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Label Verification

The Sencon Approach To Decoration Process Improvement



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Label Verification

Deco Defects

A Major Cause of Hold For Inspection (HFI)

- ◆ Mixed Label
- ◆ “Silver bullets”
- ◆ Distressed print
- ◆ Color fades
- ◆ Ink contamination
- ◆ Gross voids and partial brights
- ◆ High labels
- ◆ Poorly applied or incorrect paper labels



bad label



distressed
print



“silver bullet”

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Time And Money Lost Through:

- ◆ Mixed labels, “rogue cans”
- ◆ Risk of delivery delays
- ◆ Sorting costs

Therefore:

- ◆ Detecting labeling errors at the reduces unnecessary costs related to isolation sorting and delivery delay.

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Label Verifier Modules

Many Deco and Label Errors Are Transient

Such as:

- ◆ Ink drips / contamination
- ◆ Smears
- ◆ Washer stains
- ◆ Other intermittent type problems

May go undetected by the operator

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Label Verifier Modules

Some Deco and Label Errors Are Fliers

Such as:

- ◆ Mixed Labels
- ◆ Bright Cans

These also may go undetected by the operator

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The Ideal System

- ◆ High Speed
- ◆ Offer Instant Response
- ◆ Detects transient problems and fliers
- ◆ Located at the source of the problem

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Logical Place to Start:



Senccon Label Verifier 180

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Sencon Label Verifier 180

Designed as a “rogue can” detector

- ◆ A rogue can is a can with a label from a different batch of cans
- ◆ Cans not always cleared from the line at changeover
- ◆ Trapped cans in ovens, dead-plates and hard to reach areas

Detects-rejects

- ◆ Deco or labels different from the run deco or labels
- ◆ Possibility of mixed Alcohol, soda labels especially with common end sizes for both
- ◆ Dietary restricted label mixing



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Added Value

Located at the end of line, Sencon's Label Verifier 180 can be used as an entry level deco inspection system

- ◆ Detects Major Deco Defects - Water spots, Voids, color fades, bright cans
- ◆ Allows unfamiliar operational teams to adjust to online presence of a vision system (no vision experience or prior bad experience)
- ◆ Allows initial process improvements to be made gradually
- ◆ Very affordable, minimal investment required

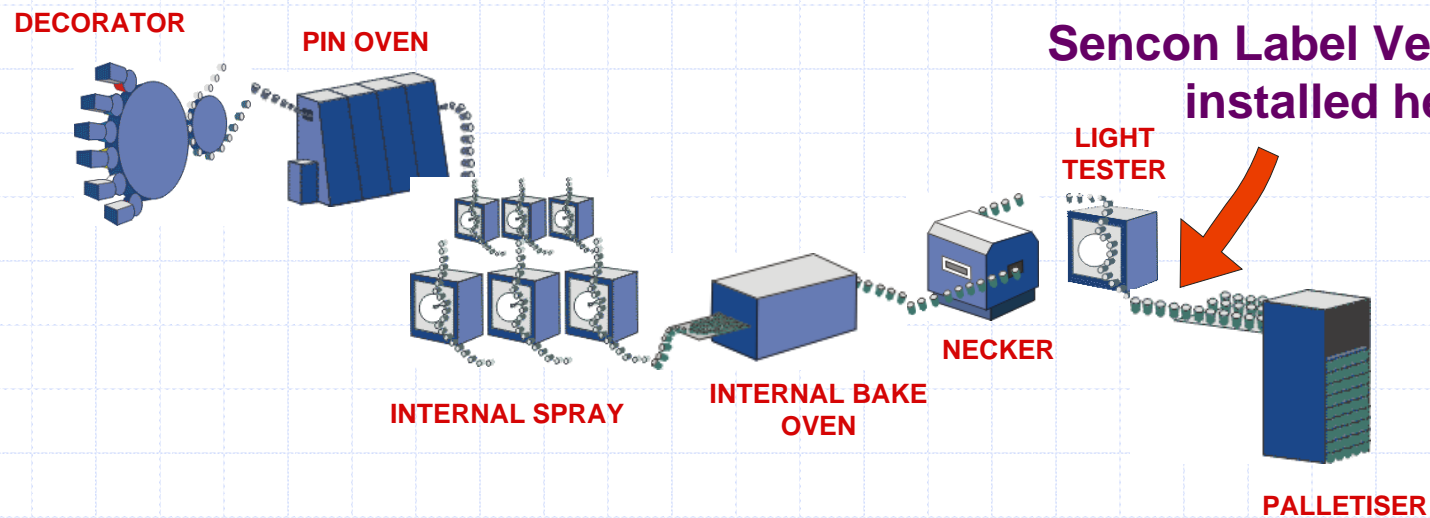
Easy To Install



End of the line ...



