Eye catching developments

The canmaking industry met at Cannex in Atlanta last month. John Nutting reports

Compound end liner goes straight

Dramatic changes in the appearance of canmaking machinery are rare, so the launch by Stolle Machinery at Cannex of the Linear Compound End Liner was guaranteed to catch the eye of visitors.

Unlike conventional liners with their complexity of rotating turrets and lining guns, Stolle's creation exploits the combination of programmed drives and a line of six stationary guns to carry out the process of placing the compound into the periphery of the ends.

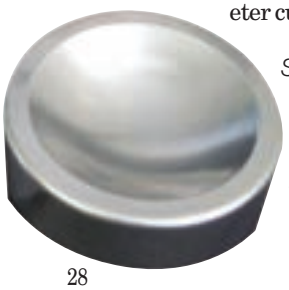
Stolle's project leader Neil Zumberger explained how the liner – said to be the first such advance for 30 years – uses compressed air to deliver the ends from belts either side of the six lining stations. Drive drums rotate the ends while the electronic guns activate for about three revolutions.

Any one of the lining guns cans can be removed for attention while the machine is running at up to 1,500 epm, or adjusted while in operation. "A size change requires just the changing of the down stacker unit," said Zumberger. "The simple mechanical design reduces its cost while the lack of rotating parts reduces maintenance. It is also easier to match the speed of the machine to a shell press, making a buffer unit redundant."

Savings to be made with a stretch

Manufacturing cost savings of $1 per thousand cans may not sound like much, but when it's accumulated into the one billion a year output of a modern high-speed D&I beverage can line it means a lot.

That's the kind of saving that Stolle Machinery reckons will be made with the application of new-style cupper tooling that moves metal from the base of the cup to the walls. Enabling the use of a smaller-diameter cut edge in the blank, it means that the finished can will be lighter by having a base dome with a thinner gauge.



Stolle's Stretch Dome cupper tooling promises weight savings for two-piece beverage cans

As a rule, the dome's gauge is the same as the starting gauge of the aluminium coil, but this technology offers canmakers another way of making metal savings in the canmaking process.

The patent-pending technology – called Stretch Dome – was first showcased at the StolleTech symposium in São Paulo two weeks before Cannex.

Secrets of Bud's 'bowtie' can shaping revealed

Details of the manufacturing techniques used for the shaped 'bowtie' Budweiser cans, launched on May 6, were revealed at Cannex during the previous week.

Packaging innovator Ruiz de Gopegui from Belvac, whose machine shapes the 'bowtie' Bud cans

The aluminium Budweiser cans, described by brewer Anheuser-Busch InBev as the 'world's most unique' and 'like nothing seen before' use a distinctive wasted shape reflecting the 'bowtie' design long used for Budweiser over years.

A-B InBev said its engineers had to solve a number of technical challenges after the project was started in 2010 to enable the cans to be made at high speed.

At Cannex, Belvac Production Machinery, based in Lynchburgh, Virginia, showed how its new Vertical Shaper, launched two years ago at a trade show in Germany, is used to create the novel shape of the cans, which are made at A-B InBev's MCC plant at Newburgh, New York.

