Ikegami

TIE-7000A
Color Visual Tablet Inspection Equipment

Color processing technology allows diffuse stains and printing defects to be easily detected

The color camera system provides a much more precise detection system. Small or diffuse stains, printing defects, foreign tablets and etc. can be easily detected by the color line sensor and Ikegami processing technology.

Color Processing   Monochrome Processing

High accuracy detection of small defects, foreign matter and fiber in or attached to the tablet

The newly developed control algorithms of the visual processing section and the ultra high quality optical system give the TIE-7000A the ability to accurately and reproducibly detect defects or foreign matter as small as ϕ50 microns. The new algorithms also allow the unit to detect small diameter fibers on or protruding from the tablets and chipping of tablet edge.

Fiber / Hair   Foreign Matters

Full 360 Degree Tablet Inspection

The newly designed high end optical technology assures complete inspection of top, bottom and sides of the tablet. 100% of the tablet surface is inspected reliably and reproducibly giving the TIE-7000A the highest efficiency of inspection.

High Accuracy Inspection (option)

High accuracy inspection camera and lighting unit can be installed for crack and engraved tablets inspection as an option, and contribute greatly to the inspection capability.

Chipping

OD (Orally Disintegrating) Tablet Inspection (option)

The TIE-7000A employs the flat return belt which provides little stress with tablets. An accurate and a gentle transport system allows to handle delicate agent such as OD tablets with high hygroscopicity and easy disintegration, and to overcome these weaknesses.
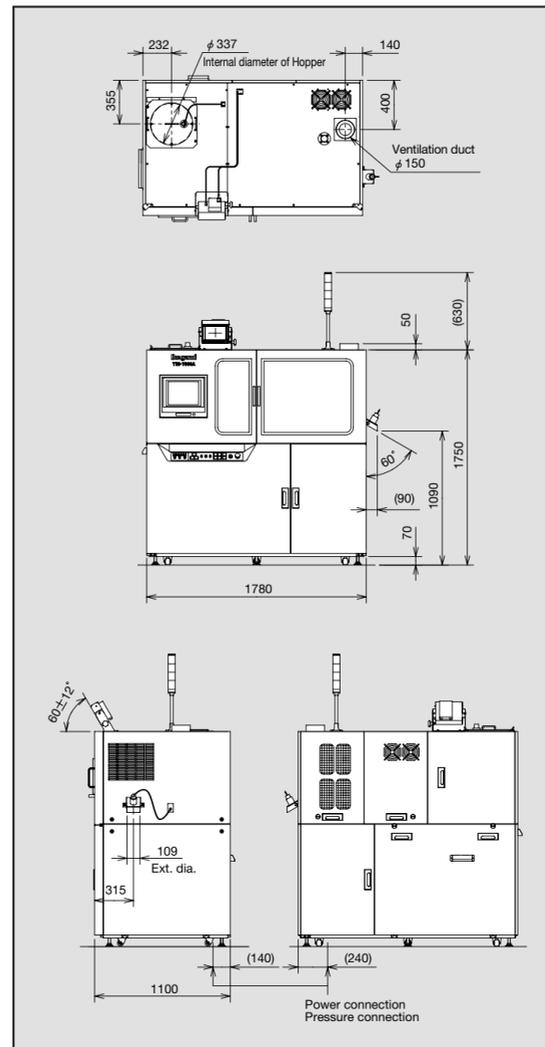
Color Visual Tablet Inspection Equipment TIE-7000A

