

# From a catholic printing company to the pilot project of UV-technology for newspaper printing.



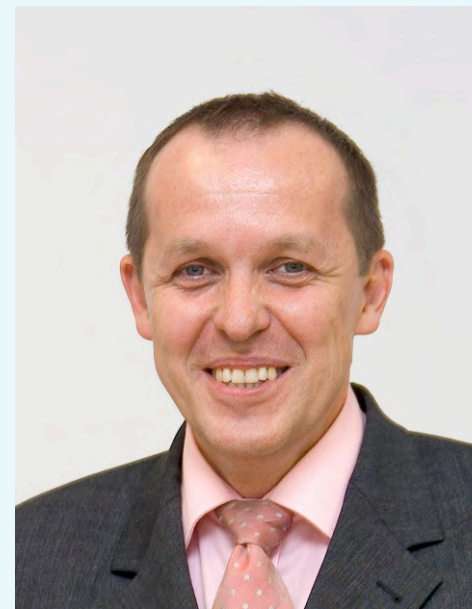
## Thomas Unterberger

### Chief operating Officer

Herold Druck und Verlag AG, Vienna/Austria

**Education:** Business Administration at  
Vienna University of Economics and Business  
Administration

**Experience:** 18 years in different printing and  
publishing companies as chief financial officer,  
Joined Herold Druck in 2003 as CFO also for  
the holding companies,  
since 2006 chief operation officer and  
responsible for the implementation of UV-  
printing.



## Our development during the last 115 years:



Print of the daily newspaper „Reichspost“, as from 1893.  
The picture on the left shows the cover of the „Reichspost“ Sunday 7th 1913.

Print with two flat- and one “Tiegel” printing machines.



Front of Herold Druck office at Strozzigasse in 1913.



In 1986 „Die Presse“ was printed at Herold on a new multicolored letter press for the first time. (Wifag).



In 1990 the „Herold Druck und Verlag AG“ was sold by archdiocese of Vienna to a group of companies who belong to Dr. Josef Taus - since then in his majority possession.



1992 relocated in a new building at Faradaygasse 6.  
Refitted to CTP plate setter by AGFA with online  
press and cant.

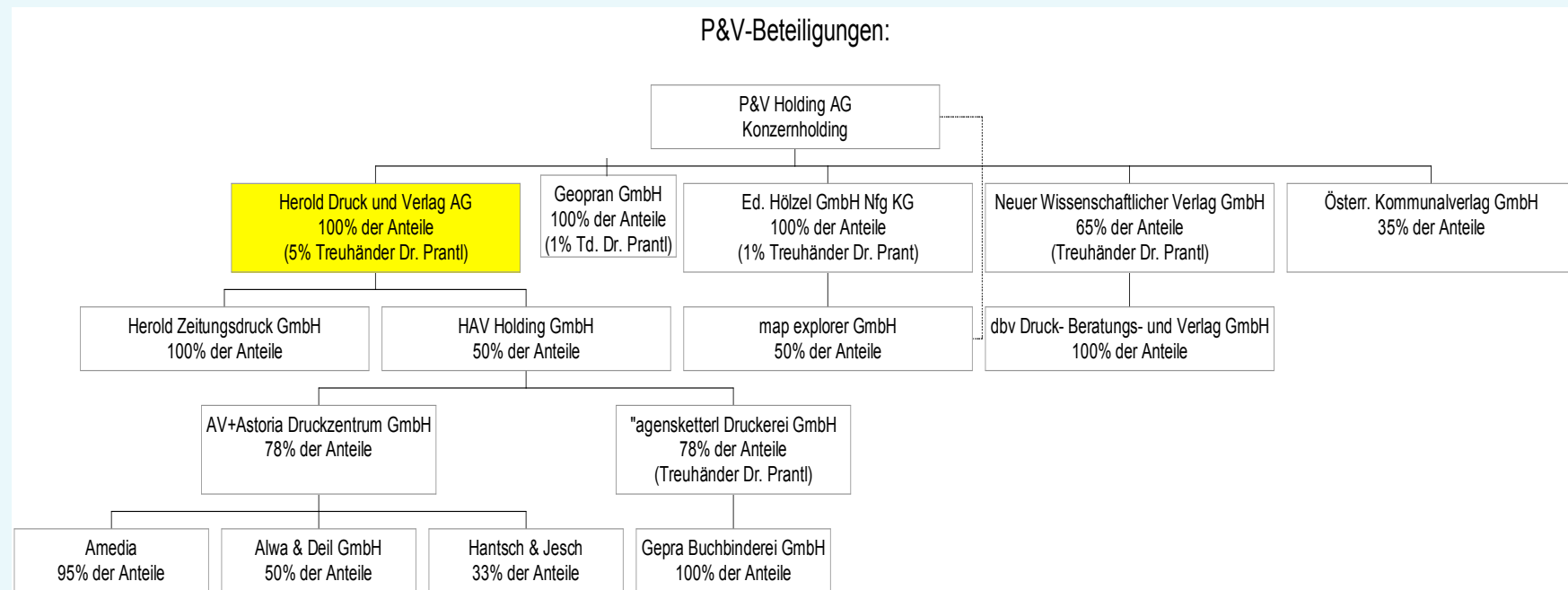
In 1993 invested in a new UNIMAN 4/2 S  
newspaper offset.



2002/2003 extensions through a MAN COLORMAN  
Took over and developed the newspaper mailroom.

