<table>
<thead>
<tr>
<th>Title</th>
<th>Keyless offset - boon or bane?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Fuchs, Boris.</td>
</tr>
<tr>
<td>Date</td>
<td>1994</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/10220/2483">http://hdl.handle.net/10220/2483</a></td>
</tr>
<tr>
<td>Rights</td>
<td></td>
</tr>
</tbody>
</table>
Keyless Offset - Boon Or Bane?

By

Boris Fuchs
Keyless Offset - Boon or Bane?

Boris Fuchs, IFRA
PRINTING PROCESSES IN NEWSPAPER PRODUCTION

OFFSET - CONVENTIONAL

FILM INKING

1. UNDERSHOT
2. OVERSHOT
3. PUMP INKING (INJECTION INKING)

DUCTOR INKING (Not used in newspaper printing)
Ink screw, one per column

Fountain blade over the ink fountain

Ink fountain
## DEMANDS ON NEWSINK

<table>
<thead>
<tr>
<th>UNDERSHOT</th>
<th>OVERSHOT</th>
<th>INKPUMPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscous</td>
<td>Less viscous</td>
<td>Even less viscous</td>
</tr>
<tr>
<td>Short</td>
<td>Long</td>
<td>Long</td>
</tr>
<tr>
<td>High relative polarity for a high water take-up</td>
<td>Low relative polarity for a low water take-up</td>
<td>Even lower relative polarity to avoid excessive water take-up</td>
</tr>
</tbody>
</table>
IN PRACTICE

- Viscous and short inks create greater tendency to linting and rub-off
- if undershot inking is used > use newsprint with low linting and rub-off propensity (rough newsprint)
- Long and low viscous inks have tendency to ink misting and strike-through
- if overshot or pump inking is used, special additives in ink and newsprint with good opacity properties are needed
- High water take-up requires fountain solution with good wetting properties

> Ink, fountain solution, paper, inking unit and blanket properties are inter-related and must be dealt with as an entity
Harold Dahlgren

Friction roller
Ink blade without zones
Ink pump

Friction roller
Film roller
Fountain roller
Louis Jean Chambon

var. pressure setting

Roller doctor blade

Ink pump
var. pressure setting

Squeeze doctor blade with swing-away movement

Ink pump

Wifag experimental.
Compensating rollers
Kassel version

Neu-Isenburg version

Anilox roller

Chamber doctor blade

Ink pump

Koenig & Bauer
B = blanket cylinder
P = plate cylinder
I = ink forme roller

Chamber doctor blade
Anilox roller
Ink pump

MAN Roland
Distributor

Transfer roller

Scraper roller with doctor blade to remove residue ink

Film roller

Brush roller

4 ink pumps, var. driven

Rockwell
Metering blade
Pan roller var. driven

Foam roller with doctor blade to remove residue ink

Ink pump

TKS
Rider roller
Adjustable Scraper roller with doctor blade to remove residue ink
Orange skin rubber roller = film roller
Fountain roller, var. driven
Ink pump

Mitsubishi
Distributor

Ink pump pan roller

Transfer rollers

Orange skin metering roller with doctor blade

Ikegai-Goss
Cross-section through a chamber-doctor system with blade holder, clamp, doctor blades and ink feed

How ink transfer functions in anilox offset:
1. Ink pump
2. Ink trough
3. Ink feed
4. Anilox screen roller
5. Anilox form roller
6. Plate cylinder
7. Blanket cylinder
8. Blanket cylinder
Film inking roller, runs at the same speed as the ink fountain roller, is covered with an exchangeable PVC brush tape (affixed by a zip).

Bristle length: approx. 2.5 mm
Distance from distributor: 1.5 mm

Ink transfer roller
contventional rubber-coated

Ink distribution roller
rilsan-coated

Ink distribution roller
hard plastic covering

Ink forme rollers
conventional

Plate cylinder

Blanket cylinder

Scraper roller with special hard plastic covering
1/3 of the ghosting of conventional inking systems is eliminated

Doctor blade bar and worm shaft for ink return

Goss standard jet spray damping system

Goss digital ink pump page- or column-wide

Ink distribution rail
Anteil der in den letzten 4 Jahren georderten Anilox-Offset-Farbwerke in Westeuropa

(Basis: Auftragseingang aller Hersteller für 16-Seiten-Zeitungsoffset im Zeitraum GJ 90/91 - 93/94)

Marktdurchdringung Anilox-Offset in Westeuropa
Single-Fluid Lithography

Inker

Scraped Ink & Water

Fresh Water

Fresh Ink

Reconstitution

Precision Pumps

Emulsion Distribution

Source: Rockwell Graphic Systems

ATTENTION: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library
App. 1. Solid tone density vs print length

Example of a small variation

Example of a large variation

© IFRA, Darmstadt
Density, $D$

Attachments: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library.