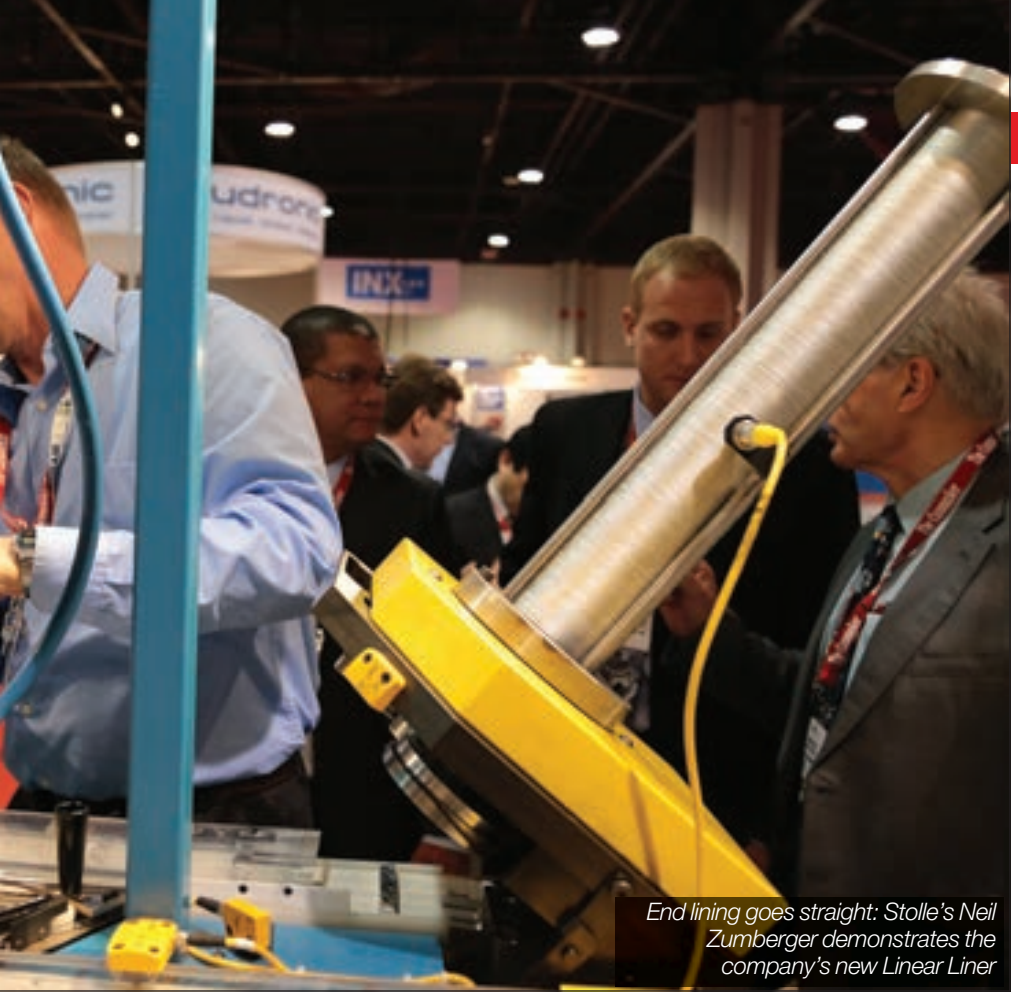
The machine uses 16 vertically-orientated turrets with tooling to modify the printed preforms before they are necked, also on a Belvac system. The cans, with a final volume of 11.3 ounces rather than the usual 12 ounces, have thicker side walls than normal to overcome the loads in the necking system, and in the seaming operation.

Belvac's recently-appointed VP of branded package solutions Ricardo Ruiz de Gopegui showed examples of the cans on the company's booth, along with videos of the machine. "Belvac had been getting a lot of inquiries from brand owners about new designs," he said, "which is why Belvac is working on helping them. This is the first example of what is possible. It could be a game changer."

Ruiz de Gopegui previously worked for PepsiCo in New York, firstly in packaging innovation and then in long-term R&D.

Virtual reality reaches canmaker training

Focus of UK-based canmaking machinery manufacturer CarnaudMetalbox Engineering at Cannex was its interactive display system that enables the better training of technicians and operators in the



End lining goes straight: Stolle's Neil Zumberger demonstrates the company's new Linear Liner

Cannex received visitors from Ball's plant in Rome, Georgia, including (l to r) plant manager supervisor Gary Clark, EHS manager Rich Bohm, Jamie Hall and plant engineering manager Jace Burroughs

Also present were Alucon's international business manager Hiroki Matsui; Shigekazu Takeuchi, president of Takeuchi Press Industries in Japan; and brother Takaaki Takeuchi, managing director of Alucon in Thailand

Machine maintenance simulated in real time on the CarnaudMetalbox Engineering booth

dis-assembly and rebuilding of the company's bodymakers, trimmers and neckers.

With the use of video-game-style controls and 3D glasses, visitors to the show were able to remove and replace components while moving around the machine.

The software for the system was developed in collaboration with the Nuclear Advanced Manufacturing Centre at Sheffield University. "This is ideal for training without the need to bring people to Shipley, or to dedicate a machine for training purposes," said Marc Hoche, CMB Engineering's new sales manager, who has a strong engineering background, having worked for Cummings and Caterpillar.

