

**ENCLONY**

**TREND PIONEER**

Inspection solution with  
the best flexibility and usability

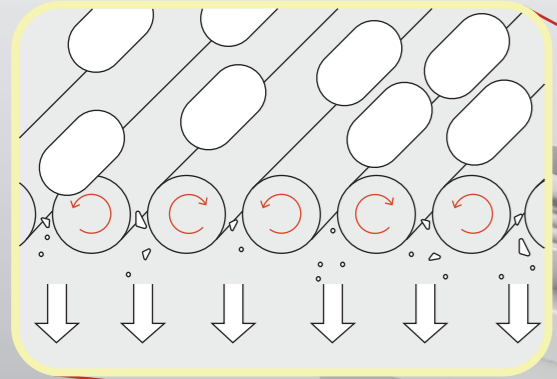
**PLANET EV**

A high capacity, diversity machine for

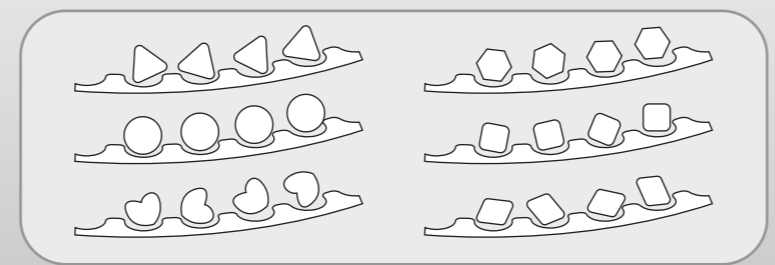
**Automatic Vision Inspection  
of TABLETS, CAPSULES**

# Ultimate Flexibility and Stability

**Screw Feeder**



**Pocket Guide**



**Centrifugal Feeder**

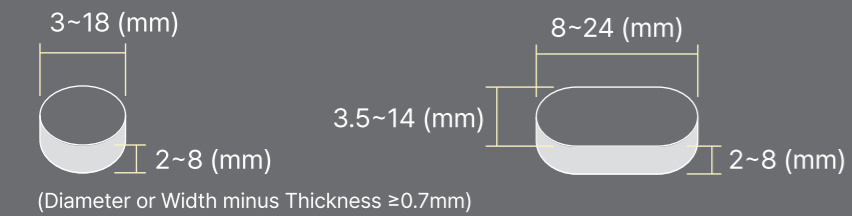
**Rotation Guide**

\* Pending a patent

	<b>Flexibility</b>	<b>Stability</b>
<b>Screw Feeder</b>	Applicable to all product shapes and sizes	<b>Innovated design &amp; Cyclone</b> - Removing dust perfectly - Providing excellent condition for transfer
<b>Centrifugal Feeder</b>	<b>Providing 45 kinds of guide (Pocket &amp; Rotation Guide)</b> - Inspecting every product such as dedicated machine - Applying every shape of products  <b>Providing 7 kinds of feeder gate</b> - Cover all types of products	<b>Pocket &amp; Rotation Guide</b> - Silicon material for minimizing product damage - Stable position & feeding without friction force - Stable feeding for small(3.5mm) and high convex tablet  <b>Creative design and Optimized feeder size</b> - Feeding efficiently - Minimizing product damage by low RPM - Securing stable feeding for difficult product

