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<tr>
<td>Author(s)</td>
<td>Fuchs, Boris.</td>
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<td>Date</td>
<td>1994</td>
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<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/10220/2483">http://hdl.handle.net/10220/2483</a></td>
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Keyless Offset - Boon Or Bane?

By

Boris Fuchs
IFRA/AMIC - Workshop Web Offset Technology
in Bangkok, Thailand, 8 - 9 September, 1994

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 Rail Mode of Operation

Bypass Mode of Operation

Pump

Air Valve

Ink to Ink Rail

Ink to Page Pack

Dist Rail

Suction Rail Bypass
<table>
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<tr>
<th>Demands on Newsink</th>
<th>Overshot</th>
<th>Inkpumps</th>
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<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>
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</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 interrelated and must be dealt with as an entity
Friction roller

Ink blade without zones

Ink pump

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

Chamber doctor blade
Ink pump

Anilox roller

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
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
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

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

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
nisan-coated

Ink transfer roller
conventional rubber-coated

Ink distribution roller
hard plastic covering

Ink forme rollers
conventional

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)

Marktdurchdringung Anilox-Offset in Westeuropa
Single-Fluid Lithography

Source: Rockwell Graphic Systems
Scraper Blade & Auger for Ink Return

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

Example of a small variation

Example of a large variation

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