3 tower of cylinders CIC units, format 900 x 1200 mm,  
45.000 copys/h broadsheet, double fold,  
option for a fourth printing tower,  
FERAG mailroom system

# „P&V Holding AG“ - group



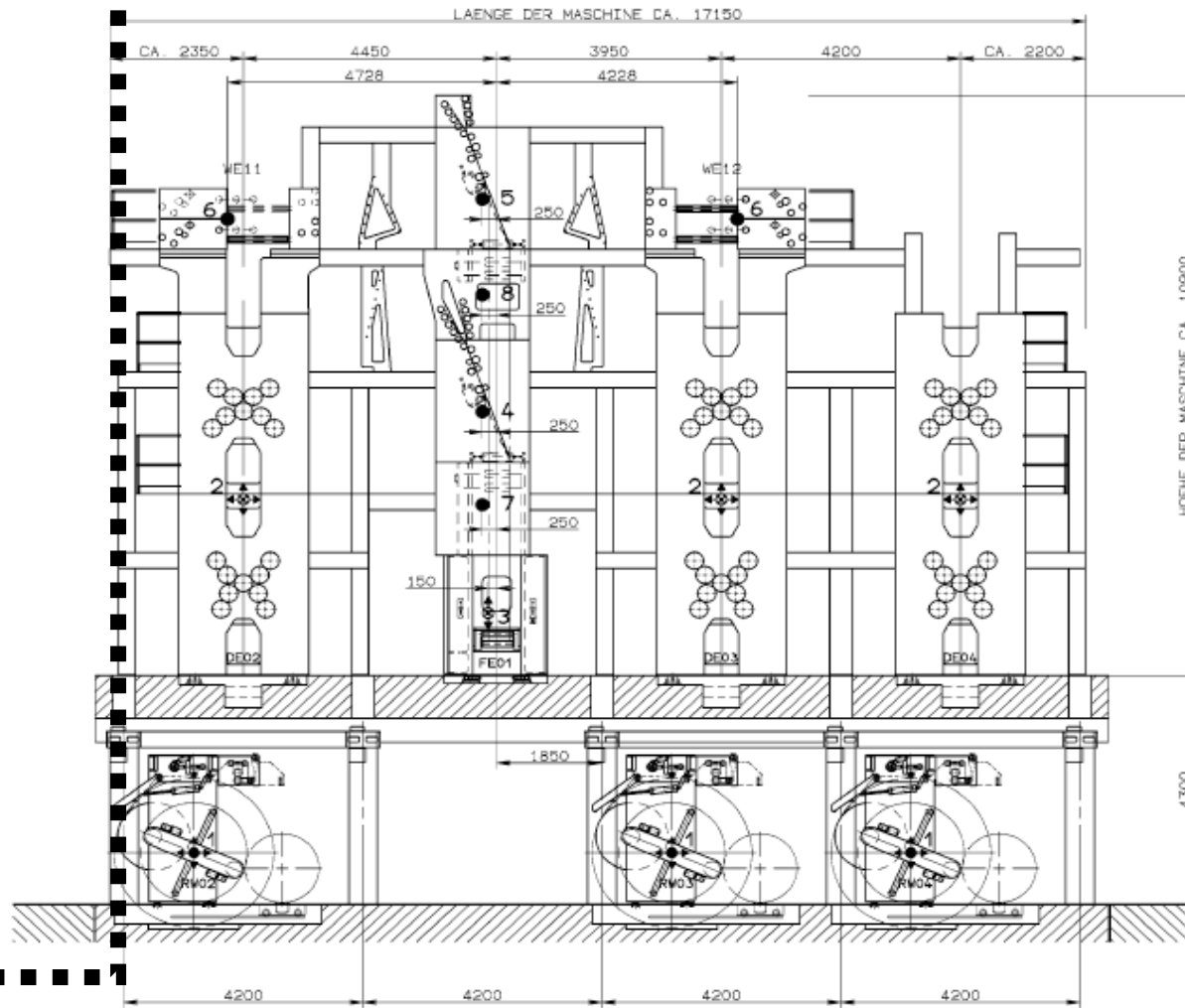
At 31.12.2007: 342 employees and € 73,4 Mio. sales

# Corporate Structure Herold Druck

- Only a job printer.
- MAN Uniman (build 1992) three four-high towers, 1260 x 940 mm format
- MAN Colorman (build 2002) three four-high towers, 1200 x 900 mm format plus one four-high tower MAN Colorman with UV curing (build 2006)
- 9 cylinder system (blanket – satellite). 16 Broadsheet pages per web
- Max. output (copies/h) 45.000
- 78 employees
  
- We are printing 3 daily newspaper (Die Presse, Wiener Zeitung, Heute) and 54 weekly and monthly newspapers .
- Together **5 million newspapers per week.**

