



Clear-on-clear printing on the Gallus TCS 250

“No-label look” labels are frequently encountered where product decoration is used to optimize appearance. The special thermal properties of the clear-on-clear materials this requires previously made processing on translatory machines impossible. The new UV drying system of the Gallus TCS 250 provides the perfect remedy.

Why fully transparent labels?

Freshness, purity, clarity and elegance are only some of the attributes that can be visualized particularly well by using transparent labels. The no-label look enables the label to be integrated much more effectively into the packaging than would be possible with non-transparent labels. The scarcely visible cut edges and high transparency create the impression that the primary packaging was printed directly.

The transparency allows the consumer to see through the packaging, with see-through labels enabling the designer to create a visually striking, interesting association with the packaging's contents. A continuing trend towards the no-label look can be observed in particular in the drinks packaging sector. This type of product decoration is already well established and very popular for small 33 cl drinks bottles. However, there is also a clear trend towards transparent labels in the wine segment, especially for new wines.

Transparent labels can also be necessary for technical reasons. Transparent foils are highly resistant to abrasion and moisture. Both properties are necessary for sterilizing medicine containers (vials) for instance. For injection vials, a transparent view of the bottle's contents is also important. See-through is necessary in this case for safety reasons.



Figure 1: Example of no-label look decoration

Why use clear-on-clear material?

To achieve the desired no-label look, labels need to be as transparent as possible. The roughness of the substrate is important here. The adhesive of self-adhesive labels transfers the structure of the substrate to the end product. A rough surface, such as substrates made of paper, creates a cloudy effect after the label has been applied to the product. To avoid clouding, PET and PP in particular are mainly used today as substrates for no-label look labels, i.e. clear-on-clear.

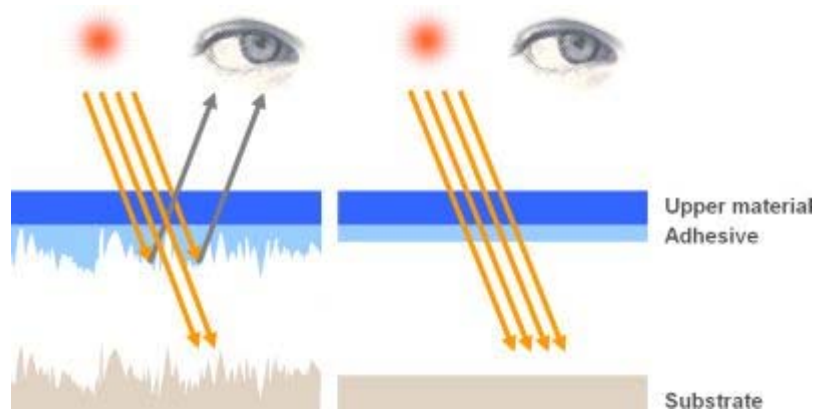


Figure 2: Left: clouding of the transparent label caused by reflections on the rough underside of the label. Right: no reflections by using synthetic substrates with a smooth surface.

The problem of thermal instability

The high transparency of clear-on-clear labels is currently only possible using materials with deep thermal stability. PET and PP self-adhesive bonds exhibit significantly reduced tensile strength even at temperatures that typically occur in UV drying processes. This is exacerbated by the fact that the translatory web feed, i.e. advancing and retracting the substrate, exposes the substrate twice to UV radiation for each printing unit.

Translatory web feed and translatory press systems have the major advantage of printing cylinders that are not dependent on format. The substrate is always advanced by the maximum print format. Then the substrate is retracted so far using a dancer system that the following format is appended with register accuracy to the end of the last print. The resulting web movement (pilgrim step) means that no change of tools is necessary for performing a format change.

The temperature impact together with the translatory web feed can lead to a deformation of thermally sensitive substrates. Register-accurate printing then becomes very challenging.

The solution on the Gallus TCS 250

To process clear-on-clear substrates on translatory press systems, the web temperature needs to be kept as low as possible.

This was achieved for the first time on the Gallus TCS 250 by combining an innovative power control unit, a new UV drying head and a highly efficient non-contact web cooling system. By using electronic ballasts, it is possible to almost completely switch off the power of the UV lamp during the material web retraction phase. As soon as the material starts moving forwards again, the power is switched on again immediately. As well as a halving of exposure to radiation, the lamp's enhanced UV light output and the non-contact web cooling system contribute towards the required web temperature reduction.

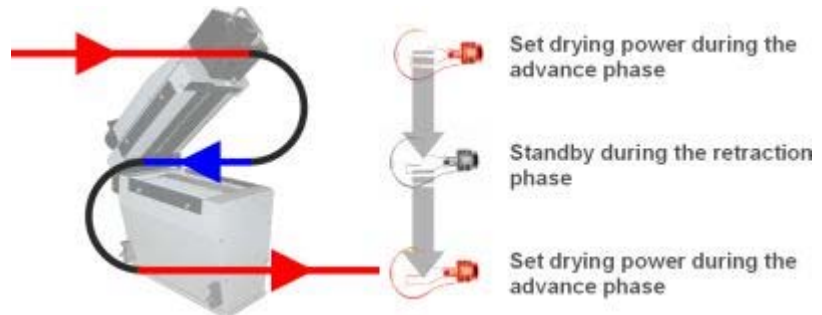


Figure 3: Working principle of the clocked Uviterno Coldstar SRK UV dryer on the Gallus TCS 250

The new solution also cuts the energy required by the Gallus TCS 250 by up to 75%. This saves energy costs, which ultimately lowers the cost of all printed labels.

If your customers have very strict requirements, if designers' needs are particularly unusual, if only the best is good enough, then the Gallus TCS 250 is your optimum choice. As well as classical self-adhesive labels, it can now also be used for attractive clear-on-clear labels that create a stimulus to buy and offer label printers flexibility and crucial competitive advantages. Would you like to find out more about the opportunities offered by the Gallus TCS 250? Contact your local Gallus partner or use the e-mail address shown. We will be happy to help.

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