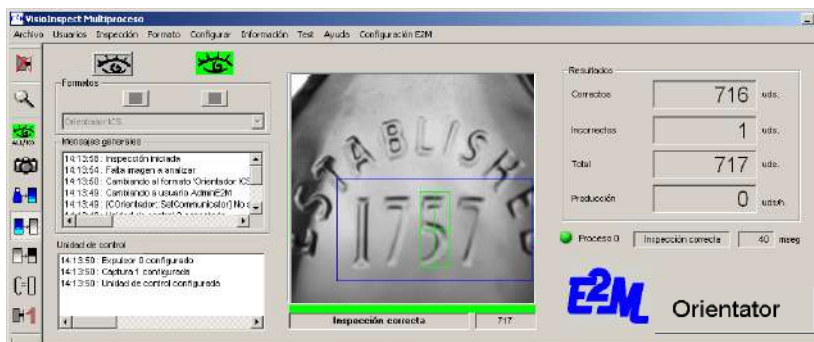




In-Line ORIENTER

Orienters for all kind of bottles, caps and cans



ORIENTING | INSPECTING | REJECTING
 ANY KIND OF EMPTY OR FULL BOTTLES AND CONTAINERS

Orienter of bottles, caps or cans

In-Line orienter over existing conveyor. The system distinguishes the container's incoming orientation and orients it accordingly

General features

Design:

- in-Line, freestanding turnkey system
- compact and easy installation over existing conveyor
- minimum change parts and easy format change over
- compatible with global format range
- robust, with safety covers
- optional: infeed timing drums

Production:

- low, normal and high speed lines
- provides smooth flow of oriented containers
- gentle container handling

Location:

- after a container unscrambler or depalletizer
- before a filler (off-set neck)
- before a labeler (face label, back label)
- before a case or tray packer

Advantages:

- compact system for multiple formats
- compact price and better ROI than rotary orientators

Incoming orientation detection

Incoming orientation is determined by sensing:

- mechanical shape
- face embossing, texture, graphics, handle position
- thread to body orientation (when consistent)

Sensing techniques:

- ultrasound, laser, photocells, infrared, proximity
- intelligent cameras (no PC required)
- B/W CCD 1024*768 pixel cameras (PC based)

Face detection algorithms:

- analog and digital signal processing
- 3rd party vision processing (intelligent cam)
- advanced **E2M** PC-based algorithms (cam)

Mechanical features

Orientation of:

- bottles and flasks:
 - glass or plastic
 - full or empty
 - round, square, triangular, oval, etc.
- caps
- cans:
 - quadrangular, triangular

Orientation strategies:

- **TurnNotTurn**: 180°
- **QuadraTurn**: +90°, -90°, 180°
- **FlexiTurn**: turns by a random amount of degrees

In-Line orientation by means of:

- motion transfer belts (contact belts)
 - 180°, +90°, -90°, FlexiTurn
 - belts are applied on bottle neck for most efficient motion transfer (translation + rotation)
- turning fork: 180°

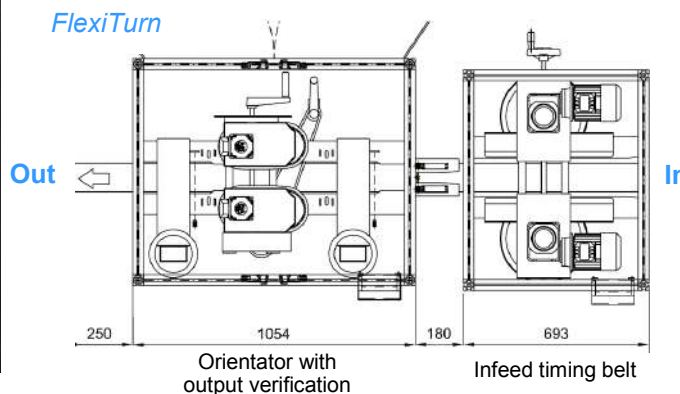
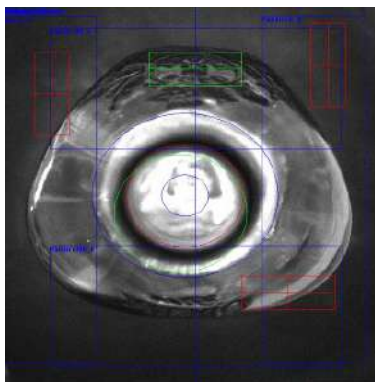
Infeed timing belts and drums

A minimum bottle pitch is required in order for the system to be able to turn every single bottle by the appropriate amount of degrees.

Motion control

Dual motor drive system: motion transfer belts

- **FlexiTurn** Series: medium & high speed productions:
 - PLC: Rockwell AB ControlLogix / CompactLogix
 - motion: 2 Rockwell Kinetix servodrives
- **QuadraTurn** Series: low & medium speed productions:
 - 2 Rockwell AB Ultra 5000 servodrives (M&S)
 - single motor drive system: turning fork
- **TurnNotTurn** Series: low & medium production speeds:
 - medium: Rockwell AB Ultra 5000 servodrive
 - low: frequency inverter, AC motor



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