Advanced Printing Technology Specifically for Can Decorators

PICS

PRECISION INK CONTROL SYSTEM

Calculation of Required Ink Amount for Independent Transfer Zones

PRECISION INK CONTROL SYSTEM

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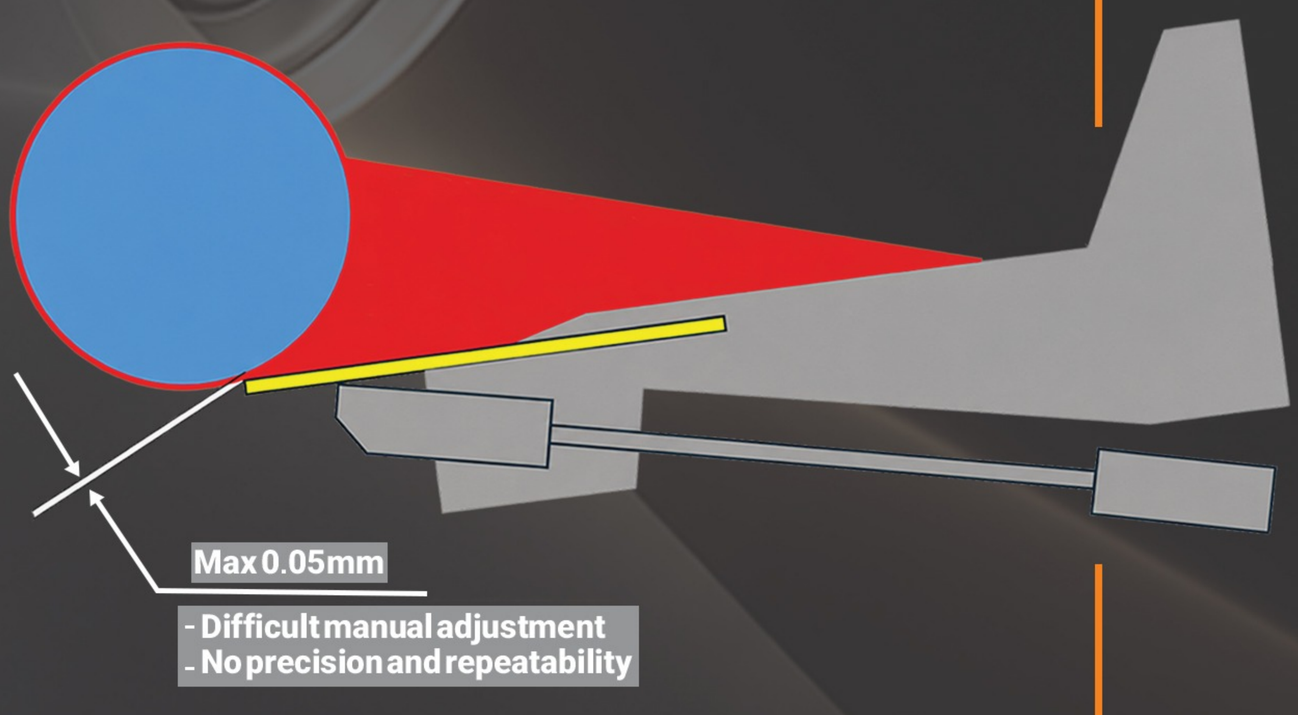
PRECISION STABILITY REPEATABILITY PROGRAMMABILITY

Why repetition of the manual ink adjustments is a must in case of every label change?

In conventional manual ink-transfer system, adjusting the thickness of ink film manually on the Fountain Roller within the range of 0.01 to 0.04 mm is difficult for the operator. Further on, reaching the proper adjustment is highly dependent on the operator's skill and experience. Therefore, the adjustments lack consistent accuracy and repeatability. This issue becomes especially evident during label changes. The operator must manually adjust the ink transfer, take print samples, evaluate the print results, and, if the tone and density are unsatisfactory, readjust the settings and repeat the sampling process.

What are the consequences of this process?