From the small to the tall in D&I

Reduced running costs and more flexibility for size changes were behind the launch at Cannex of CarnaudMetalbox Engineering's latest D&I bodymaker for two-piece beverage cans, called the BM5610.

A development of the dual-stroke 5000 series machine, the BM5610 provides a number of options that reduce energy consumption while an adjustment to the architecture enables the range of can sizes to be expanded from 15cl to 56.8cl without the need to change the ram for the tallest.

"The key is that the 5000 couldn't accommodate the can height of 187mm necessary to give an imperial pint volume (56.8cl) with changing to a 610mm stroke and changing the ram," said CMB's Dan Egerton. "With the dual stroke at 26 inches it can go to 660mm."

Lower running costs result from the option to use two types of drive clutches in addition to the usual hydraulic version that requires its own power plant. "The first option is a pneumatically-operated clutch, the first of which is being delivered to a US plant," said Egerton. "New is a dry-running hydraulically-operated clutch that uses the high-pressure oil system from the bodymaker that offers a 3kW saving."

Also offering savings is a variable frequency drive for the oil power pack giving a 3.5kW saving per bodymaker and a standby mode for the machine. "This is good for when there are regular line stops for label changes," said Egerton. "All these features can save up to $11,000 per year, per bodymaker."

Easy-open metal crown with seamless conversion

A new design of easy-open metal crown for bottles is claimed to offer consumer benefits with seamless conversion on filling lines.

Abe Frishman, chief executive of Texas-based World Bottling Cap LLC (WBC), was demonstrating in Atlanta his patented Easy-Pull Bottle Cap which incorporates a ring-pull into the face of the crown that when lifted separates a slice of the closure, simplifying the opening.

Because the ring pull sits flat against the face of the crown, it is said to feed through conventional capping lines without modification.

On his company's website, he says: "The ▸

Ball Aerocan sent its aerosol can chiefs in the Americas and Europe, Daniel Rabbit and Giorgio Aliprandi respectively. Aliprandi (right) had just been elected president of the international aluminium aerosol association Aerobal

Left to right: can plants manager at Mexican beverage canmaker Fabricas Monterrey (Famosa) José Antonio Rodríguez and engineering manager Gilberto Pérez, pictured with Ball's manager international operations support, Terence Bolton

Easy-Pull Bottle Cap packaging innovation utilises a bottle opening method that is clearly a major improvement in the opening of glass and aluminium bottles."

Frishman says the Easy-Pull Bottle Cap has multiple patents and additional patents pending, including International Patent applications (PCT), which incorporates manufacturing processes of using either a PVC or PVC-Free liner, as required, that meets the International Environment Protection and FDA requirements for consumer usage.

The Easy-Pull Bottle Cap is available in a variety of colours and can include printing on the surface edge ring and rivet with one to four colours with any corporate logo or product packaging design.

WBC is also offering lower-gauge metal crowns.

Crown with a lift: WBC's Easy-Pull Bottle Cap

Talking points

Richard Estrada reviews some of the issues discussed at Cannex

It's time to stop talking about Latin America's potential, says Lee Milazzo of Perm Machine & Tool Co, and start seizing opportunities in Mexico, Brazil, Peru and a dozen other countries. That was a popular position for buyers and sellers at Cannex 2013, noting the crush of competition in Asia and slow growth in US and Europe has companies looking for the next frontier.

Of course, it could require creativity for the canmaking industry to cash in on this new market.

No one knows that better than Milazzo, whose Indiana-based company produces chains, lubrication systems and other equipment for the metal decorating industry. He recently made a significant sale in Peru, using a financing package backed by the US government to assist an expansion-minded customer.

"We did about a $2 million deal in Peru," said Milazzo, noting the financing went through the Export-Import Bank of the United States. "Where interest rates in Peru were about 17 percent for a corporation to buy capital equipment, we were able to provide them with low-cost financing at about 4.5 percent. Without that financing, the deal probably doesn't get done."

That government-backed loan gave his Peruvian customer the low interest rate it needed to for such a sizable investment, and it's given Perm Machine & Tool an entry point into a market hungry to upgrade its equipment and services.