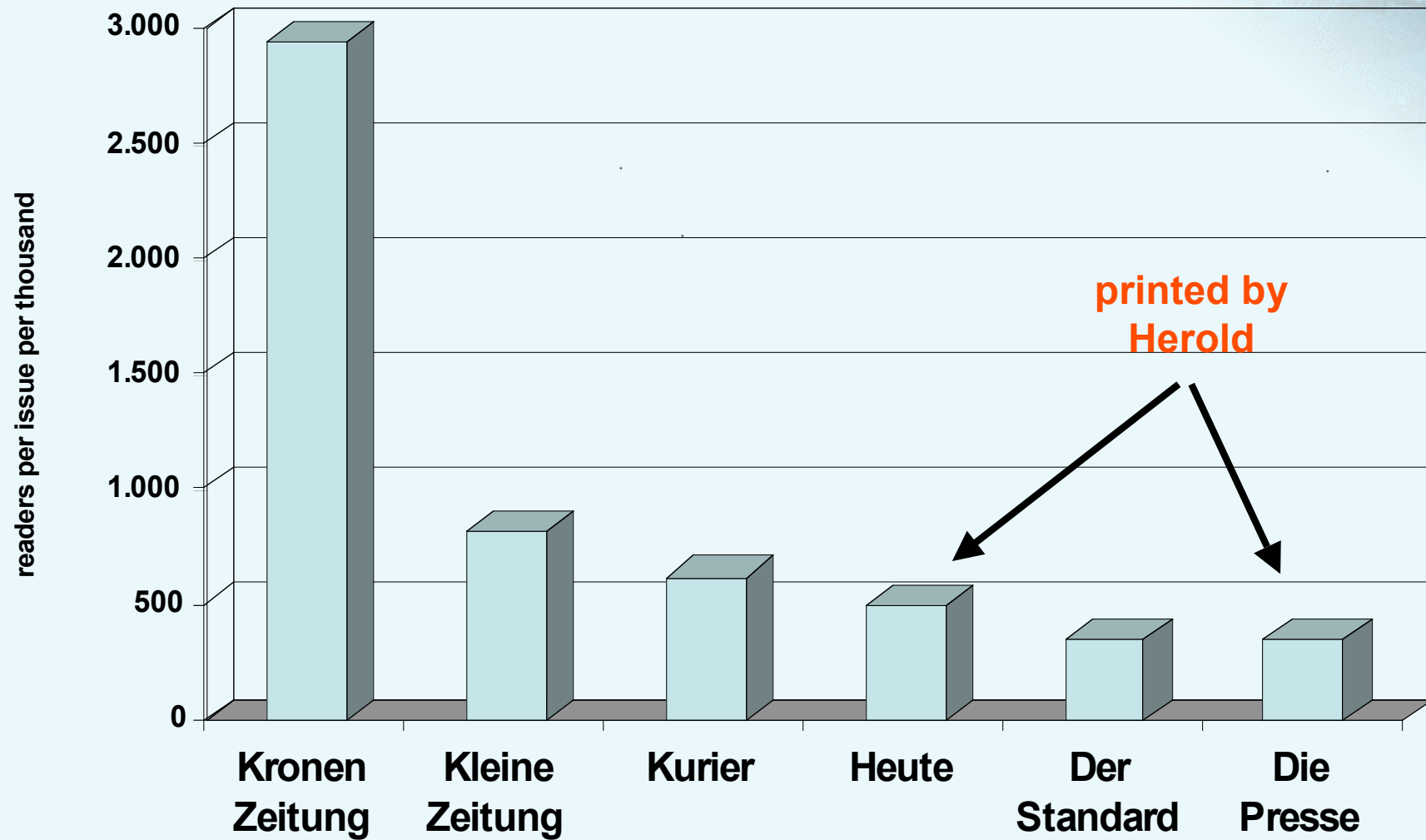
# Colorman before demounting

Free space  
for one  
additional  
printing  
tower





## National Press in Austria



## Global trend:



- **Quality in newspaper offset**
  - ➔ for editorial pictures
  - ➔ for high quality advertisement
- **Current Technology: Heatset-dryer (hot-air)**
- **New alternative: UV**

## Global trend:



What will be important trends over the next three years?

- More 4-color pages
- ROP (run-of-press) paper grade and/or print quality
- Newspaper become more magazine-like
- Printing supplements, magazines and ad inserts

# New Revenue Opportunities



- In-sourcing
- Commercial printing
- New VAPoN products
  - Advertising premium
  - Convert magazine ads to ROP
  - Convert catalogues/inserts to ROP / supplements

## Some VAPoN examples



### Wentworth Courier, Melbourne

Free weekly newspaper  
360 pp all heatset on LWC paper, stitched & trimmed

### Gulf News

Daily newspaper  
with ROP heatset & coldset  
sections



## More VAPoN examples

### Axel Springer, Germany

- Heatset cover
- Coldset text
- Bring back classified ads from Internet to Print



