

Inking unit area

One way of judging the size of an inking unit is to compare the largest printing size with the area of the inking unit. This area comprises the total surfaces of all rollers and distributors, from the ductor to the inking rollers. A good inking unit should, on the one hand, have a large storage capacity, but, on the other hand, should also react as fast as possible to corrections. On the SORM, for example, the inking unit area is 7.1 times larger than the printing area.

Ink flow

Another important factor is the arrangement of the rollers. This determines the ink flow and has a direct effect on plate inking. Heidelberg sheet-fed offset presses have front-heavy inking units. The main ink flow is directed at the two first inking rollers. Depending on the type of press, they apply up to 90% of the required amount of ink on the printing form. The two final inking rollers essentially have the function of smoothing the ink film on the plate.

Inking

The number and size of the first inking rollers have an important effect on even inking of the printing plate. We know from practical experience that it is easier to apply a thin film of ink to the plate from a number of inking rollers one after the other and then to smooth the film than to apply the same amount of ink with just a few rollers.

The different diameters of the inking rollers ensure uniform inking even with difficult forms. If all inking rollers were of the same diameter, the same roller movements would cause the ink taken by the image to be applied in exactly the same place and show up as an ink transfer error (superimposition). With 4 inking rollers of correctly graduated diameters, Heidelberg sheet-fed offset presses guarantee good inking.

Lateral distribution

As well as ink distribution in the circumferential direction, the ink is also distributed laterally by means of traversing distributor cylinders. This is necessary for the following reasons:

- Lateral distribution spreads the ink evenly to the sides. The ink also remains softer.
- It breaks down accumulations of ink reaching the inking units due to uneven ink taking by the image.
- Furthermore, lateral distribution also aids adjustment of the ink zones, as they are not always arranged to correspond with the subject.
- Finally, lateral distribution also facilitates and speeds up washing the inking rollers.

The amount of lateral distribution is adjustable on all quality offset presses. It is often set to maximum when installing the machine and is usually not changed subsequently. Yet, printers could make work much easier in certain cases of they changed the amount of lateral distribution (for example when solid colour and fine type are directly next to each other or if several colours run adjacently to the inking unit from a split fountain).

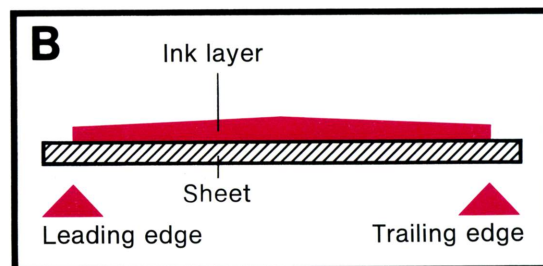
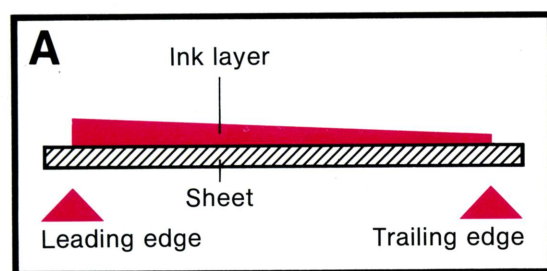
Initial point of lateral distribution

Slight differences in colour application at the leading edge and trailing edge (ink drop) cannot be totally avoided in sheet-fed offset. When working with large areas and in repeat work (labels) this effect may show up, interfering with the final printed result.

On Heidelberg M-Offset, S-Offset and SPEEDMASTER presses, it is possible to adjust not only the amount of lateral distribution in relation to cylinder position, but also the reversal time. This means altering the time at which, for example, a certain distributor begins to change from its end position on the operator side of the press towards the drive side. This change affects the ink supply and counteracts ink drop.

This setting function provides printers with an aid which can be used to adapt the inking unit optimally to the special requirements of a particular printing job.

Example A shows in exaggerated form the ink accumulation at the edge of the gripper and an ink drop towards the trailing edge. In Example B, ink accumulation occurring in this imaginary model is shifted towards the centre of the sheet by changing the moment of initial lateral distribution. This has caused the amount of ink drop to be minimised to such an extent that it is no longer perceivable to the eye.



Information on setting lateral distribution is contained in the operating instructions for your press.