"Central America, South America … those are the markets we're looking to expand into," said Milazzo, whose company also offers Wagner coaters and ovens and Hoe printing presses. "We recognise the potential. The economy is improving, the population is growing … we want to be in that market."

Sun Chemical's global sales director for metal decorating inks, Eduardo Alegría, explains how the anti-counterfeiting technology works to Euro Asia Packaging's managing and deputy directors W T Lin and Elaine Tsui

That was the consensus at Cannex, which brought together everyone from global manufacturers making equipment worth millions of dollars to small tool-and-die firms making spare parts that cost a few dollars apiece.

Economics is often a crucial factor in Latin America's purchasing decisions, particularly when deciding whether to invest millions in a new piece of equipment – or a fraction of that amount for an upgrade.

That is one of the lures that DRT Manufacturing has to offer cost-conscious customers in the region. DRT was happy to

What's in a name in Vietnam

Vietnam's growing drinks market continues to attract canmaking investment, the latest being by Re-xam A.B.M. with a new line being added at its facility near Hanoi.

The company (which has no relation with Rexam PLC in London) has ordered ovens, washers and titration equipment from PAC International, said PAC sales director Bill Harmon.

The line is understood to be fed by a Heilbronn cupping press and uses CMB Engineering bodymakers.

Re-xam A.B.M., which was formerly know as Vina Can, sold its first plant at Dong Nai to Crown, which also operates an adjacent plant acquired from Interfood a number of years ago.

Japanese brewer goes for 204 CDL ends

Japanese brewer and drinks firm Kirin is reducing the diameter of the ends on its beer cans, but they're not going to be 202, as might be expected.

They will be 204, and using the lighter-weight CDL design that is increasingly being used around the world, said Jim Wilkins, executive vice president at Ohio-based Container Developments Ltd,

emphasize its old-school roots at Cannex, declaring it was the originator of the easy-open end 40 years ago, but just as quick to remind us that it's always looking for new technology.

"A big focus for us on the food side is cost reduction, and we've got new [end] tab technology that, compared to others in the market, is a very cost-effective solution," said operations chief Greg Martin.

He noted that one example of cost savings is thinning the material used in tabs, and another is adapting existing equipment rather than requiring a customer to buy new machinery and re-engineer the production line. Not only could the latter require taking on debt, it could force the line to be shut down for a few days while the new machine is installed and employees trained.

That is one of the selling points for DRT's Vision Quad 4-Out beverage system. It allows customers to increase production of an existing 3-Out machine by a third, without having to adjust for a larger footprint. Each of the presses delivers 750 strokes per minute, so the upgrade kit can ramp up production from 2,250 to 3,000 ends per minute.

A member of the DIC group, metal decorating inks producer Sun Chemical is looking to expand into the Americas. The company sees its opportunity in offering protection with anti-counterfeiting technology for companies who want to sell products in these markets.

"There are many reports of counterfeiting, but with a small investment we can find if a can is fake or the original," said Eduardo Alegría, global sales director for metal deco inks (pictured left). Sun Chemical makes inks that appear only under infra-red light, as well as holograms that can confirm a product's authenticity.

Companies who believe their products are being counterfeited – resulting in lost sales, as well as bad publicity due to the sub-standard material being sold in its place – can now expose these bogus containers whether they sit in the warehouse, on delivery trucks or even stacked on store shelves.

Alegría cited a case in China where olive oil was being counterfeited. The package was identical, but the material inside was closer to the quality of motor lubricant than virgin olive oil, he said. Such stories are rampant throughout Asia, and Latin America suffers from a similar scourge.

As Latin America's middle class expands, and consumers become focused on the quality rather than quantity of what they're buying, such security will become a selling point for savvy processors.

who was visiting Cannex with a team that included chief executive Pete Stodd.

"These will be the first 204 CDL ends in the world," said Wilkins. "They will be made by Universal Can Corporation, who we have been working with for three years."

Around 120 billion ends using the CDL design are made every year, said Stodd, which is about 40 percent of the world's total beverage end output.

European suppliers team up on end lines

A collaboration between three European companies to offer complete production lines for DRD cans and ends was introduced at Cannex.

