TIPS AND TRICKS

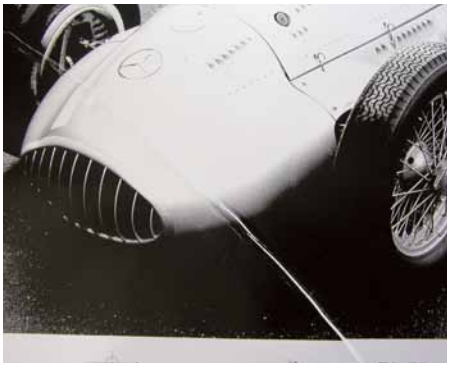
Paper problems – combating static electricity and creasing

PAPER IS HIGHLY SENSITIVE TO EXTERNAL FACTORS // Sometimes, this can have grave consequences for print quality. Yet influences such as electrostatic charges and creasing can be easily prevented.

In a dry ambient atmosphere in particular, printers are repeatedly faced with the same problem – the feeder jams because sheets stick to each other and cannot be separated off. This is caused by static electricity. The friction generated creates a positive or negative charge on the surface of the paper. This usually leads to incorrect feeding and register inaccuracies.

Static charges mainly occur when paper that is too dry is processed in conditions of low humidity. This is because paper is a semiconductor. Its electrical conductivity increases at the same rate as its moisture content. If this is high enough, the electrical charge drains away instantly. The critical lower threshold for paper moisture and relative humidity in the pressroom is 40 % to 42 %. Higher values are preferable, with equilibrium moisture content between 45 % and 55 % being ideal for paper. The relative humidity in storage and production rooms should be 50 % to 55 % to prevent drying out. This is essential in winter in particular, as the relative humidity in heated rooms falls very significantly. If countermeasures are not taken, the values frequently drop to between 20 % and 30 %.

Special anti-static devices have proven successful as an alternative or addition to smart air conditioning – discharge electrodes or ion blowers at the feeder increase air conductivity. This drains away the electricity instantly so that a static charge cannot build up in the first place.



Annoying and unattractive – creases in paper may be due to many things and can be easily prevented by taking the right measures.

Creasing. Another problem that may result from paper not being stored at the correct temperature and humidity or incorrect press settings is creasing in the print process.

Absolutely flat substrates are essential for perfect sheet travel. They need to be transported and stored at the correct temperature and humidity and protected against unfavorable conditions. Paper, for example, is highly sensitive to fluctuations in humidity. If the edges of a pile have dried out, the sheet will be shorter at its edges than it is in the middle, leading to cockling. On the other hand, when paper absorbs too much moisture, it becomes wavy at the edges, which is also an obstacle to achieving absolutely flat substrates. Print shops should therefore ensure the atmosphere is as constant as possible during storage and production. The guideline values are relative humidity of 50 % to 55 % and a room temperature between 20°C and 22°C.

Incorrect press settings, particularly on the feeder, can also cause creasing. This is often because front lays get stuck or are set incorrectly or a side lay pulls too much, with the result that the sheet crumples or is misaligned. If an inspection proves unsuccessful, sheet transfer may be helped by adjusting the retainers, reducing the blast air at the feeder and improving the air settings. However, poorly functioning, soiled grippers may also be the source of the problem, as this leads to deformation or unevenness of the sheet. In this situation, the grippers need to be cleaned and adjusted as necessary. Careful monitoring of sheet travel is essential for all these measures. ■