or on the Light Tester



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A very versatile system

The Sencon Label Verifier 180 is used by beverage, food, aerosol, and can fillers for label inspection



Single file conveyor installation



Paper Labeler installation

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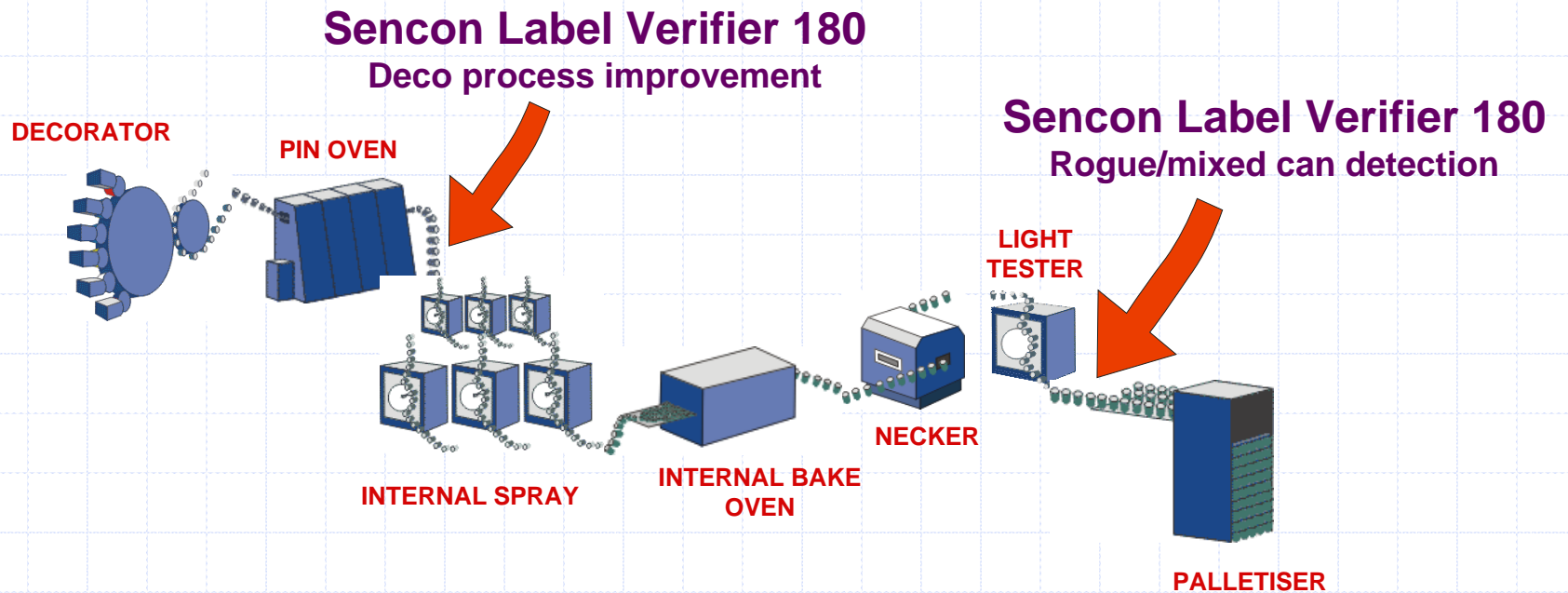
Label Verification

Next Step:

Sencor Label Verifier 180 On Pin Oven

- ◆ Locate at the decorator discharge (pin oven)
- ◆ Detect transient problems at the source

Sencon Label Verifier 180 (pin oven)