UK-based FSG Tool & Die supplies the engineering, tooling and dies for the lines, while Germany's Heilbronn Container Presses provides the presses. Conveying and handling equipment is manufactured by Swedish company NPB, a supplier of balancers, baggers and palletisers amongst other machines.

The finished lines produce DRD cans, round and non-round easy-open ends, and sanitary ends. End production speeds of up to 4,800epm with one shell and two conversion presses are possible, and integrated on-line vision inspection systems check the full output of the line.

• *More Cannex reports next month.*

It wasn't far for executives from The Coca-Cola Co, which has its global headquarters in Atlanta, to visit Cannex. Pictured (l to r) are Dan Quigley, managing director, metal packaging; Jonathan Butcher, director, metal packaging; and Dave Smith, strategic procurement manager

Tony Bhalla (third from left), chief executive of Anheuser-Busch Inbev subsidiary Metal Container Corporation, is a Cannex regular

Belvac Production Machinery, 237 Graves Mill Road, Lynchburg, Virginia 24502, USA. Tel: 1 434 239 0358. Fax: 1 434 239 1964. Website: www.belvac.com

CarnaudMetalbox Engineering Ltd, Dockfield Road, Shipley, West Yorkshire BD17 7AY, United Kingdom. Tel: 44 1274 846200. Fax: 44 1274 846201. Website: www.carnaudmetalboxengineering.com

Container Development Limited, 6450 Poe Avenue, Suite 511, Dayton, Ohio 45414, USA. Tel: 1 937 264 2370. Fax: 1 937 264 2390. Website: www.cdl-plus.com

DRT, 618 Greenmount Boulevard, Dayton, Ohio 45419, USA. Tel: 1 937 298 7391. Fax: 1 937 298 7190. Website: www.drtmfgco.com

Heilbronn Container Presses, Wannenäckerstr. 36, Heilbronn 74078, Germany. Tel: 49 7131 296 82. Fax: 49 7131 296 64. Website: www.heilbronn-container.com

NPB Automation, Industrigatan 14B, Jönköping S-55302, Sweden. Tel: 46 36 354 060. Fax: 46 36 354 061. Website: www.npb.se

Perm Machine, 9660 Industrial Drive (PO Box 660), St. John, Indiana 46373, USA. Tel: 1 219 365 5000. Fax: 1 219 365 4847. Website: www.permmachine.com

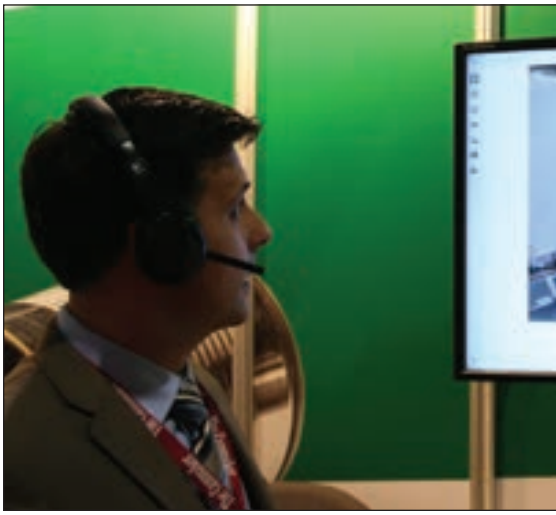
Stolle Machinery, 6949 South Potomac Street, Centennial, Colorado 80112, USA. Tel: 1 303 708 9044. Fax: 1 303 708 9045. Website: www.stollemachinery.com

Sun Chemical, Grindlenstrasse 3, 8954 Geroldswil, Switzerland. Tel: 41 44 749 5050. Fax: 41 44 749 5055. Website: www.sunchemical.com

World Bottling Cap, 3044 Old Denton Road 111-225, Carrollton, Texas 75007, USA. Tel: 1 972 245 0555. Website: www.worldbottlingcap.com

Measurable success

Amongst the developments at last month's Cannex de las Américas were a wide range of innovations in test and inspection equipment. Daniel Searle reports



Inspection technology was showcased at Cannex in a movie theatre format – complete with pots of popcorn – on the **Applied Vision** booth with leading canmakers from Ball and Rexam amongst the audience.