- Human error in ink adjustment due to manual setup
- Print Quality Fluctuation
- Dependence of adjustments on operator skill and experience
- Need for repeated adjustments and sampling to approach the desired value
- Lack of repeatability and accuracy in adjustments, especially after label changes
- Wear of the Fountain Roller surface in contact with the ink blade



What are the impacts of these problems?

- Increased waste
- Increased decorator downtime and label change time
- Print Quality Instability
- Higher production costs and lower decorator efficiency
- Reduced customer satisfaction

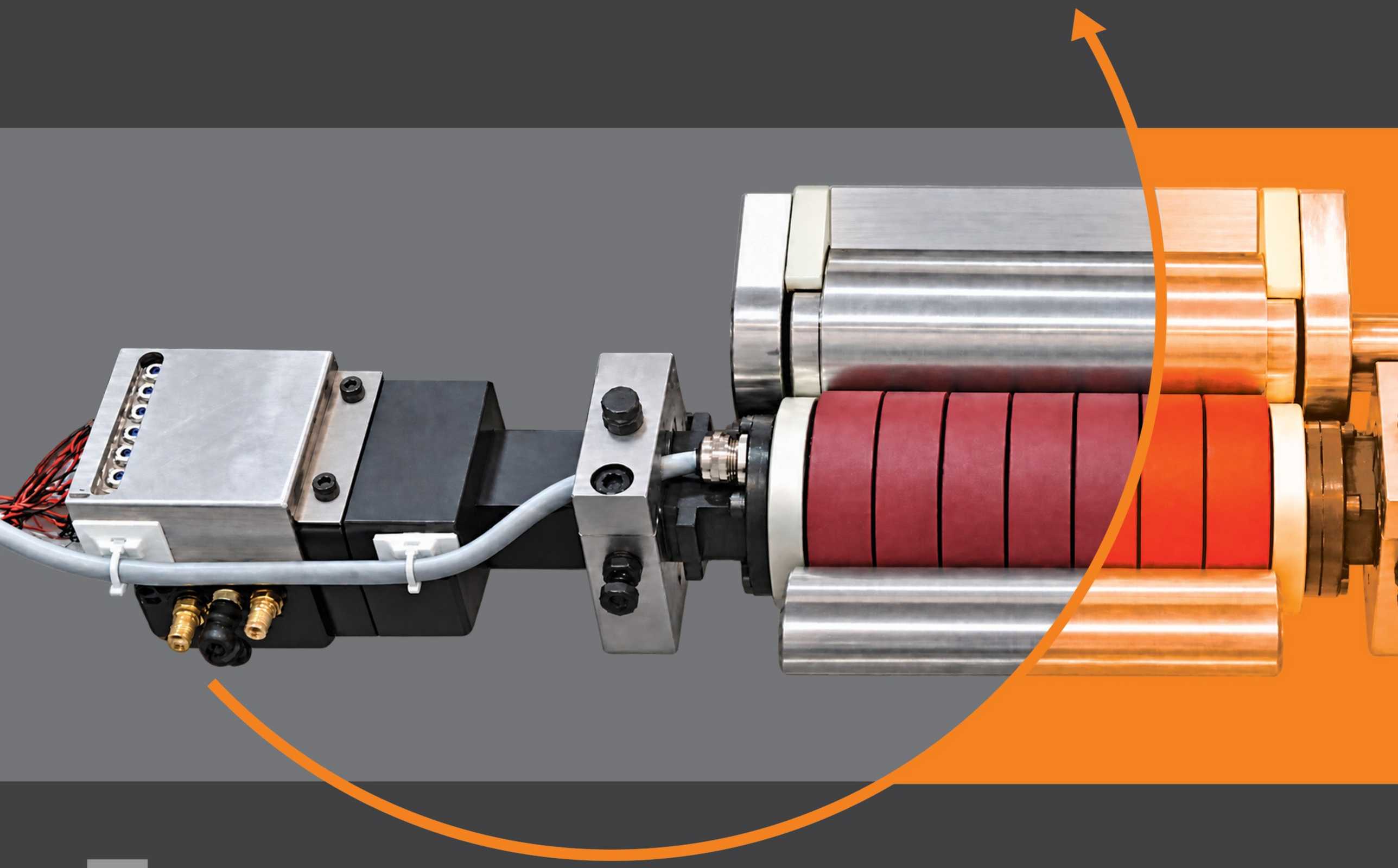
SO , THE MAIN QUESTION IS :