■Rating / Performance

Applicable tablets	Plain tablet, Film-coated tablet, Sugar-coated tablet, Irregular-shaped tablet (Division-lined tablet, Engraved tablet, Printed tablet <One side/Both sides>)
Applicable sizes	Shape: [Round tablet] ϕ5mm ~ ϕ12mm　　[Irregular-shaped] length maximum 21mm Thickness: 2mm ~ 8mm *Other sizes may be applicable with customer's requirement.
Color	White color ~ Dark Brown color
Inspection items	Front/Back/Sides: Stain, Printing smudge, Printing blur, Chipping, Cracking, Deformation, Color stain, Discoloration, Color difference, Printing color difference, Hair, Fiber
Inspection accuracy	Stain: [Front/Back] ϕ50μm or larger corresponding to black spot 　　　[Sides] ϕ50μm or larger corresponding to black spot Chipping: 2mm^2
Processing capacity	Plain tablet, film-coated tablet (ϕ8mm): 250,000 tablets/hour <The same capacity at embedding the high accuracy inspection function>
Lighting	Lighting method: Optical fiber Life estimated: 1,500H ~ 2,000H Lamp: Special high brightness lamp x 4 　　　(User replaceable)
Camera	Pickup device: RGB CCD color line sensor Lens: F2.8 f=50mm Scanning method: one axis self-scanning method
Judging process	Real-time parallel processing method
Power requirement	Three phase AC200V/210V/220V (Selectable at transformer tap) ±10%
Power consumption	Less than 6KW
Air	Pressure: more than 0.5Mpa Consumption: less than approx 300 liter per minute Connection caliber: High coupler socket (400SH)
External dimensions	W1780 x H1750 x D1100 mm (excluding projection)
Weight	Less than 1400 kg
Option	High accuracy inspection function (special camera and lighting) Powder removal system (SUS spec., coating spec.) Printing software External device interface Easy Setting of Pre-set Thresh Hold Inspection Thresh Hold Simulation Function OD (Orally Disintegrating) tablet inspection

■External Appearance

232　ϕ337 Internal diameter of Hopper　140
355　400
Ventilation duct ϕ150
50　(630)
1750　1090　(90)　70
1780
60±12°
109 Ext. dia.
315
1100　(140)　(240)
Power connection
Pressure connection

Design and specifications are subject to change without notice.

TIE-7000A
Color Visual Tablet Inspection Equipment

By adopting the RGB color line sensor technology, the TIE-7000A has the capability of inspecting tablet for diffuse stains, printing defects, and many other defects with a high degree of accuracy. The ϕ50 micron resolution allows detection of minute particulate and even allows detection of fibers both on and protruding from the tablet. The TIE-7000A can contribute greatly to improving product quality, consistency and safety, as well as helping to improve overall production efficiency.

High Speed Inspection

The combination of the high speed, high volume tablet feeding and transportation system and the advanced high speed visual processing software allow the TIE-7000A to have a real world output of up to 250,000* tablets per hour. Additionally, the primary and secondary belt transport systems provide for a fast, stable and reproducible transportation of the tablets to the visual inspection station.
*Based on 8mm diameter Plain tablet, Film-coated tablets.