Bill Walton III, who is plant manager at Ball's beverage can plant at Rome in Georgia, also appeared in the movie which was promoting the virtues of Applied Vision's DecoMaster label quality control system, which views the images on the decorator's printing blanket before the inks are applied to the cans, enabling control of the print at source.

"We've been using the system for a year," said Walton in the movie. "Decorator operators recognised that this was going to help them in their job."

Ball's Rome plant runs one of the most highly productive lines in the world, said Walton, with line speeds of up to 3,800 cans per minute and output of 12 million cans a day.

Also in the audience was Rexam's business development chief Mark Stafford, who added that the canmaker's Chicago plant would be installing the DecoMaster system.

Launched in 2012, DecoMaster is the latest addition to Applied Vision's KromaKing range of colour inspection equipment and detects a range of decoration issues including colour shifts, cut blankets, ink blobs and smears, loss of colour, excess colour, and missing date codes, with any flawed cans automatically rejected by the system – reducing hold for inspection (HFI) by as much as 70 percent, says the company.

Applied Vision, 2020 Vision Lane, Cuyahoga Falls, Ohio 44223, USA. Tel: 1 330 926 2222. Fax: 1 330 926 2250. Website: www.appliedvision.com

• A live video link-up at Cannex to **CMC-Kuhnke**'s office in Berlin, Germany enabled the company to remotely demonstrate its full range of gauges.

Vice president Alex Grossjohann introduced visitors to CMC-Kuhnke's can and end testing equipment, with managing director Thomas Duve, connected from the Berlin office through a webcam, giving practical demonstrations of the systems.

These included the upgraded Mars-ENR fully automatic enamel rater, which operates at four cans a minute rather than the current benchmark of three. The unit, suitable for use online or offline, offers a range of responses to out-of-specification results, including alarms and stopping line production.

The system handles 8oz and 16oz cans without any changeover required, and the stainless steel construction incorporates a self-cleaning system.

CMC-Kuhnke's SeamScan XTS, an X-ray seam tightness inspection system, was also on show. Initially installed as an offline system at the Lech brewery in Poznań, a fully-automatic online version of the system was recently installed at a leading brewer in Mexico, to analyse samples before returning the cans to the production line. Another system is also in operation at a beverage filler in New Zealand.

Other gauges being demonstrated by CMC-Kuhnke included the EMS system for measuring end dimensions, including the chuck fit; the PNRV system, which measures the deflection of ends seamed to cans under different pressures, to assist end developers when testing various thicknesses and profiles; and semi-automatic versions of the company's front end and back end gauges, designed to offer a lower-cost option compared to fully-automatic systems.

CMC-Kuhnke, 1060 Broadway, Albany, New York 12204, USA. Tel: 1 518 694 3310. Fax: 1 518 694 3311. Website: www.cmc-kuhnke.com

• US company **Sensory Analytics** introduced its latest range of SpecMetrix ACS film weight and coating thickness measurement gauges for two-piece cans.

The ACS system for single cans, and the new ACS10 which can automatically measure and provide film weight distribution mapping on up to ten cans without operator intervention, can measure the thickness of the overvarnish, inside spray coating, rim coat on the base of the can, and identify the overlap area.

The non-contact systems can also measure the washcoat and all inside coatings on two-piece D&I food cans, as well as on all other aerosol, food and beverage containers. and specialty packaging products.

Sensory, based at Greensboro, North Carolina, also showcased its non-contact SpecMetrix In-line film weight measure-

Cans film festival: Applied Vision screened a film for visitors, complete with popcorn, covering its Decomaster technology

Below: CMC-Kuhnke's Alex Grossjohann connects with Thomas Duve, at the company's Berlin office

Bottom left: Sencon's Andrew Hinks introduces the company's latest improvements

Bottom right: TRAC Measurements's Daniel Pettitt demonstrates the Z340 inside spray gauge, launched at Cannex

ment system for in-process measurement of wet or dry flat sheets and coils, designed to improve coating quality and reduce production costs.

Sensory Analytics, The Sensory Building, 4413 West Market Street, Greensboro, North Carolina 27407, USA. Tel: 1 336 315 6090. Fax: 1 336 315 6030. Website: www.specmetrix.com

• UK-based **TRAC Measurements** launched two inspection systems at Cannex, covering the end and can sectors.