Can the ink-transfer and adjusting process be transformed into a process which is

- Accurate and reliable
- Repeatable
- Programmable
- Remotely electrically controllable
- Pre-settable based on the ink amount required for different print designs
- Reduces label change time and downtime

PRECISION INK CONTROL SYSTEM

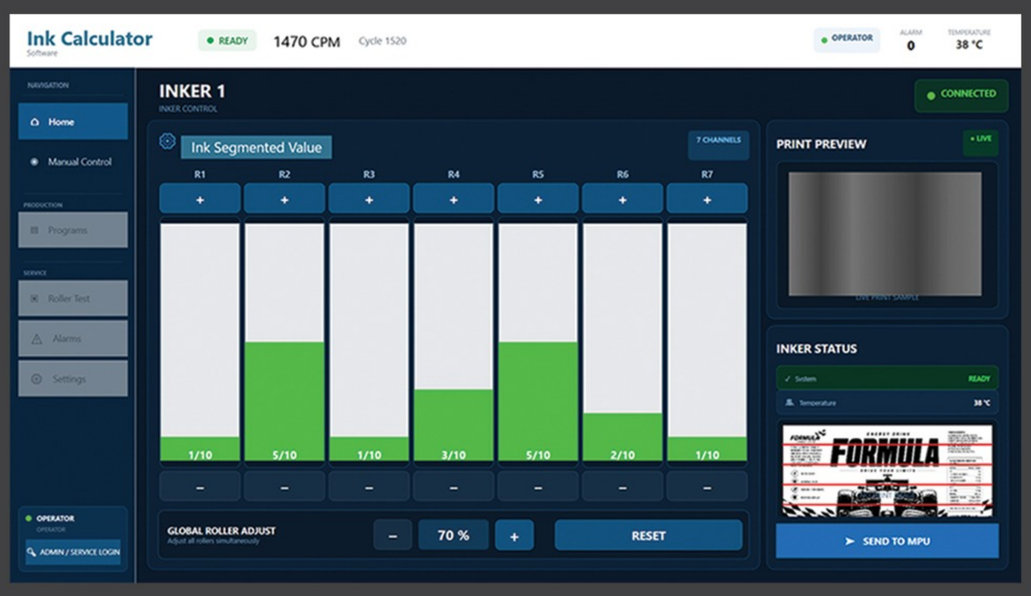
AS THE COMPLEXITY AND SPEED OF THE PRINTING PROCESS INCREASE, MORE PRECISE CONTROL OF INK TRANSFER HAS BECOME ESSENTIAL FOR ENHANCING CAN DECORATOR PERFORMANCE.



The New Generation of Precision Ink-Transfer Controllers (7-Piece Ductor Roller)

An integrated system consisting of three engineering layers for one purpose :

1. A modular mechanical mechanism installable on decorators' inkers.
2. Proprietary software for calculating the required ink amount for each individual print design
3. A powerful electronic control processor for managing and controlling ink -transfer amount.