Unt / June 2008



### Helsingin Sanomat, Helsinki

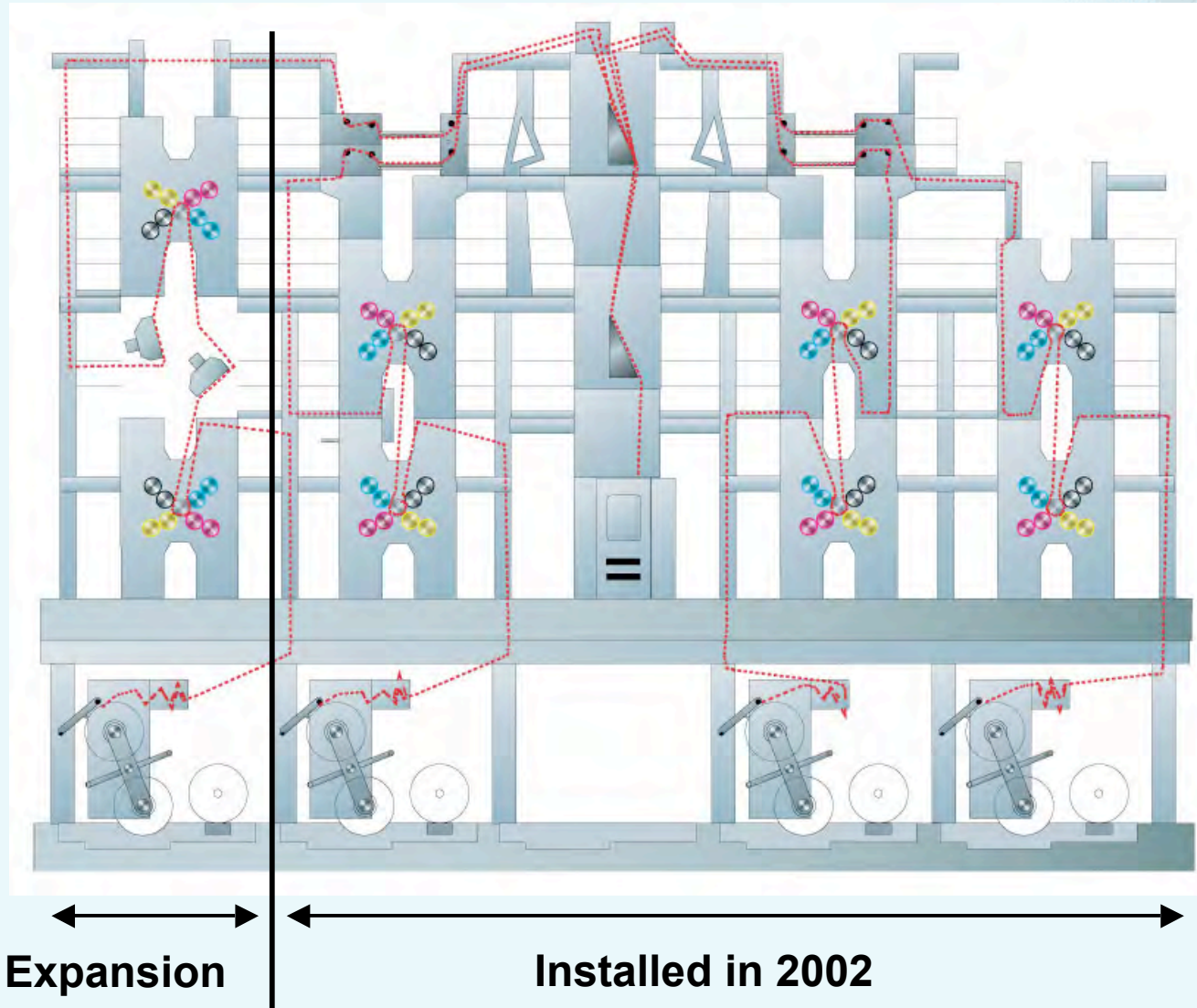
- Insert with housing adverts adapted to Internet style
- Printed heatset on COLORMAN

## Reason for our investment:

- Herold needs the fourth printing tower as back-up and for a volume expansion up to 64 pages for our present daily newspapers.
- Possibility to print newspaper inserts and glossy cover pages in one run together with the coldset pages.
- Commercial products like catalogues and brochures for the companies which belong to our shareholder (Libro and Pagro, with 330 book- and stationery stores in Austria)