# TABLET INSPECTION

## Applicability

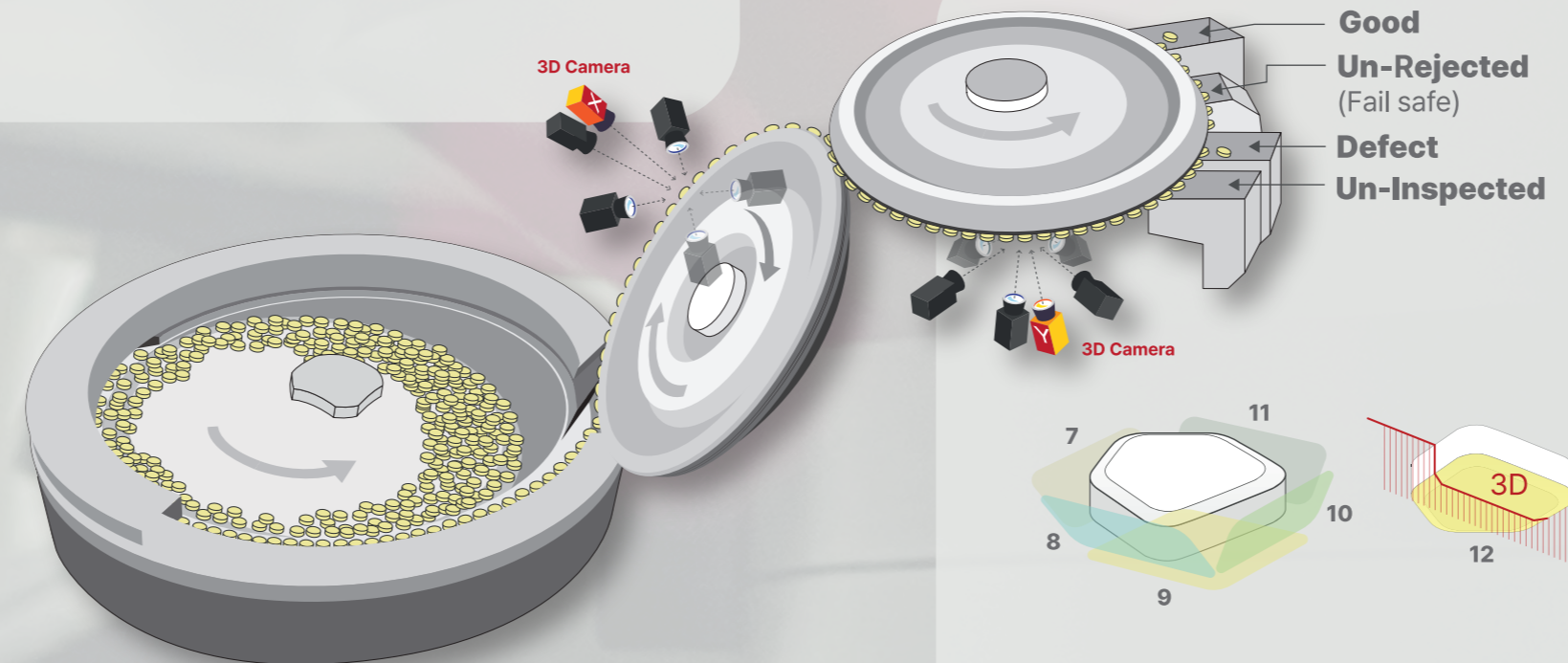
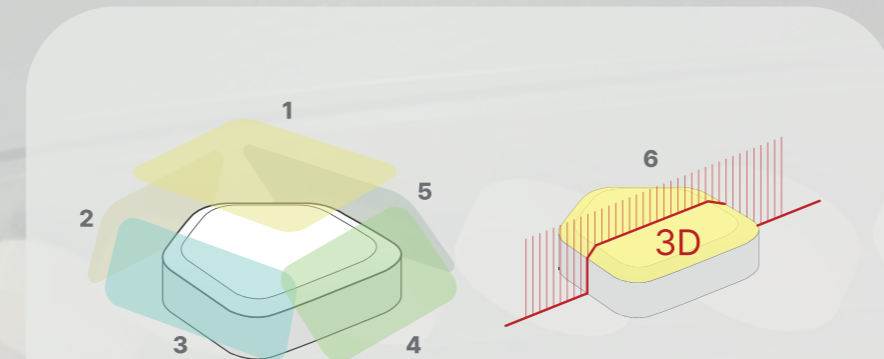


Uncoated, Film coated, Sugar coated, Multilayer  
 Polygon Shape : Triangle, Square, Diamond, Pentagon, Hexagon, Octagon etc.  
 Free Shape : Heart, Kidney, Bean, Water drop, Half round, Almond, Flower etc.

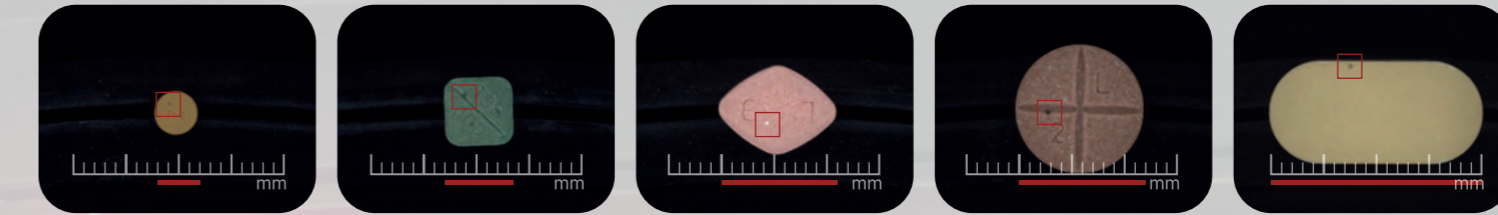
## Speed

Shape	Size (mm)	PLANET EV
Round (Diameter)	4.6 ~ 5.3	425,000
	5.3 ~ 6.1	370,000
	6.1 ~ 7.1	320,000
	7.1 ~ 8.2	280,000
	8.2 ~ 9.3	240,000
	9.3 ~ 10.7	210,000
Oval / Oblong (Length)	10.7 ~ 12.4	180,000
	10	230,000
	12	198,000
	14	176,000
	16	154,000
	18	132,000
	20	110,000
	22	99,000

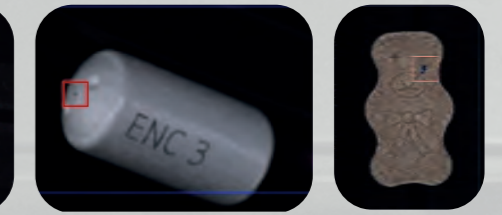
\*The maximum speed can be affected by condition of tablet.