SYSTEM OPERATION

FROM PREPRESS AND COLOURSEPARATION TO PRECISION INKTRANSFER CONTROL

The process begins with selecting the prepress and colour-separation data for each inker individually. By selecting each inker on the software main page, the operator enters the required data into the calculation software, including the prepress and colourseparation data, colour, and the specific ink code associated with that inker. Based on the selected prepress and colour-separation data, the calculation software automatically calculates the ink amount required for each section and displays the result as a seven-segment bar chart, corresponding to the seven functional sections of the 7-Piece Ductor Roller. Subsequently, the operator can activate the selected inker specifications. The software then sends the data to the processor system. The processor system processes the data in real time and sends the corresponding control commands to the electropneumatic valves assigned to the lateral displacement of each roller of the 7-Piece Ductor Roller. The ink-transfer amount in each section of the 7-Piece Ductor Roller is fully controlled to match the required ink amount calculated by the software, providing high repeatability, accuracy, reliability, and stability. The calculated values and settings can be saved in the software so that they can be recalled and used in subsequent runs without the recalculation. In addition to the calculated settings, the operator can, based on process conditions or inprocess evaluation, increase or decrease the set value for each of the seven sections independently, or for the entire set of seven sections simultaneously, using control keys in specified increments. Thus, the system while converting software calculations into precise physical settings in the Ductor Roller mechanism, provides repeatable and stable control of ink transfer, while also giving the operator the authority to apply final adjustments according to actual process conditions.

The operator can select the inker and specify the corresponding prepress and colour-separation data and specific ink code in the software, or modify them when required.

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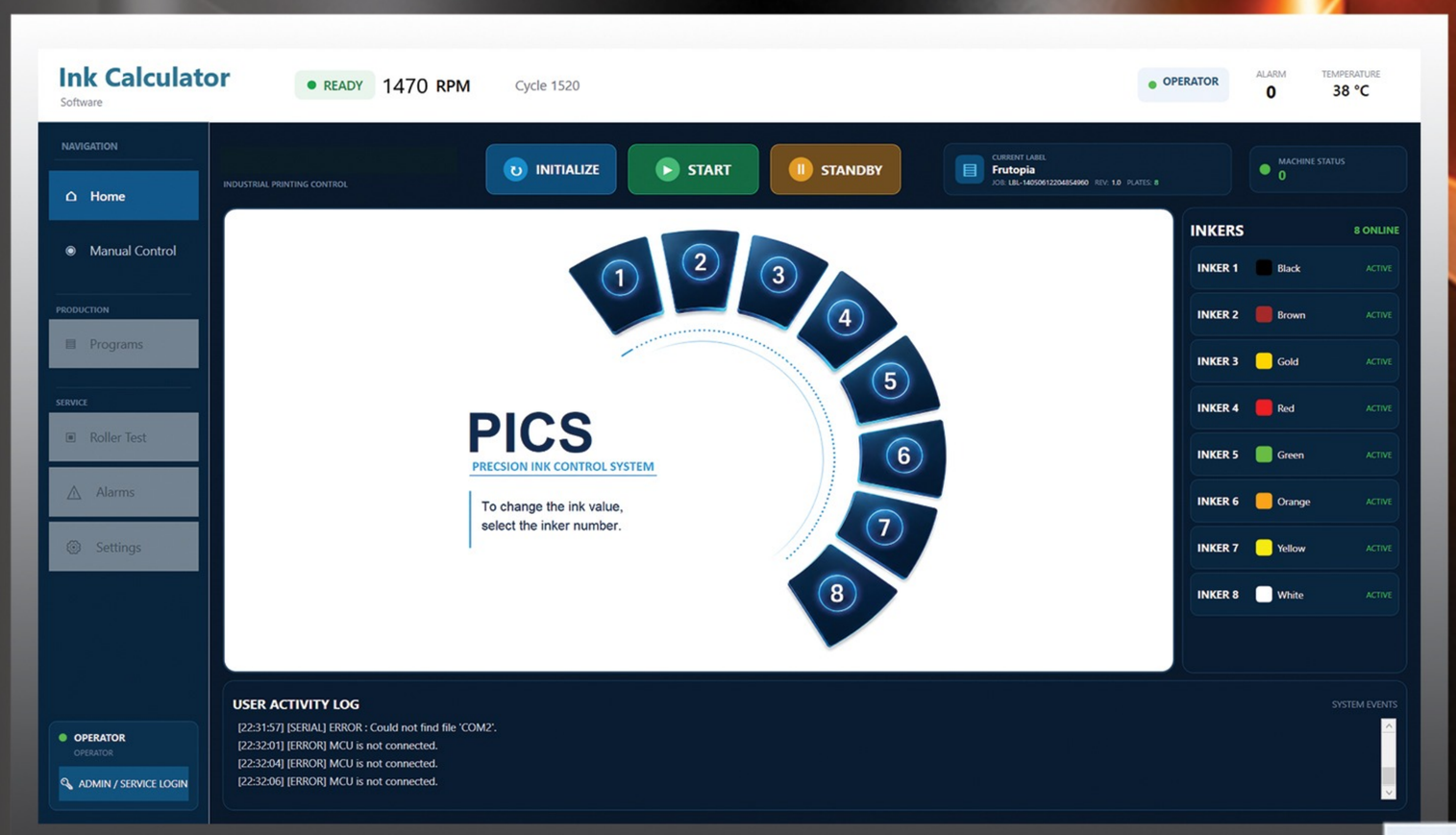