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Sencon Label Verifier 180

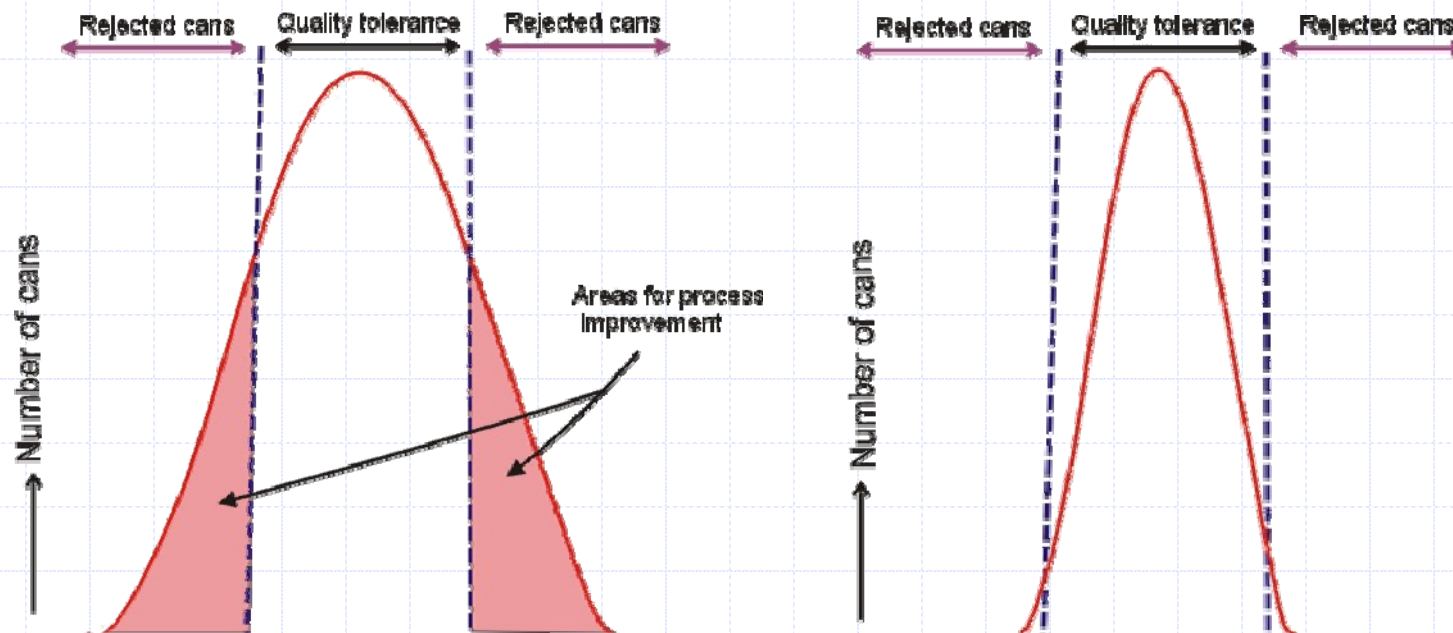
- ◆ Detect transient problems such as ink contamination, color fades, etc.
- ◆ Post pin oven Installation
- ◆ 3000 cpm max speed easily copes with the fastest decorator
- ◆ Immediate detection of decoration problems
- ◆ Acts as a process improvement tool

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Sencon Label Verifier 180 – process improvement

Before Process Improvement → After Process Improvement



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Be Prepared

Sencon Label Verifier 180 (at pin pven):

- ◆ Reveals variations in deco quality
- ◆ Increase the number of rejects
- ◆ So some operatives see it as causing not solving problems

But ...

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A Powerful Process Improvement Tool

To be fully effective operatives need to:

- ◆ Understand and interpret what the Label Verifier 180 is doing
- ◆ Be able to make prompt and appropriate interventions to the decorator
- ◆ Adjust deco process to reduce variability and avoid excess scrap or HFI
- ◆ Deliver a high level of quality improvement with fewer rejects

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Quality / Safety / Payback

- ◆ Check 100% of production
- ◆ Protect against supplying poor/incorrect can labels
- ◆ Minimal investment : fast return



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The Next Level ...

For eliminating detailed print errors such as:

- ◆ Missing text – eg. ingredients
- ◆ Lines and marks due to “Cut blankets”
- ◆ Problems with special design features

You will soon be able to use ...