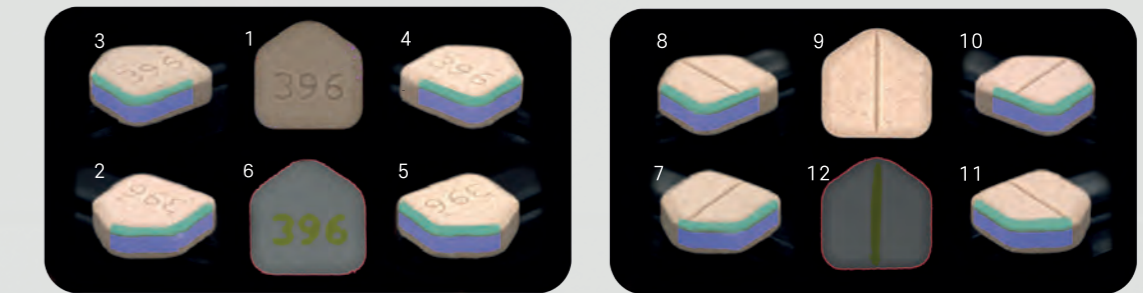
## Standard



## Special



Each tablet is inspected by ten 2D cameras capturing the complete surface areas (top, bottom, 360° sides with the shoulder, and edge corners of the tablet) without any blind spot. In addition, two 3D cameras measure the height of tablet surface, both side of top and bottom, which allows to detect minimum 50µm defects including defects in engraved ID.



# CAPSULE INSPECTION

## Applicability



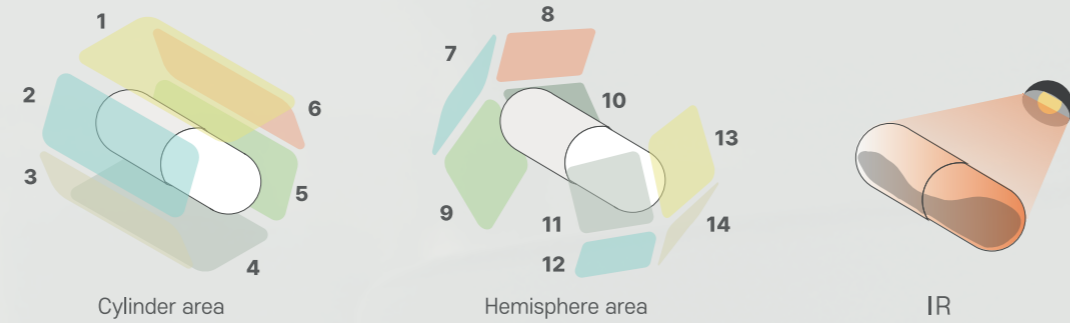
No : 00, 0, 1, 2, 3, 4, 5

## Speed

No	PLANET EV
00	100,000
0	110,000
1	120,000
2	130,000
3	140,000
4	150,000
5	160,000

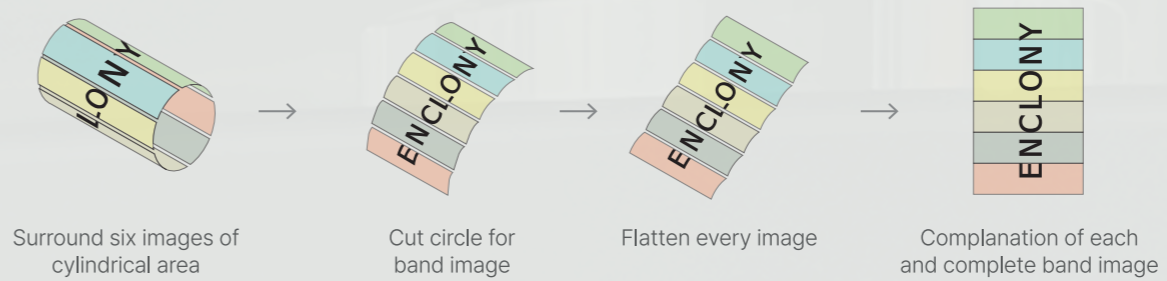
\*based on hard capsule

\*The maximum speed can be affected by condition of capsule.