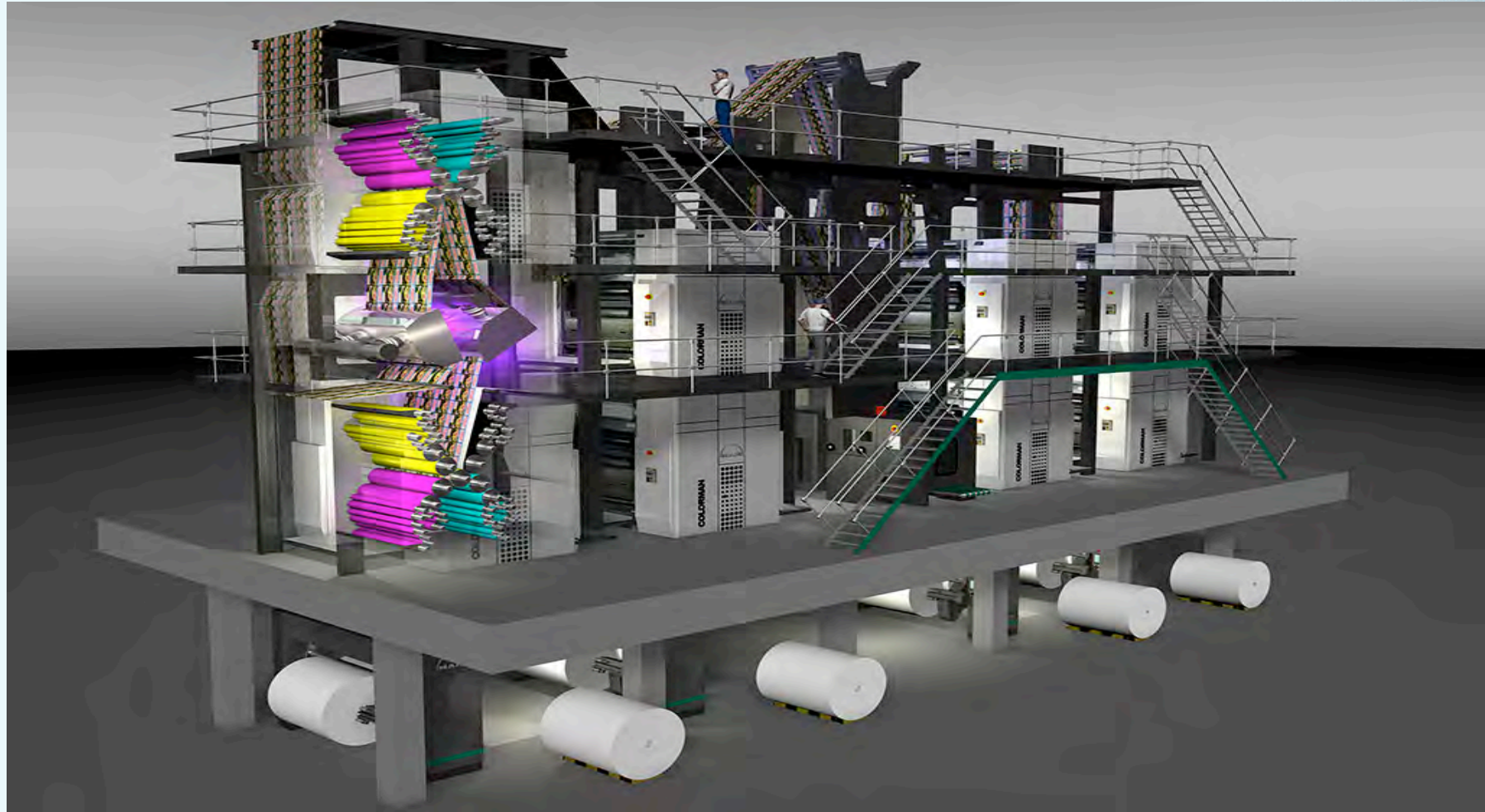


## Configuration of MAN COLOORMAN at Herold

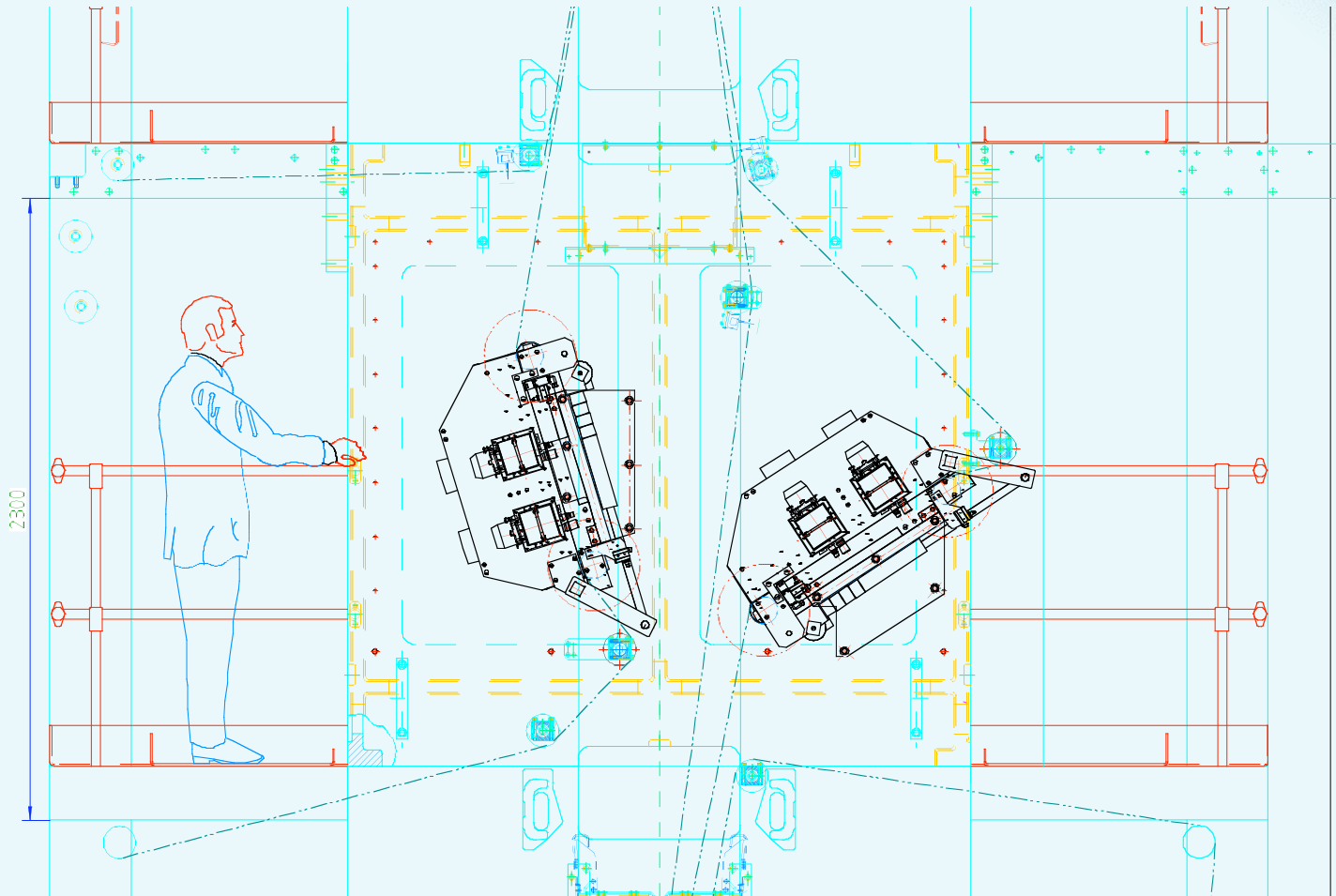




## UV-printing tower

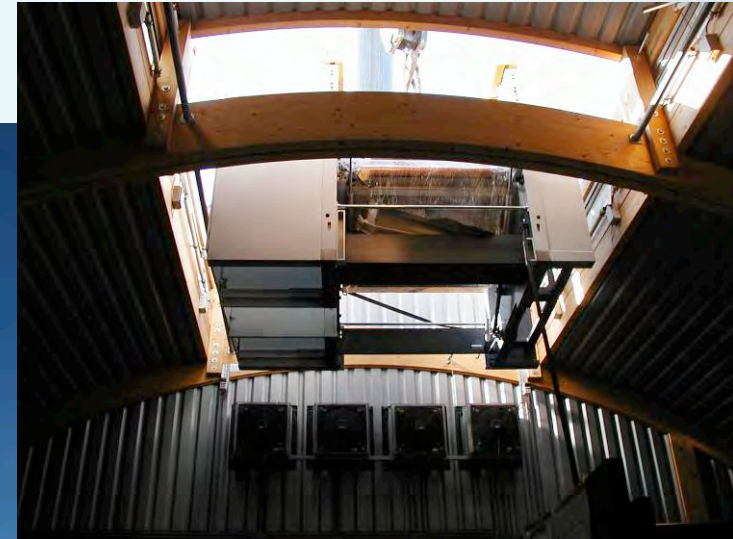


# UV-curing



2006

- Insertion of the printing tower and the two UV-curing systems on October 30th 2006 (six month after order) during current production on the other three printing towers.



