

NEWS & VIEWS



In-Machine Product Testing



VOLUME 28

Bringing product testing as close as possible to the point of manufacture has a great many advantages. Sencon have long understood that on-line testing should ideally be tightly integrated with the process and the closest integration is achieved by building the test operation into the process machine.

Key advantages of built-in testing are:

- No modification to the line layout to include additional test systems, resulting in no additional floor space usage.
- Immediate warning of a production fault when the test is carried out as soon as a product is produced, resulting in minimal product spoilage.
- Faults are caught straight away, holds for inspection, (HFI's) are reduced to a minimum.

Examples of built-in Sencon testers

End leak testing in the conversion press

- An estimated 95% of all on-line beverage end leak test systems are Sencon ELTP's.
- Mounted on the conversion press runout.
- Inspects ends while they're still on the press index belt.
- Low false reject rate avoids unnecessary line stoppages.



ELTP mounting on press runout

Leak testing during the necking process

Leak testing can bodies while still in the necker as with the Belvac 595LT simplifies the line and reduces can handling. The Belvac 595LT uses the well proven Sencon ULTP solid state light tester to provide high speed light inspection of cans during the necking process.

Label inspection inside LT 16 light tester

The latest development of this type is a miniaturised vision system which can be built-into an LT16 light tester. Checking every can, while its on the star wheel, ensures each can is carrying the current decoration and there are no major decoration faults. This reduces the risk of accidentally supplying wrongly labelled cans as well as acting as an end of line decoration safety net.

While checking 100% of production the vision system performs at a capability of 6 Sigma, this translates into a low accidental reject rate of just 2 in a million.



label inspector mounted inside an Alcoa LT16 Light Tester

For more information on End Testing, Can light tester upgrades, just tick the box on the reply sheet.

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In Brief

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SENCON

CONTROL DOWN THE LINE



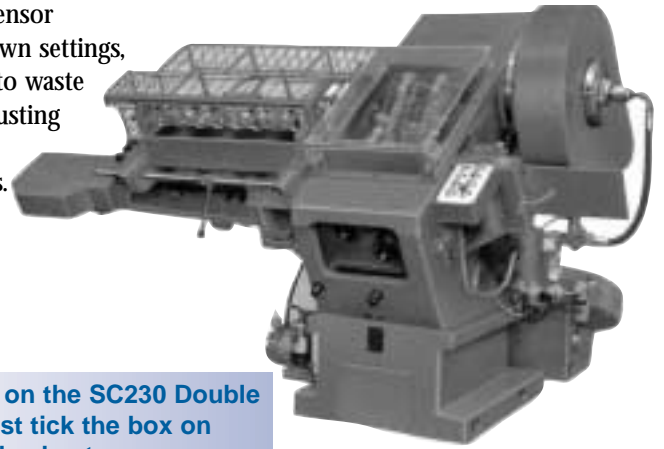
Sheet Fed Press Protection

Sencon's Double Sheet detector is widely used on coating lines to protect against double sheets passing through the process. What is less well known is that it's just as effective on the infeed to sheet fed presses.

Missing a double sheet at this point can cause immediate damage to the press tooling. This will happen if the sensor hasn't been tuned to the specific sheet thickness being run at the time.

The Sencon SC230 automatically calibrates at the beginning of a batch run, so there is no need to manually set the sensor.

During production the sensor constantly monitors its own settings, meaning you don't have to waste time checking and re-adjusting the sensor, pressing buttons or adjusting dials. The sensor is truly a 'fit-and-forget' device.



For more information on the SC230 Double Sheet detector, just tick the box on the reply sheet



Testing the Tester

Sometimes test machine performance figures can be presented in such a way as to make a machine appear to have groundbreaking abilities. Sencon has always tried to avoid this "sensational specification" stunt as it often relates little to the types of defect found in a real production environment.

Detecting very small holes in lids is a common misconception, as holes a few microns wide are almost beyond comprehension. With a single red blood cell at around 7.5 microns in diameter and individual airborne pollen grains typically 10 to 100 microns in diameter, you get some idea of how small these defects are.

Scaling up the hole and end panel thickness to more visible dimensions, we can begin to see what's involved.

Here are the figures:

One thou (thousandth of an inch) = 25.4µm (a micron being a thousandth of a millimetre, its symbol being µm)

A typical lid is made out of 10thou material, which is 250µm thick, with a hole of 2µm diameter the ratio is 125:1

To illustrate this, here we have a 15mm water pipe (just over 1/2 inch) which is to the same scale as a 2 micron hole through a lid.

The only practical way to produce a hole a few microns wide is with a laser, which is not exactly a common fault found in lids. To create a test lid, a larger hole is punched out of the lid which is then covered with a 5-10µm foil, the laser hole is drilled through the foil. Obviously the characteristics of the test lid bears little resemblance to a true fault.

The straight hole through the foil will allow a clear light path through the lid, but only as a laboratory test.

In reality, holes never form straight walled tunnels but more complex fractures, following the grain structure of the metal and lines of weakness. The pathway along a defect such as this is unlikely allow much light, if any, to pass and would generally not be detectable with testers based on light detection.

The moral of this story is that comparisons between specifications

from different manufacturers is not as easy as it would first appear. Sencon's belief is to continue to present real world performance figures for its machines that can be verified under production conditions. Artificial laboratory tests give a very distorted impression of what a tester will achieve in the real world.