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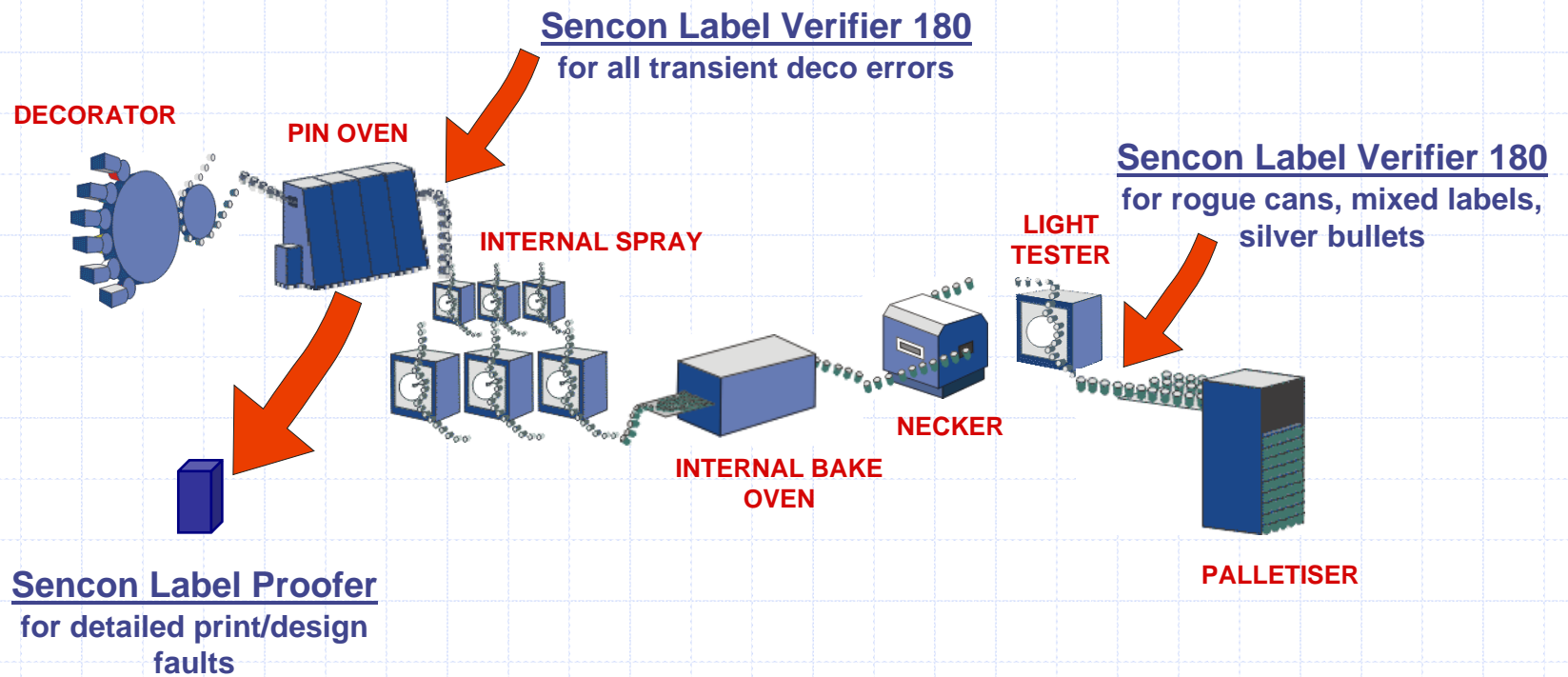
Label Verification

...The Sencon Label Proofer

- ◆ Automatic print quality checks
- ◆ Inspects print details
- ◆ Color metrics
- ◆ Plant floor tool

