

Danes without strains

An ACT II carton blank computerized QC system has helped efficiency, quality, reduced costs and removed eye and back strain at Danish converter Schouw

Like MOST SUCCESSFUL folding carton manufacturers, Schouw Packing of Aarhus, Denmark sees quality, cost and delivery as the keys to continued market growth. Now, thanks to the introduction of a computerized quality control system the ACT II, it has improved all three.

Part owned by Elopak, Norway, the company converts liquid cartons. At an early stage it saw the limitations of manual blank checking. A trained quality control technician was required to look at a carton blank through a template which had been marked with the correct dimensions. If the scores or edges of the blank did not line up precisely with the template, the technician noted the deviation. Such readings were necessarily subjective and time consuming. It could take longer than an hour.

With an ACT II system, however, checks can be achieved in just three to eight minutes. This means less converter downtime for checking and adjustment, enhanced production efficiency and cost reduction.

Standards

The system, manufactured by Indocomp Systems of the USA, began operating at Schouw in July 1988. Quality assurance procedures have been significantly improved, says the company, by precisely gauging heights, symmetry and dimensional accuracy and comparing results with predetermined standards. Also there is no longer a need to replace precision glass templates at a cost of several thousand pounds each.

"Our quality control staff, are very happy with the ACT II system," says

Knud Kristensen, EDP manager of Schouw. "They must check 20 to 30 different styles of carton blanks and the programs for all are stored in the computer." Up to 100 carton histories can be stored on the hard discs and expansion is possible. "This lets them test very quickly with confidence." The company now requires that a complete set of blanks (all die positions) must be run through the system for formal approval after every tooling change and before any new carton designs are released for production.

Personnel had no difficulty learning to use the system, according to Mr Kristensen. Indocomp provided training. Staff reported that they did not experience the eye and back strain which frequently resulted from sitting for long periods peering at a glass template.

In addition to the computer and printer, the system features a precision X-Y table on which a blank is placed. Maximum blank size is 432 x 432mm, but larger tables are available. After putting the blank on the table, the operator enters the

temperature change or gauge wear.

Then the gauge passes back and forth across the carton blank to read every pertinent dimension. Some 250 score height readings are stored for every 6.4mm the gauge travels. One of Schouw's largest cartons - the two litre Pure-Pak gable top blank - is completely checked in 6.5min. The much smaller half litre requires 3.5min.

Data points

The computer uses the collected data to determine the centre point of each score as well as the score's height and symmetry. It also ascertains the height and location of each blank edge relative to the scoring. With all the data points, the computer easily determines all the major carton dimensions, notably panel widths and flap lengths. Once the test is complete the system prints out the results in one of several formats (score/edge dimensions; score quality; score/edge profile or bar graph).



carton number into the computer. The rest is automatic.

An LVDT height gauge on the table moves from its home position along the preprogrammed path for the carton being inspected. Before the actual test, the gauge passes over a gauge block which matches the height of a known score profile. The program then automatically calibrates an output signal from the height gauge to correspond to the height of this block. This compensates for any drift in the analogue to digital electronics through

Schouw has historical files on every production run, which could be invaluable in the event of a customer dispute as well as for tracking production line performance. Units in various locations can be interfaced through telephone lines to share information.

In addition, the company uses the system extensively in its R and D programme. As new packs are designed and prototyped, they can be quickly tested before development proceeds.