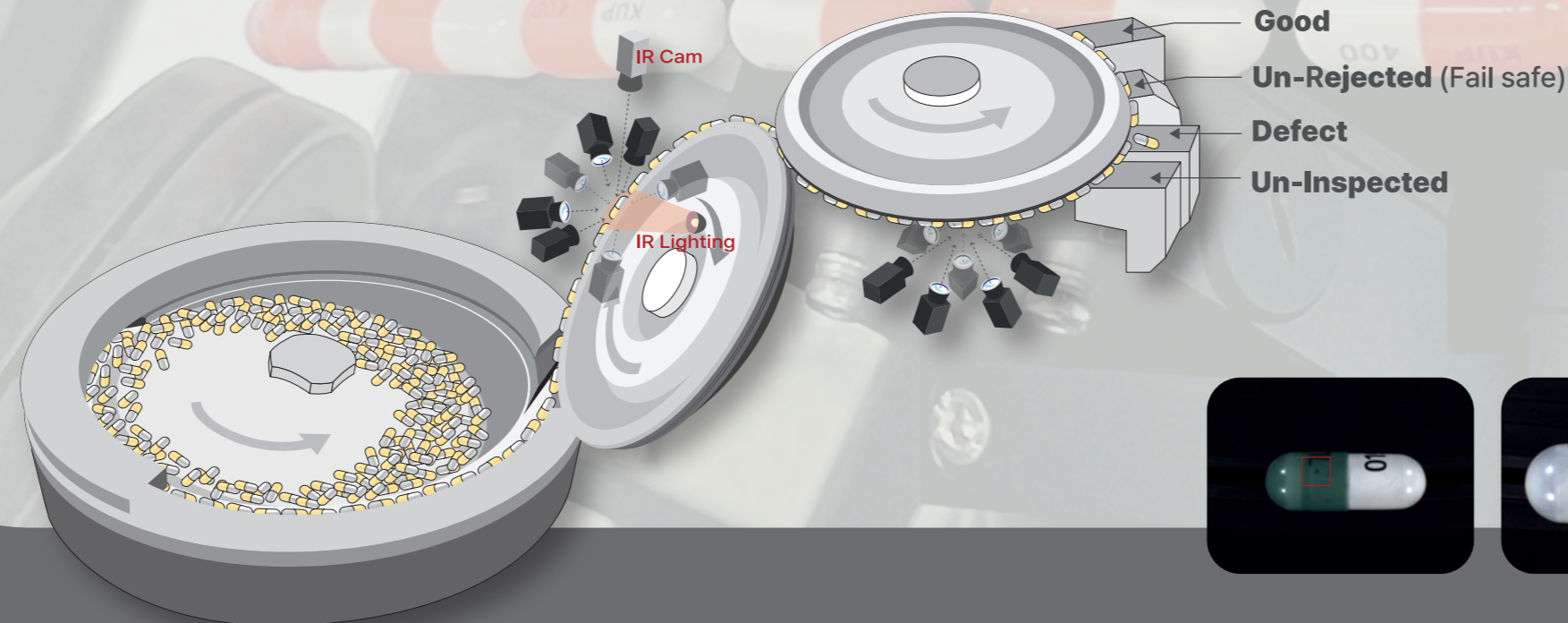


Each capsule is inspected by fourteen 2D cameras capturing the whole surface area (360° cylinder area and both hemispheres areas). An additional infrared camera detects the inside of capsule to check whether it is empty or lacking contents.

## Cylinder Parts Renovation to the Band Image



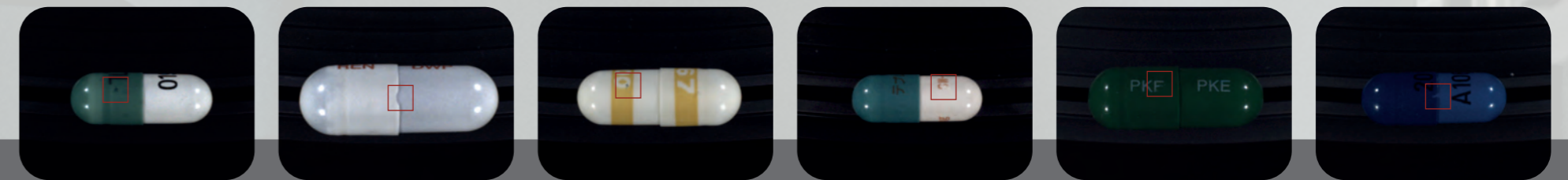
6 images, which form a 360° cylinder area, are combined and flattened after several steps of image reformation algorithm, as shown in the images above. With this, we are able to perform detailed image analysis of cylinder area especially for printed ID 360° surrounded by capsule.



- Good
- Un-Rejected (Fail safe)
- Defect
- Un-Inspected

## 360° Print Analyzation

Geographic analysis enables complete inspection of ID on 360° banded images, including complex printing.