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The Ultimate Solution





Sencon Micro Leak Testing

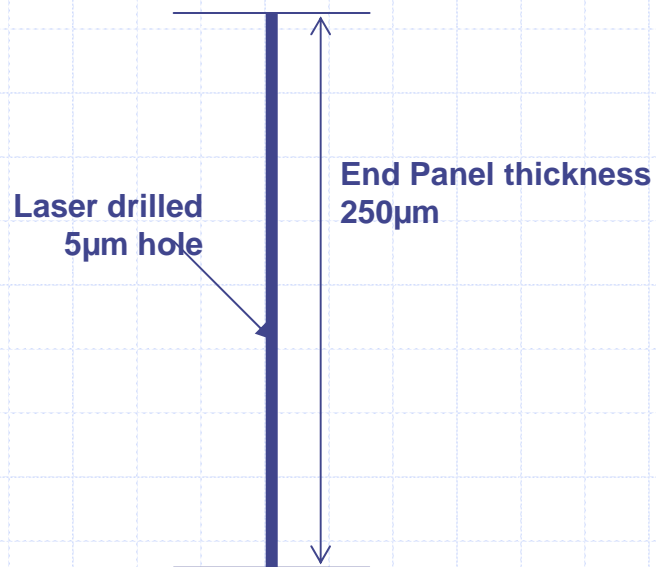
**Detect leakers on
converted lids**

Sencon MLT

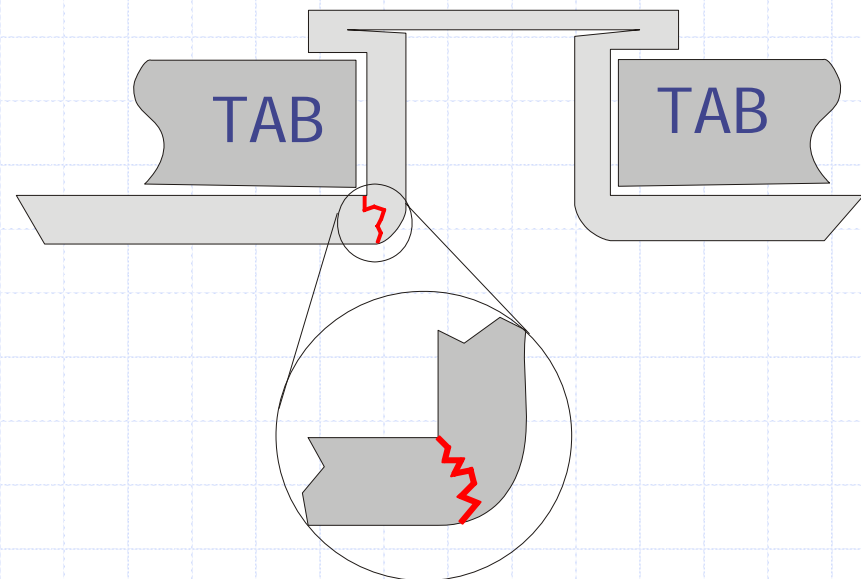
The nature of leakers

Why doesn't on-line light testing detect all leakers?

The "test end" micro leak



Micro leaks exhibit a more complex and restricted light path



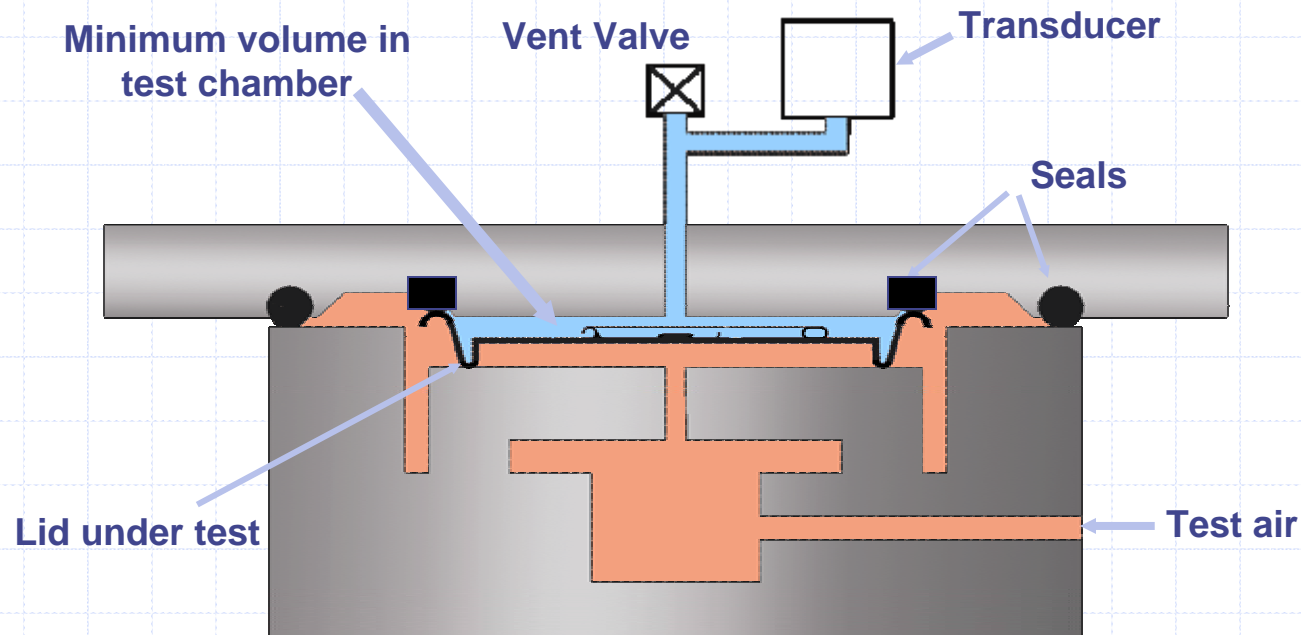
Sencon's Micro Leak Tester (MLT)