## 2006/2007

- Change of workflow and platesetters from AGFA to KODAK thermal platesetters at December 2006 because of their faster imaging speed .
- First coldset products were printed on December 29th 2006.
- Conversion from coldset to UV starts at mid January 2007.

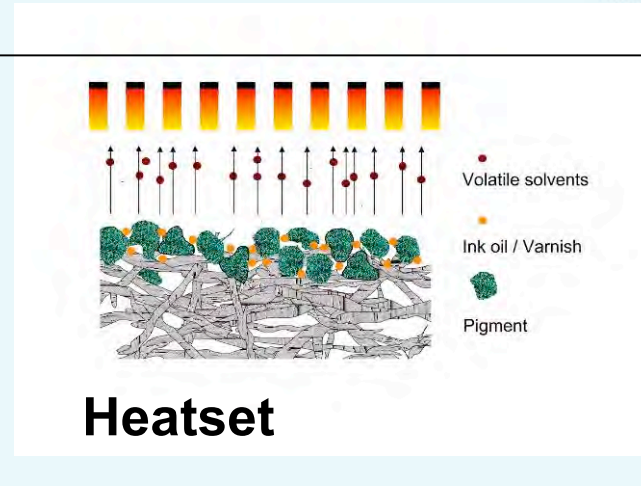
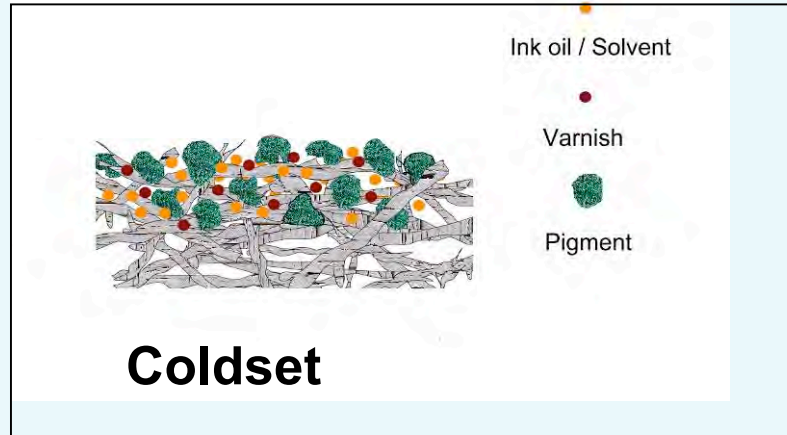


- First UV production was sold by the end of February 2007.
- Expansion for the mailroom with a rotary trimmer by Muller Martini at full press speed 11.25 m/s (37ft/s).