# Defect Analyzation



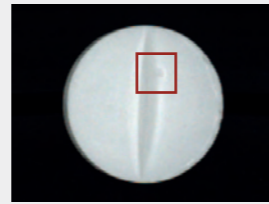
Real Image

Image taken by Planet

## Chipping



Edge Corner



Split Line



Engraving

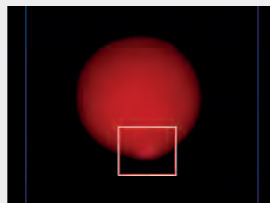
## Print, Bump, Foreign Object



Blurred Print



Bump

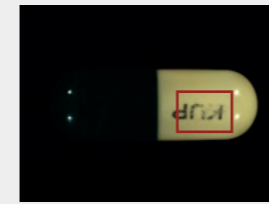


Bump



Hair

## Print



Smear

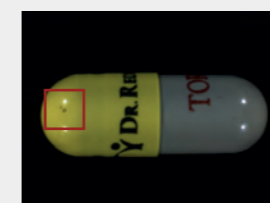


Print erased

## Stain

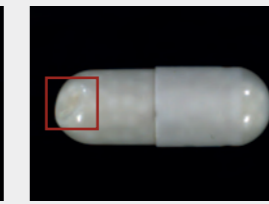
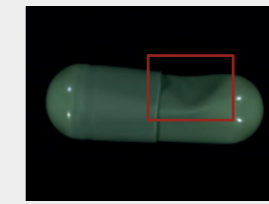


Black Spot on Print

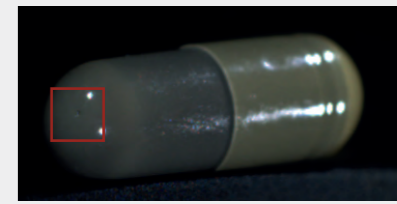


Black Spot on Sphere

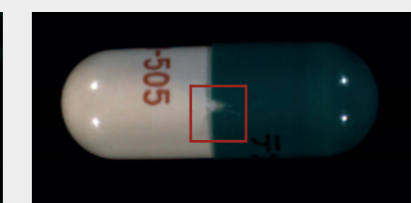
## Dent



## Pinhole



## Joint



## Color Defects



Stained



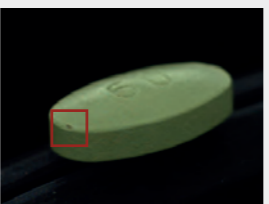
Spot on Multi-layer



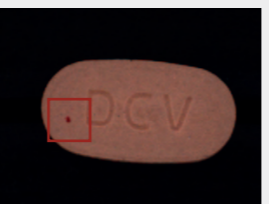
Spot on Multi-layer



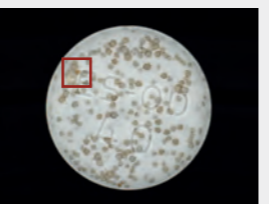
Color Deviation



Spot



Spot



Foreign Color on Freckles

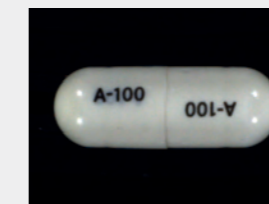
## Scratch, Bubble, Double Cap



Scratch



Bubble

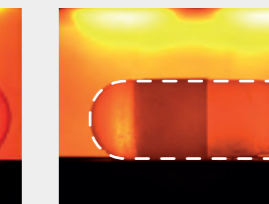


Double Cap

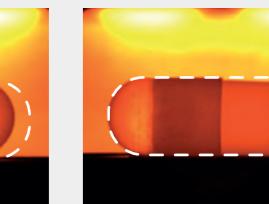
## Empty, Short & Long



Empty



Short



Long

## Easy Cleaning

It is designed with **no electric cables, sensor wires, air hoses** to make cleaning easier. And prevents cross contamination because there is no location that cannot be reached by hand. Furthermore, the entire operation chamber may be viewed at once, allowing for proper cleaning.

Disassemble  
3min.

Cleaning  
10min.

Reassemble  
5min.

**Fast & Easy**  
**18 min**

## Simple Changeover

### Step 1.

Check the size and shape of the product



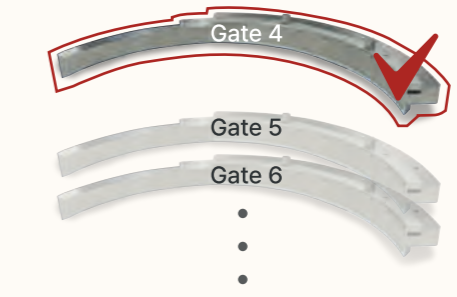
### Step 3.