Sencon's MLT combines:

- ◆ Superior test sensitivity
- ◆ Compliant yet durable test chamber seals
- ◆ Low operational costs
 - Low maintenance
 - Uses factory air supply (built-in air cleaning pack)
- ◆ Low risk of false rejects.
- ◆ Test rates as high as 2% of production

How it Works ?

Test chamber design profile corresponds to specific end profile to reduce air volume for test.



Theory

The behavior of the pressure in the area above the lid can be approximated by the equation

$$PC = (Q \times T) \div V$$

Where: PC = the measured pressure change

Q = the leak rate through the lid

T = the elapsed time period

V = the volume of the sealed area above the lid

The nature of leakers

Problems and Solutions with leakers

- Elevated pressure can distort the end or cause a leak
- Very small fractures tend to close up and seal because of natural oxidisation or sugars in product
- Sencon use 25-30 psi for operational test pressure resulting in no product damage –yet optimum test efficiency

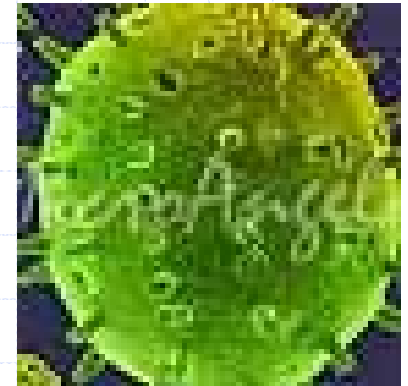
Seal Performance determines a tester's capability.

Consistency of the testing system

- ◆ Seals in **any system's test chamber** have to be able to accommodate a wide range of variables.
 - Airborne contaminants
 - Physical durability
 - Maintain consistent performance
 - Importance of not over stressing the end under test.