15mm (1/2 inch) water pipe 1.875m long, is the same scale as a 2µm hole drilled through a lid



Basecoat Quality Improvements

Secondary corrosion of can bases is a problem we are hearing more about these days, along with poor mobility on filling lines.

During storage and transportation through the supply chain, whether we like it or not, cans occasionally leak. One can leaking is not such a big problem but due to the reduction in secondary packaging over the last few years there is less absorbent material available to soak up the spilt contents. Add to this a reduction in the can's metal gauge, results in cans corroding more rapidly than in the past. Where the problem started out with one leaky can, you can quickly have an entire pallet of leaky cans and an unhappy customer.

Base rim coating will reduce this problem, but

keeping the quality of the coating as constant as possible is not always easy. One of the key quality problems is the solids ratio of the coating. Typically, base rim coaters add only a very small amount of coating to each can so require relatively small day tanks to supply the coating. As is common with roller applicators, the excess coating is recycled back into the day tank, resulting in a degree of solvent evaporation from the process. This evaporation results in a higher solids to solvent ratio, which is less than ideal for coating.

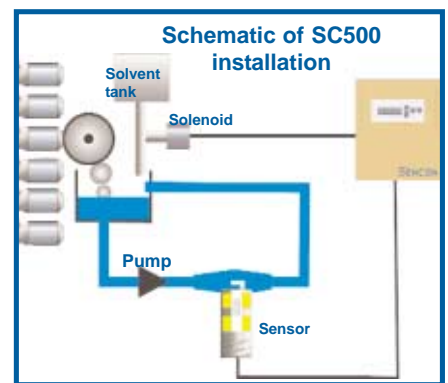
Simply, topping up the day tank will never correctly balance the solids ratio, emptying the tank and refilling with fresh coating works for a period of time but is not really a practical solution.

A number of customers

have found that the Sencon viscosity control system produces a permanent answer to coating variability. This system constantly monitors the coating and automatically doses solvent into the day tank to balance evaporation losses. The system will maintain a constant solids ratio resulting in a very stable coating which will give consistently greater corrosion resistance and less customer complaints.



Viscosity controller with sensor and supply line adaptor



For more information about the SC500, tick the box on the reply sheet

High Speed Solenoid Control

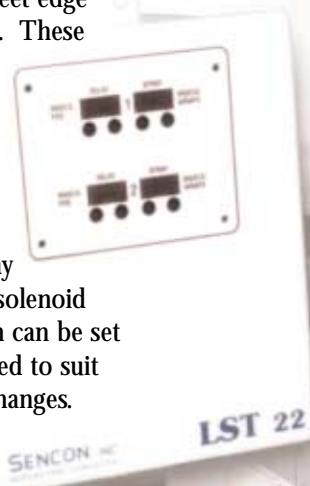


A common theme in high volume manufacturing is the need for very fast responses from solenoid driven actuators. Sencon have addressed this need with a family of solenoid driving products that significantly improve both the turn on and turn off time of DC solenoids while also reducing the total power, and therefore heat, within the solenoid.

This technology is used in our spray timers where reduced coating weight variation provides valuable cost and quality improvements. However, there are numerous other applications in all sectors of metal packaging where problems can be solved by better solenoid control.

One example is in **sheet coating** where sheet brakes are often necessary to prevent damage to the sheet edge when it hits the oven wicket. These brakes use vacuum to arrest the sheet, but it must be applied for exactly the correct duration and precisely the right time.

This is easily achieved using a standard LST22 spray timer with its Dual Voltage solenoid drive. The time and duration can be set digitally, and instantly changed to suit line speed or sheet weight changes.



For more information about the LST, tick the box on the reply sheet

New Product Catalog

Sencon are pleased to announce the release of its new product catalog.

The catalog has listings of all Sencon's regular products along with a number of new releases.

Finding products has been simplified with additional index pages along with additional product information.

This version of our catalog will be produced in two formats, the traditional hardcopy book and a CD based version.

The CD version offers a lot more than just a catalog. It contains the electronic version of the catalog with its own active index and hotlinks direct to product pages.

- A complete version of the Sencon web site in 5 languages.
- The very popular interactive Sensor selection guide.
- Training information on the intricacies of coating viscosity control.
- A 30 day trial version of the SPC application form Advanced Process Control.



To receive your copy of either the disc or paper version please tick either box on the fax back reply form

In Brief

You may have noticed the small images of cans and ends, next to the article titles. These have been designed to highlight which canmaking discipline the article is of direct value to. As always Sencon are trying to make life easier.

2pc canmakers



Beverage end makers



3pc canmakers



Food can end makers



Back issues of News & Views

There is a wealth of canmaking information available on the Sencon web site in the form of previous issues of News & Views. To access these, simply take the "News" link which is available on all of the Sencon web pages.



**Cannex returns to the USA from 26 - 28 May 2004
at The Colorado Convention Centre, Colorado.**

We look forward to seeing you at Cannex in Denver from 26 - 28 May 2004.

As always Cannex represents a great opportunity to discuss all the latest Sencon productivity and quality assurance solutions now available. A number of new Sencon products will be showcased at Denver for the very first time, so see they first at Denver.

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