<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Keyless offset - boon or bane?</th>
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</thead>
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<tr>
<td><strong>Author(s)</strong></td>
<td>Fuchs, Boris.</td>
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<tr>
<td><strong>Date</strong></td>
<td>1994</td>
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<td><strong>URL</strong></td>
<td><a href="http://hdl.handle.net/10220/2483">http://hdl.handle.net/10220/2483</a></td>
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<td><strong>Rights</strong></td>
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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)
# 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
Louis Jean Chambon

var. pressure setting

Roller doctor blade

Ink pump

B

P

I
var. pressure setting
Squeeze doctor blade
with swing-away movement
Ink pump

Wifag experimental.
B = blanket cylinder
P = plate cylinder
I = ink forme roller

Chamber doctor blade
Anilox roller
Ink pump

MAN Roland
Distributor

Transfer roller

Film roller

Brush roller

Scraper roller with doctor blade to remove residue ink

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. Ink forme roller
6. Ink rollers
7. Plate cylinder
8. Blanket cylinder
Goss digital ink pump page- or column-wide

Ink distribution rail

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 distribution roller rilsan-coated

Ink transfer roller conventional rubber-coated

Ink distribution roller hard plastic covering

Ink forme rollers conventional

Doctor blade bar and worm shaft for ink return

Goss standard jet spray damping system

Goss digital ink pump page- or column-wide

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Plate cylinder

Blanket cylinder
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)

Anteil Anilox-Offset

2.650 Farbwerke für 16-Seiten-Zeitungsmaschinen

Marktdurchdringung Anilox-Offset in Westeuropa
Scraper Blade & Auger for Ink Return

Ink Pump

Ink Rail

Ink Pickup Roller

Ink Scraper Roller

Point of Maximum Shear Rate

Source: Rockwell Graphic Systems.
App. 1. Solid tone density vs print length

Example of a small variation

Example of a large variation