Atmospheric contaminants

- ◆ Microscopic airborne dust and pollen particles



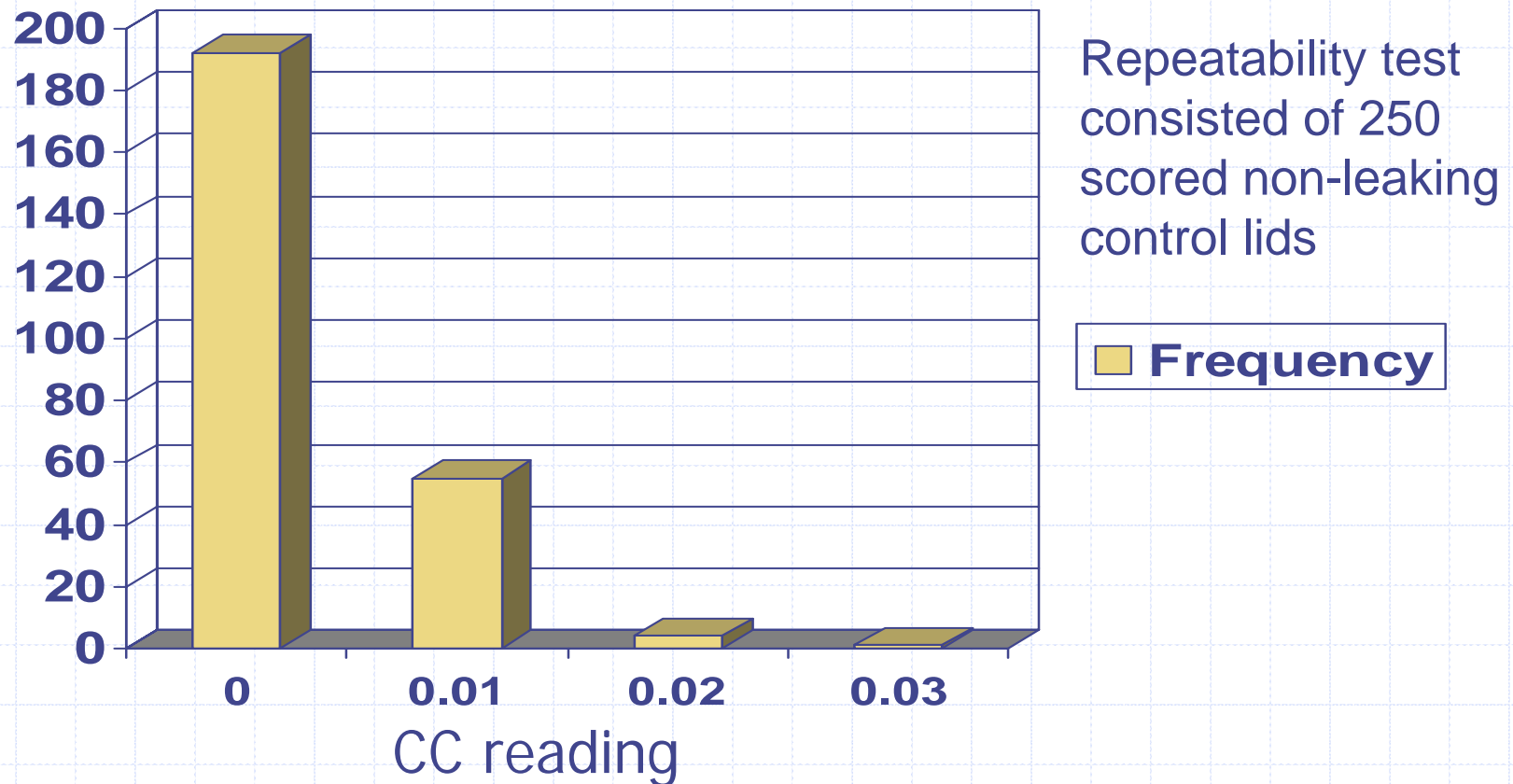
Pollen 10 to 100µm

Variability of ends

- ◆ Variations in end surface finishes 2 to 4 microns deep.
- ◆ Variation in the plate thickness, temper, and grain.
- ◆ Surface scratches

Pressure change testing

MLT Repeatability – system resolution ± 0.01 cc



Micro Leak Test Air Pressure Change vs Helium

	MLT Air Pressure Change	Helium based tester
Running costs	Low – Plant air supply	High – Bottled Helium supply
Sealing technique	Durable dry rubber seals which allow ends to remain commercial.	Durable dry rubber seals which allow ends to remain commercial.
Actual test capability	Only limited by chamber sealing capability	Only limited by chamber sealing capability
Test results	Displayed precisely in CC's to the nearest 0.01cc	Displayed only as Pass, Fail, Major fail

Auto sampling & test frequency

$$PC = ((Q) \times T) \div V$$

On-line system averages
15 ends/min per head

With a range of 12.5 to 18/min
to avoid belt synchronization

- Three lanes into one test head or
- Up to four lanes into four test heads
- Capable of testing over 2% of production



Sencon's experience in on-line conversion press testing.

MLT offers:

- ◆ Practical real-world on-line system
- ◆ High test rate
- ◆ Auto sampling during production
- ◆ Low false reject rate
- ◆ Low operational costs

Already supported by: MCC / Rexam / Ball / Silgan

MLT

Video Clips