The machine automatically adjusts the gap



### Step 2.

assemble suitable parts



### Step 4.

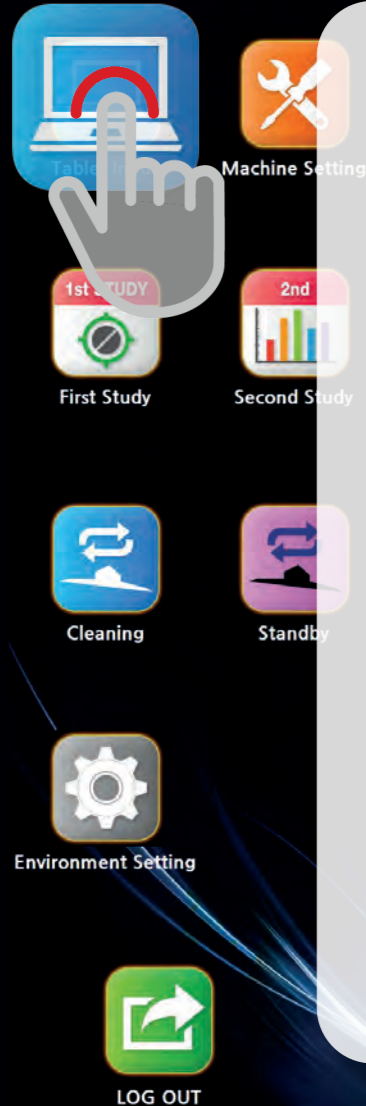
Ready for inspection



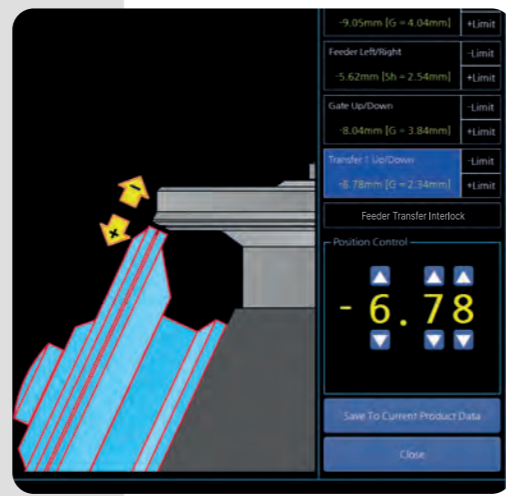
**Simple parts combinations and minimize tasks for operators**

# Smart HMI

HMI designed with smart icon is easy approachable to all controls and adjustments in the machine operations include inspection processing, electrical and mechanical control, operation, recipe setting, function testing, various controls (light brightness, illumination, shutter speed, etc.), production reports, audit trail reports, user access management, log-in, log-out, and so on. Any language accessible for Windows is applicable.



Simple input of product information



Numerical machine settings and storage in the recipe

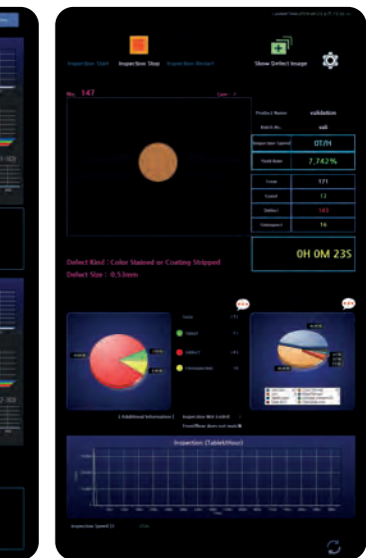
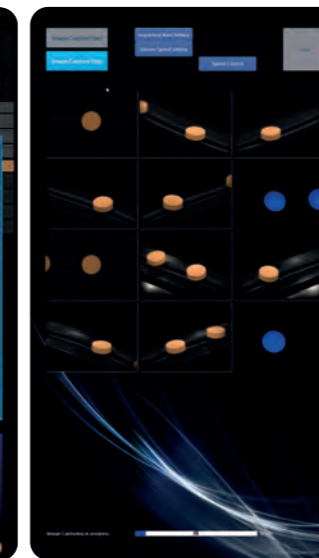
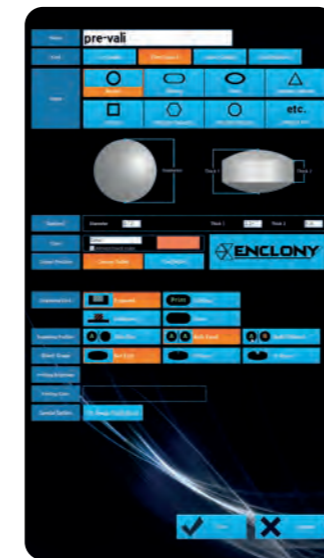


Easy ID extraction

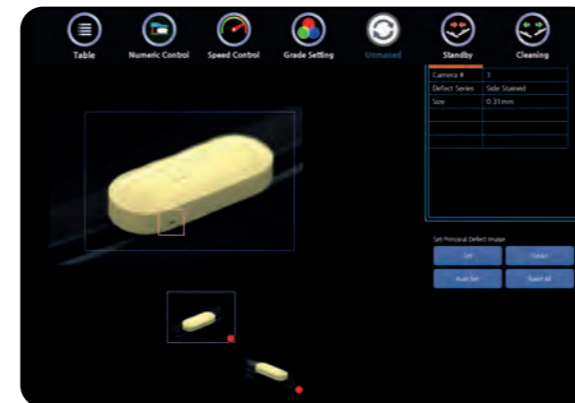
## Easy New Recipe Setting in 30 min.