The Z603 opening force gauge tests ends and records the pop and tear force, tab strength, and partial opening force, to an accuracy of within 0.05 pounds. The gauge, which TRAC has already sold to a customer in Asia Pacific, is suitable for ends of sizes 200 to 300.

Also launched at the show was the Z340 inside spray measurement gauge. The system features a rotating probe which enables full measurement of the inside of the can body, including on the neck, chime and dome. The non-destructive system, which is compatible with some shaped cans, is designed to assist operators in adjusting and optimising spray guns.

TRAC Measurements, Nedge Hill Science Park, Telford, Shropshire TF3 3AJ, United Kingdom. Tel: 44 1952 210 020. Fax: 44 1952 299 804. Website: www.tracgroup.com

• **Quality By Vision** introduced a range of updates to make its gauges more flexible and user-friendly.

The Israel-based company's radial load gauge now features thick plastics windows, to allow the operator to view the testing process while still providing sufficient protection.

New software has been developed for the Seametal HD, a gauge for measuring a range of dimensions of double seams including seam height, body hook and cover hook. The software, which is compatible with the PC operating system Microsoft Windows 8, enables operators to toggle between using a video-based camera system and a micrometer.

Quality By Vision has also developed a simplified version of its Seametal system specifically for the growing craft beer canning sector.

Quality By Vision, PO Box 616, Yokneam Elite 20692, Israel. Tel: 972 4959 1147. Fax: 972 4959 1059. Website: www.qbyv.com

• **Sencon** introduced a range of improvements to its gauges at Cannex, focusing on a LED lighting system that offers a range ▸

of benefits compared to conventional halogen lamps.

The LED lamps operate at a more suitable wavelength for solid-state receptors, increasing the sensitivity of the unit. They also require less time to perform each test, increasing the operating speed of the gauges, and consume less energy.

The retrofittable Universal Light Tester Package is suitable for upgrading pinhole leak detectors. An established package, its recent improvements include an enhanced LED lighting system which offers a longer life and lower heat generation. The sensitivity of the detector has also been increased, and now can be used with a wider range of can sizes.

On the company's End Light Tester Package, an on-line system for detecting pinhole leaks and cracks in converted ends, Sencon has increased the LED density and power to improve sensitivity and reduce dead spots, missed leakers and false rejects.

A 'Flash Control' function reduces the LED output after a large leaker is detected, to prevent saturation of the detector. The system can also now accommodate 'sprung' and bent ends.

Sencon has also improved its Micro Leak Tester, for sample-testing ends for leaks smaller than 0.01cc/sec. A lower test pressure prevents distortion, enabling ends to be returned to the line, and the Automatic Pressure Control feature reduces the test pressure after a large leaker is detected, again preventing the detector becoming saturated.

Improved connectivity enables operators to link the testers to any PC or tablet through an Ethernet connection, providing real-time data collection and analysis.

Sencon, 6385 West 74th Street, Bedford Park, Illinois 60638, USA. Tel: 1 708 496 3100. Fax: 1 708 496 3105. Website: www.sencon.com

• Australian company **Versatile Technology** promoted its newly-completed range of automatic gauges for cans.

These included the KW141A system for testing axial load, dome growth, and buckle pressure; the MP44 back-end gauge including reform scanner; the AD142 front end gauge; and the HD131 can enamel rater.

The automatic gauges are fitted with V2 embedded microprocessors, giving the systems more reliability than those controlled by a PC with Microsoft Windows, says Versatile.

The company also highlighted the benefits of the fully-automated equipment, such as enabling operators to increase testing frequency.

Recent installations have been in projects at Crown in Malaysia, Yinlu in China, and MS Glass facilities in Egypt and Saudi Arabia.

Versatile Technology, 2 Industrial Avenue, Notting Hill, Victoria 3168, Australia. Tel: 61 395 488 983. Fax: 61 395 488 958. Website: www.versatiletechnology.com.au

• **Prime Controls** introduced a newly-designed light head sensor for leak detection in ends. The LH200 is installed under the transfer belt at the out-feed of a conversion press and detects holes of down to five microns and below.