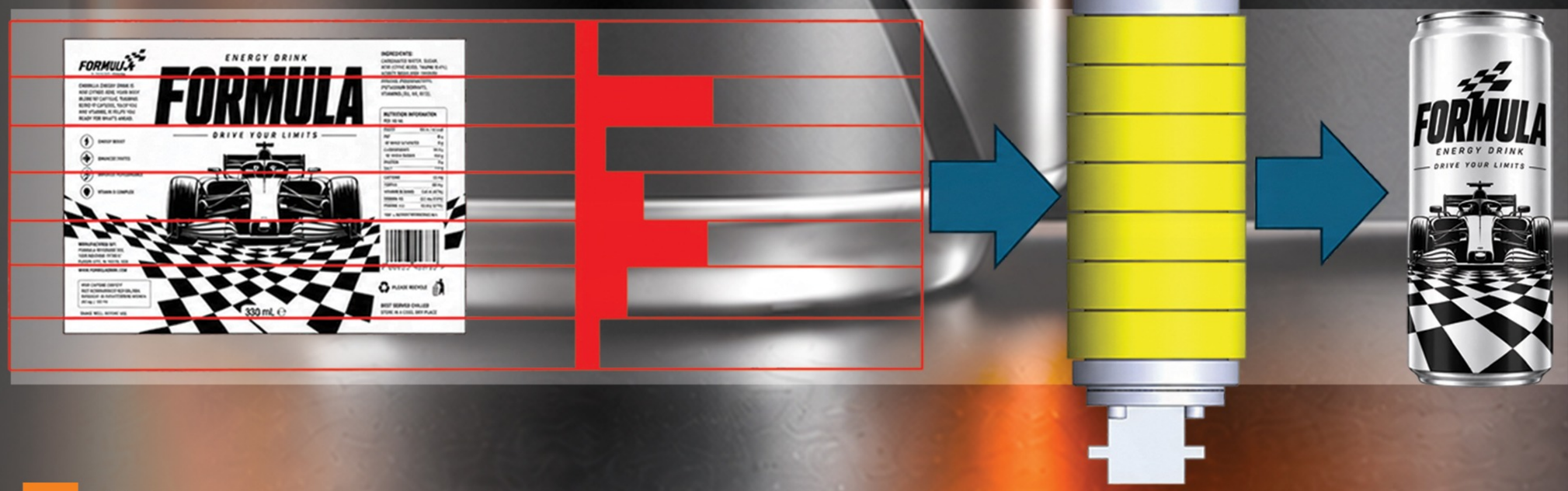

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Technology Achievements

-Programmable ink-transfer amount for each independent area

-Remote electrical control of ink transfer amount

-Proprietary software for preset calculation of the required ink amount based on prepress and colour-separation data

-Storage and recall of settings for each label for future production runs without recalculation

Performance Benefits

-Increased production efficiency and decorator uptime

-Elimination of manual adjustments dependent on operator skill and experience

-Reduced label-change time, decorator downtime, and ink adjustment time per inker

-Repeatable ink -transfer settings and stable print quality

-Increased accuracy of ink transfer

-Increased reliability and print quality

-Reduced print waste

PRECISION BEYOND CONTROL

Advanced Ink Transfer Technology
for Next Generation Aluminum Can Printing

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