Your operator can set up the recipe of the new product. Smart HMI guides your operator in 6 steps to get the initial parameters of the new product within 30 minutes, which can be set as your own adjustment per your quality standard.

1. Create New Recipe
2. Machine Setting
3. Image Capture
4. Feature Extraction
5. Self Study
6. Inspection



## Running Simulation

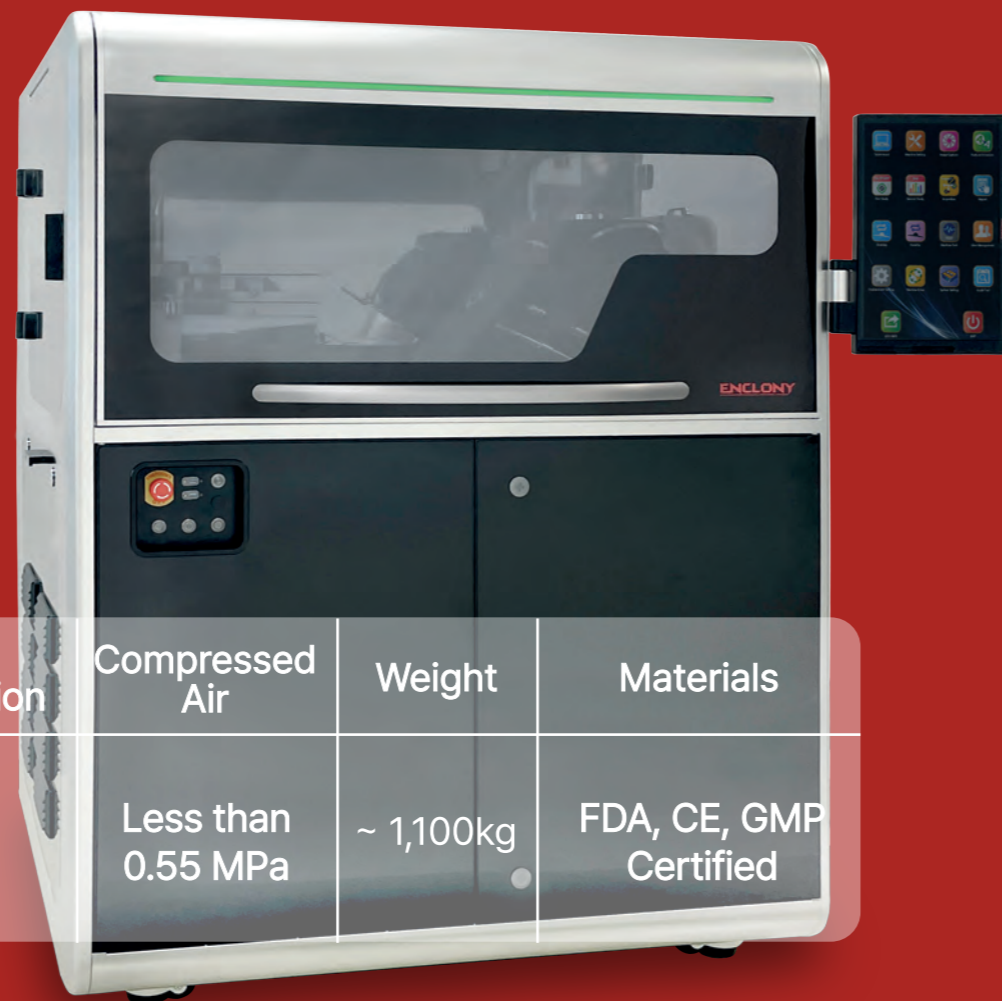


## Real-Time Operation Status



# Improvement of Productiveness, Efficiencies with PLANET Inspection

## PLANET EV



Application	Dimensions (mm)	Electric	Power Consumption	Compressed Air	Weight	Materials
Tablet /Capsule	W : 1,410 D : 1,073 H : 1,820	3-Phase 60/50 Hz	11.5 kW	Less than 0.55 MPa	~ 1,100kg	FDA, CE, GMP Certified



