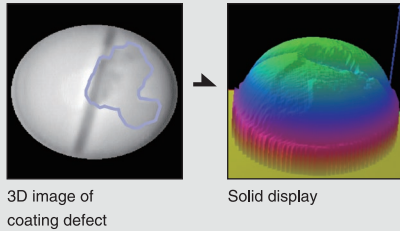
Easy  
setting



## 3D inspection: the new era of visual inspection

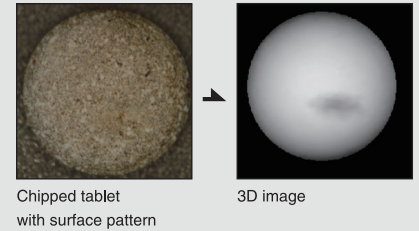
### Rejection of coating defect

Shape characteristics of tabletsurfaces captured in 3D images



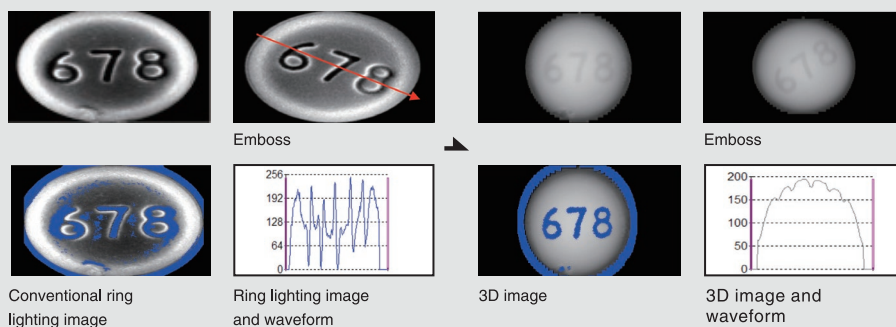
### Inspection for face chipping of spotted tablet

No influence from tablet surface pattern



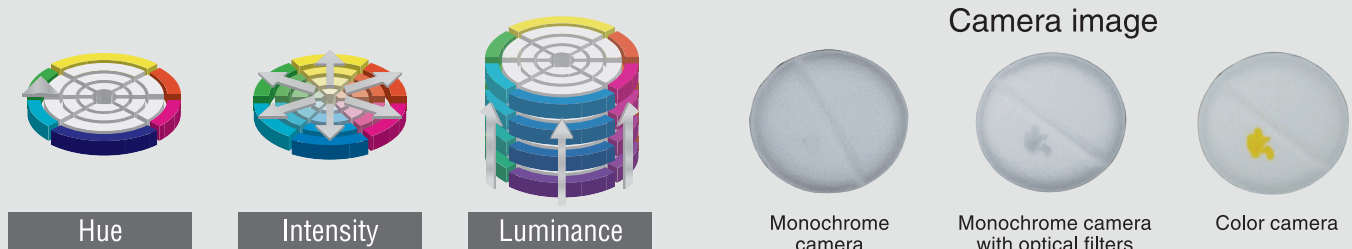
### Comparison with conventional ring lighting

Only characteristics of emboss and chipped tablets are captured



## 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.



## Improved emboss/printing inspection

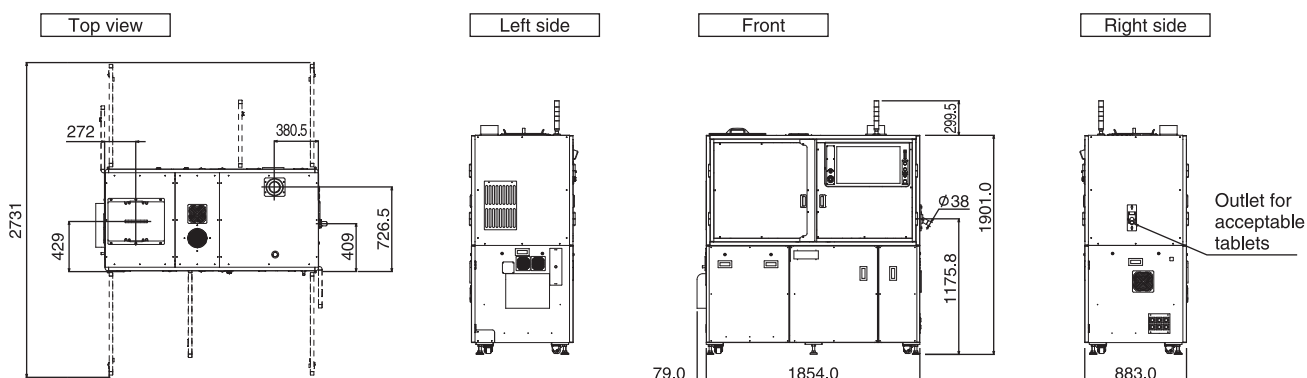
Our algorithms allows to inspect each character and to reject emboss/printing defects.



# TVIS-NSR 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 Top, bottom and side	
	Inspection accuracy	Detection of defects equivalent to a 50µm square or larger black speck, and 1 mm <sup>2</sup> 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
		Monitor/communication	Touch Panel (23.8 inch)
		Data processing unit	V-IPU (Viswill Image Processing Unit)
	Transfer subsystem	Hopper	Capacity: 21 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: 16 L
		Uninspected tablet collection bin	Capacity: 12 L
		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 defective ration, monitoring of hardware malfunction, monitoring of tablet feed	
Size and environment	Dimensions	1,854Wx883Dx1,901H	
	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)	

# TVIS-NSR Dimensions



R&D and Manufacturer

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