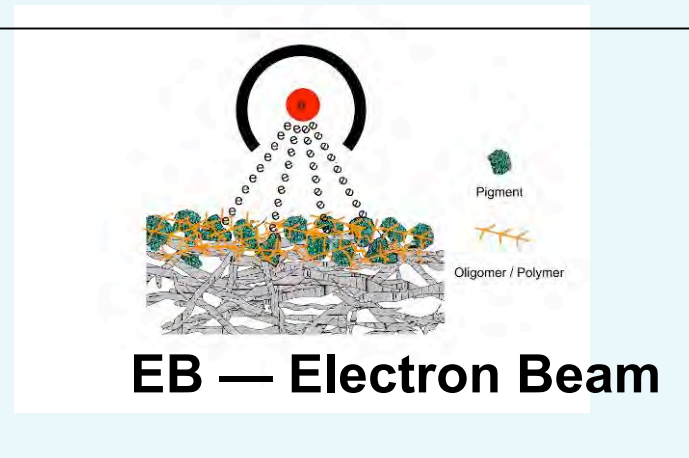
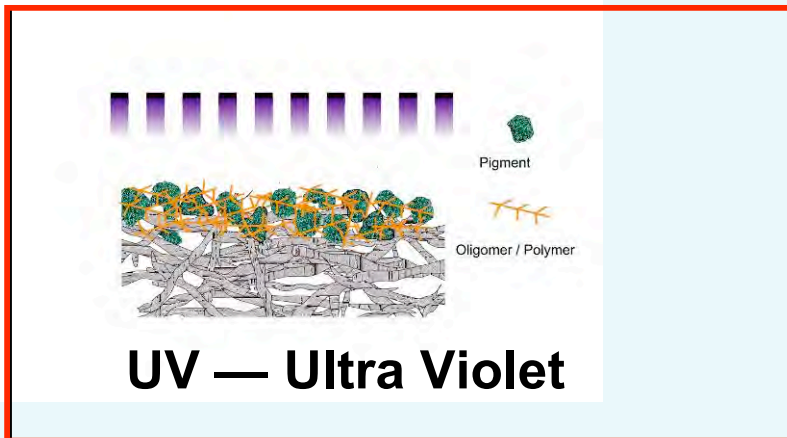
# What technologies ?

# Ink system options available

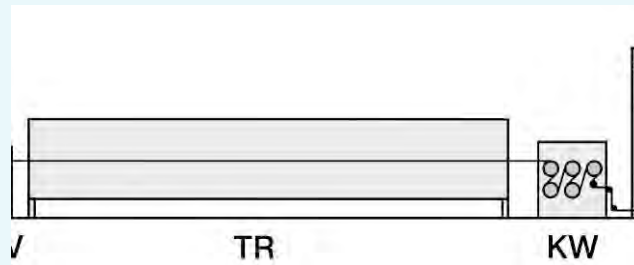
## Oil-based inks



## Radiation curing inks



## Heatset or UV?

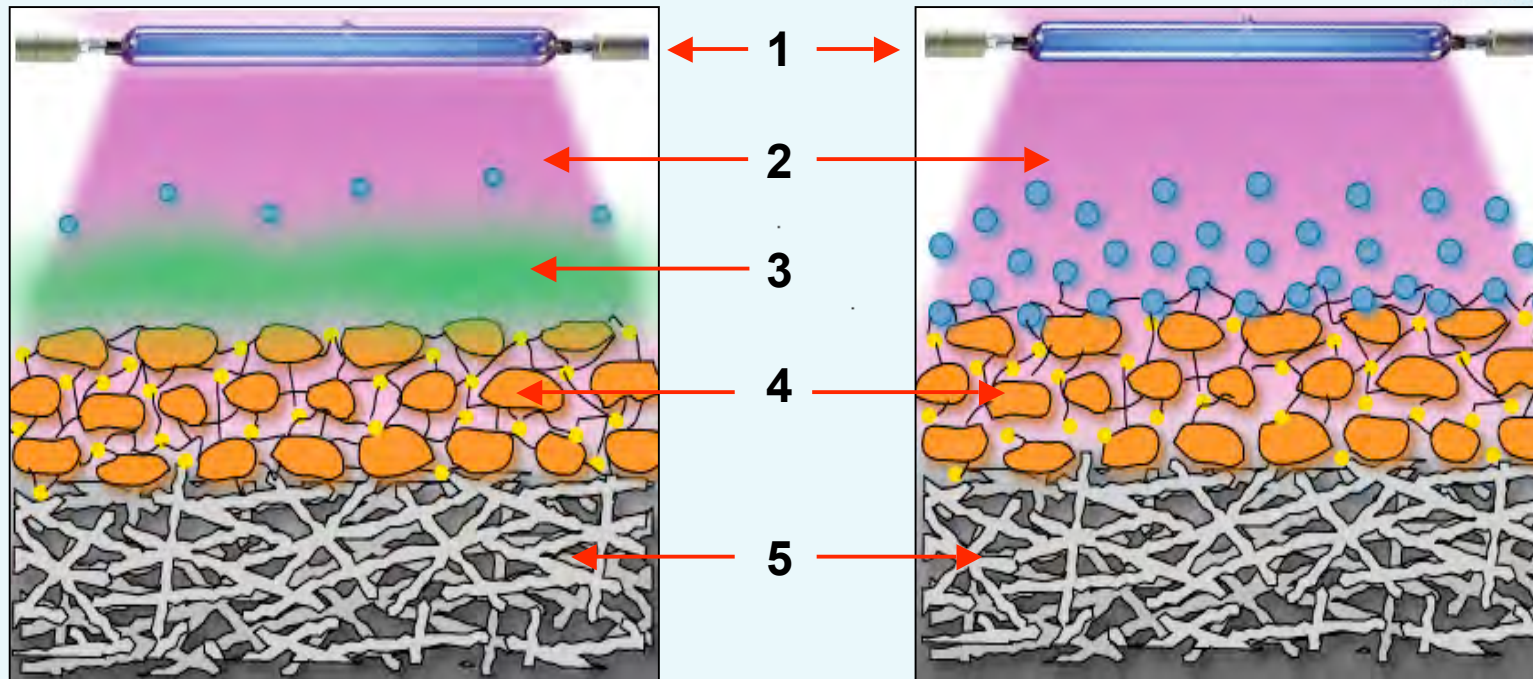


**Heatset**



**UV**

# Conventional v Inert UV curing



## Conventional UV

- 1: UV lamp
- 2: Atmosphere under the lamp
- 3: **Oxygen molecules inhibits curing**
- 4: Ink with photoinitiators
- 5: Paper substrate