Easy to Use



Excellent Durability



Adopt Every Product



Unlimited Recipe



Dedicate Parts for Product

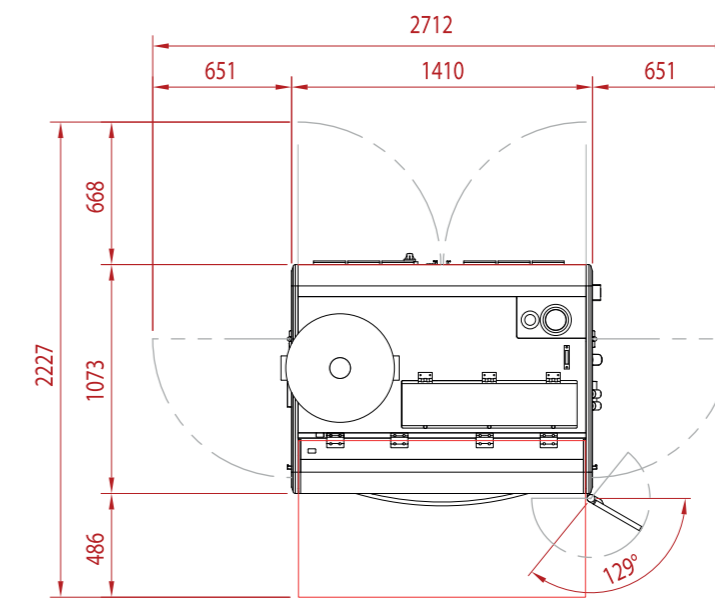
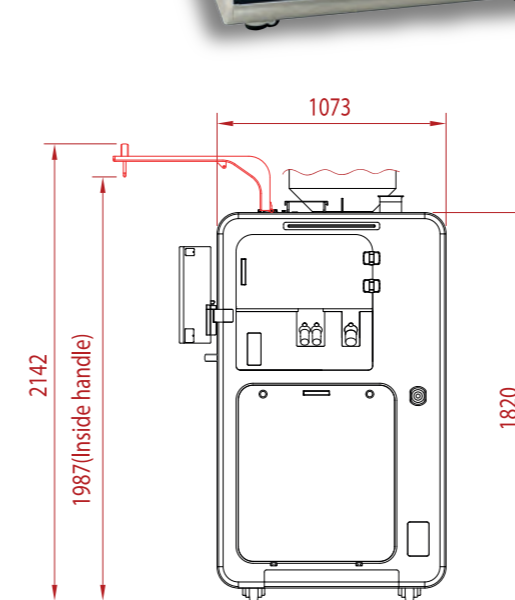
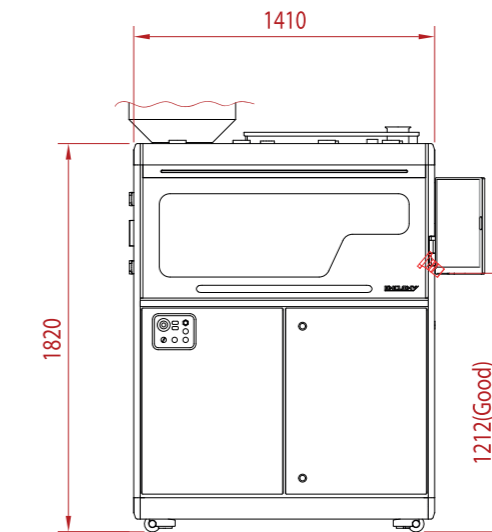


High Resolution Camera

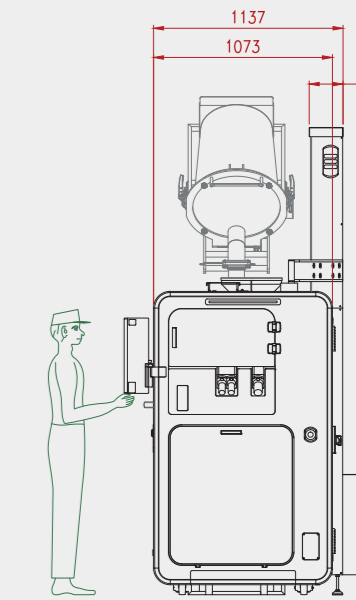
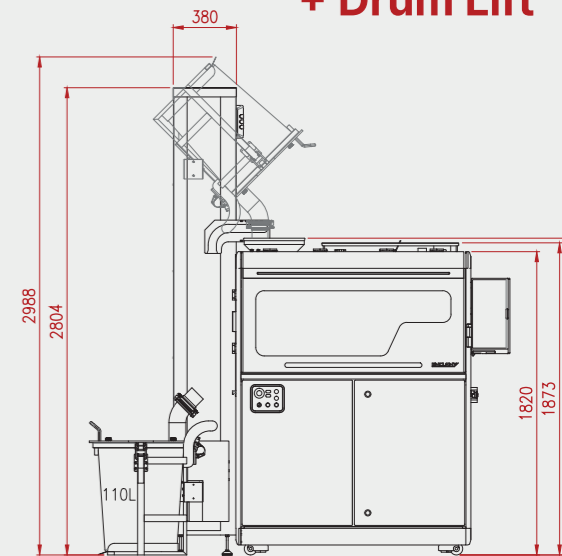


High Cost Effectiveness

## Inspection Machine



## Inspection Machine + Drum Lift





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