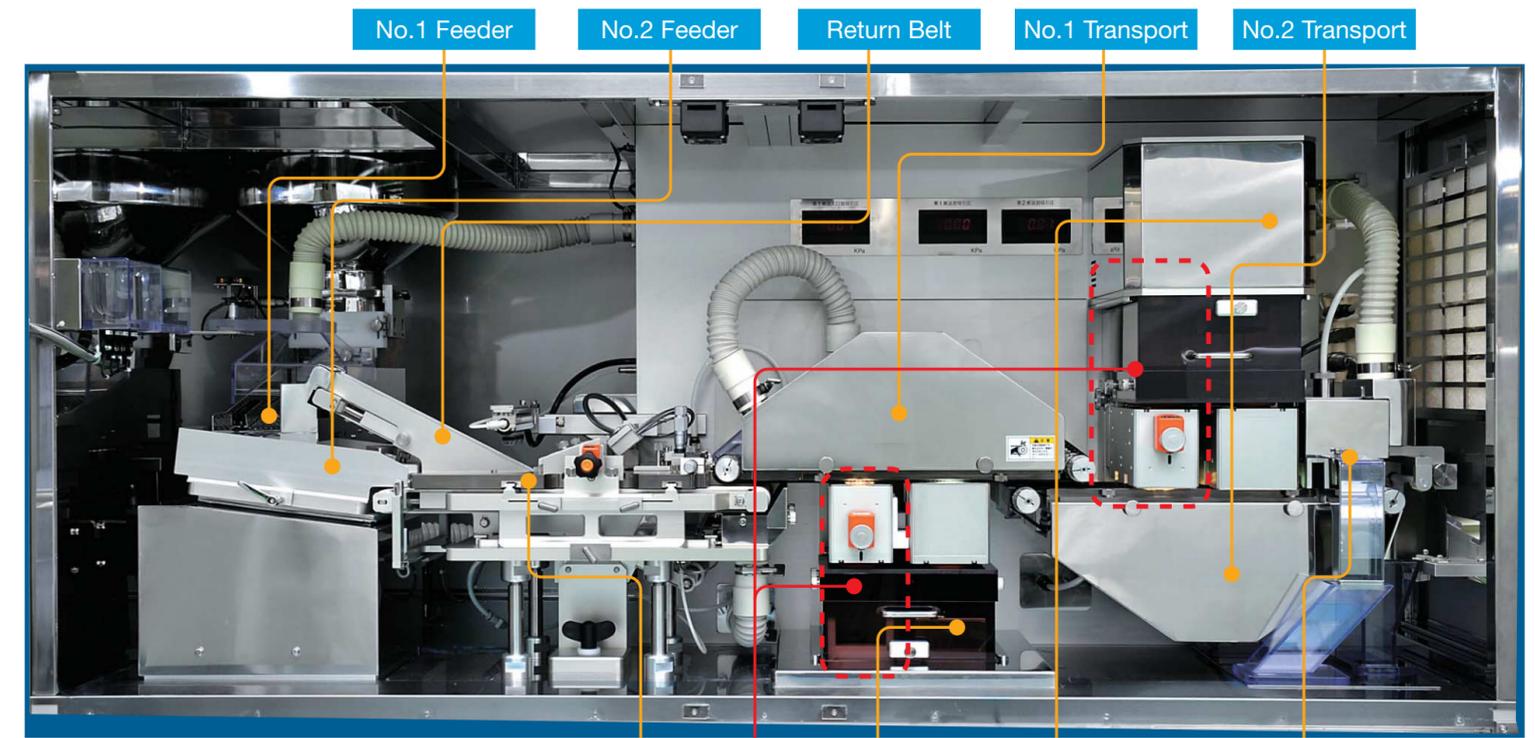### Simple and Reliable Tablet Alignment

The tablet alignment system is simple to adjust and accepts a wide variety of tablet shapes and sizes. It provides for a stable, uniform and high speed introduction of the tablet into the imaging section.

Fast and Easy Cleaning and Change Over

There are a minimal number of parts that must be removed for cleaning or product change over. Once the parts are removed, the remaining compartment can be easily and quickly cleaned.
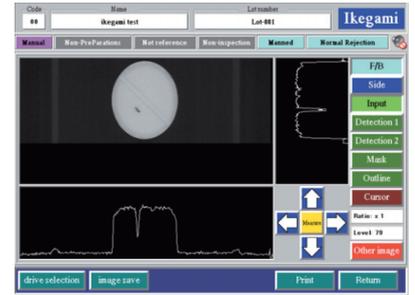
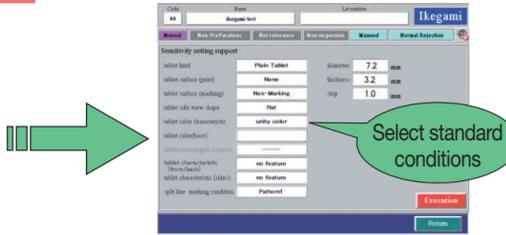■Easily Removable Transport Section

Full of Useful Functions

Defects Detection/Examination (standard)

Actual detection can be displayed on a touch screen with its image and waveform. It is possible to examine defects detection visually.

No.1 Feeder No.2 Feeder Return Belt No.1 Transport No.2 Transport

Belt Alignment No.1 Camera No.2 Camera Selection

Camera for High Accuracy Inspection (option)

Easy Setting of Pre-set Thresh Hold (option)

In setting thresh hold a new tablet, this function assists to find the best suitable set up from the previous file data for setting thresh hold by an experienced operator.
This function allows to change its details, even for a new tablet, for color or shape, or for the inspection points for the best inspection results.

TIE-7000A main unit

Select standard conditions

Display on a touch screen

Inspection Thresh Hold Simulation Function (option)

This function is to make an easy testing and verification by an external PC, transferring necessary data from the main CPU of TIE-7000A, to carry out the exact same process of the main CPU for a desired thresh hold set up, without disturbing main unit operation. The necessary image data recorded in the panel PC of the main unit is copied by an external PC over LAN or USB or other media transfer.
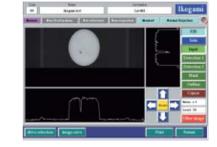
TIE-7000A main unit

Image data

LAN or USB or other media transfer

PC for simulation