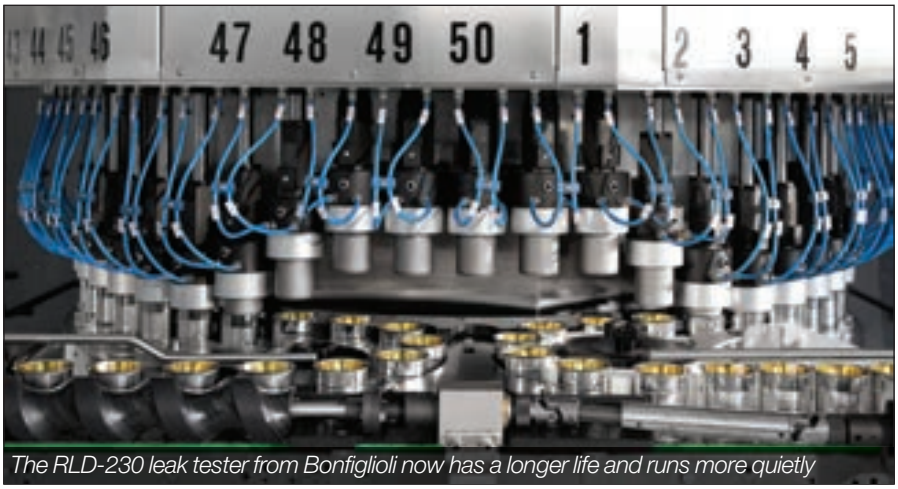
Straight holes, as small as one micron, can also be detected directly under the rivet, says Prime.

The system was developed in collaboration with Stolle Machinery, which designed an associated light source.

An advance on Prime's existing LH100 light head sensor, the sensitivity of the LH200 can be adjusted without the unit needing to be opened. It also provides diagnostic information – transferred through an interface cable – and internal design changes have reduced lead times in comparison to the LH100, ensuring quick delivery.

Operators can exchange existing LH100 systems for a discounted LH200 unit.

Prime Controls, Inc, 4551 Gateway Circle, Dayton, Ohio 45440-1711, USA. Tel: 1 937 435 8659. Fax: 1 937 435 2091. Website: www.primecontrols.com



The RLD-230 leak tester from Bonfiglioli now has a longer life and runs more quietly

Other developments

• Middle East canmaker Al-Jomaih has installed an online helium-based micro-leak tester for its end manufacturing operations.

The can and end-maker, based at Riyadh in Saudi Arabia, previously used an offline micro-leak detector supplied by UK-based company **Ovec**. In March Al-Jomaih upgraded to Ovec's AET1800 system, which takes samples from each conveyor lane and detects leaks as small as 0.000003 cc a second.

The system is more than 1,000 times more sensitive than other detectors on the market, says Ovec, and detects worsening leakage problems long in advance of online air pressure testers.

Ovec Systems, 5 Brown Street, Coatbridge, Lanarkshire ML5 4AS, United Kingdom. Tel: 44 1236 710 680. Fax: 44 1236 710 747. Website: www.ovec.co.uk

• Italian company **Bonfiglioli Engineering** has improved two of its leak testing systems, the in-line RLD-230 for can bodies, and the KBA for aerosol cans.

On the RLD-230, the company has redesigned the testing chamber group unhook systems, providing them with three rods rather than one. This improves wear resistance, says Bonfiglioli, increases life and response time, and reduces overall dimensions of the system.

The central carousel is now mounted on the base bearing, rather than directly onto the bearings, improving its rotational stability, reduces vibration-related fatigue of the system, and lowers noise levels.

Maintenance of the KBA tester has been made easier with improved access to filter and electrovalves, both of which can be accessed without removing the safety guards of the central carousel.

The working height of the system has been lowered, and can now be mechanically integrated into a high-speed aerosol can production line.

Meanwhile, Bonfiglioli has opened two new branches – in Milwaukee, Wisconsin, and in Karlsfeld, Germany.

Bonfiglioli Engineering, via Rondona 33, 44018 Vigarano Pieve, Ferrara, Italy. Tel: 39 0532 715 631. Fax: 39 0532 715 625 Website: www.bonfiglioliengineering.com