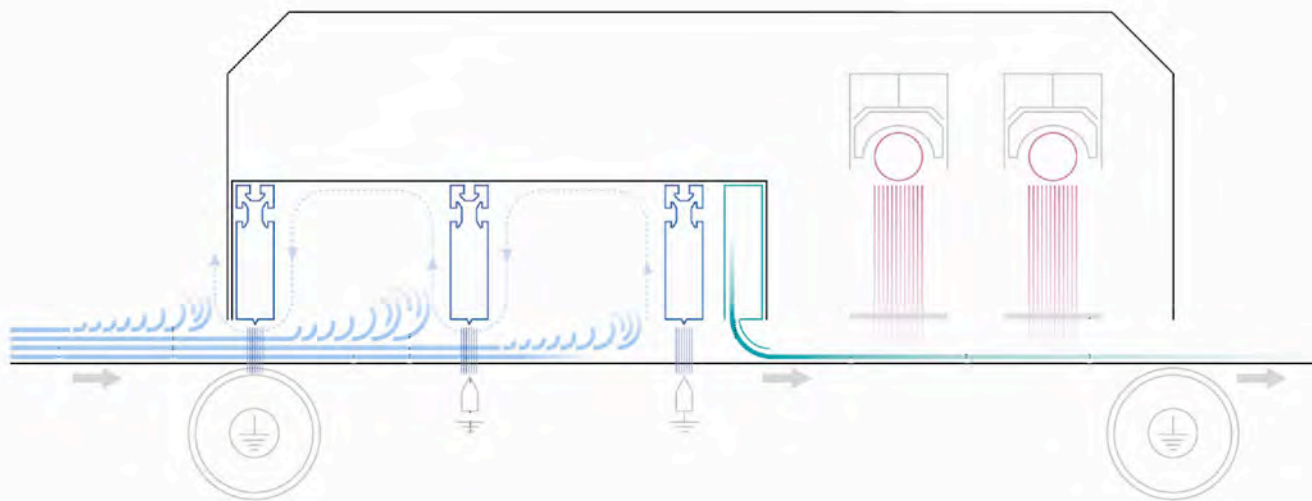
## NEW Inert UV

Oxygen replaced by  
Nitrogen (N<sub>2</sub>) to create inert  
atmosphere



## INNOCURE – Innovative Curing

- UV technology
- curing under inert conditions, nitrogen substitute oxygen
- high speed applications tested up to 39.4 ft/s (12 m/s)
- noticeably shorter dimensions of curing chamber (compared to Heatset dryer)
- 2 UV modules per side (reduction of electr. energy & heat input)
- reduction of typical UV odor emissions
- ozone gases not formed and carried over the paper web (no corrosion)





smoke stream against web direction **without e-field**

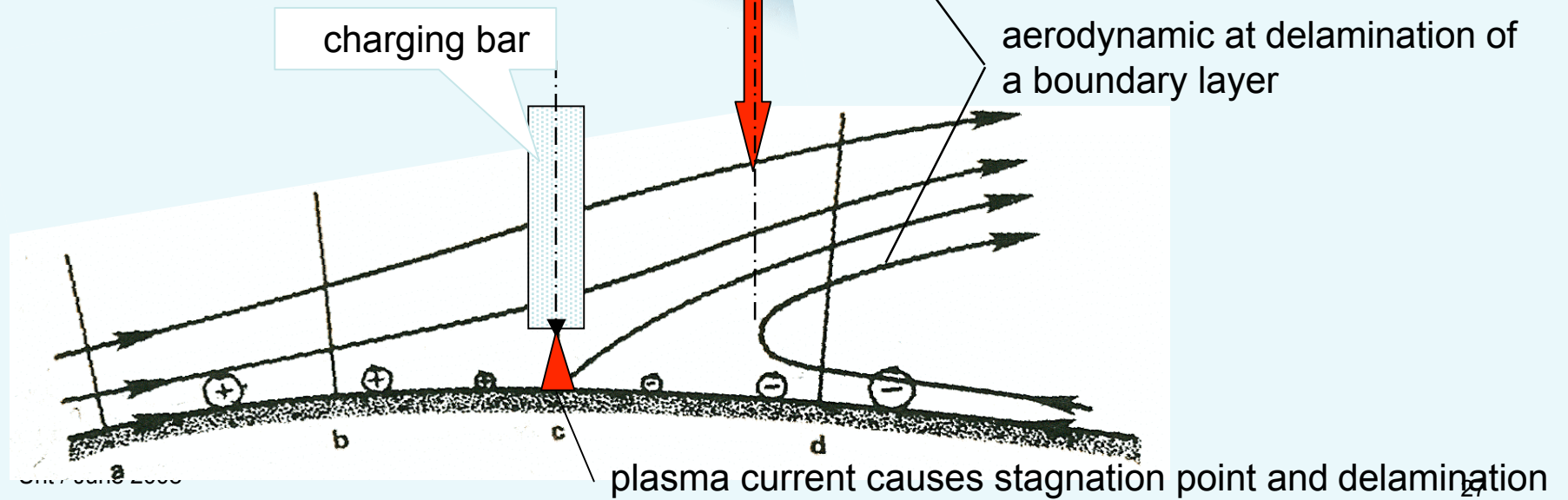
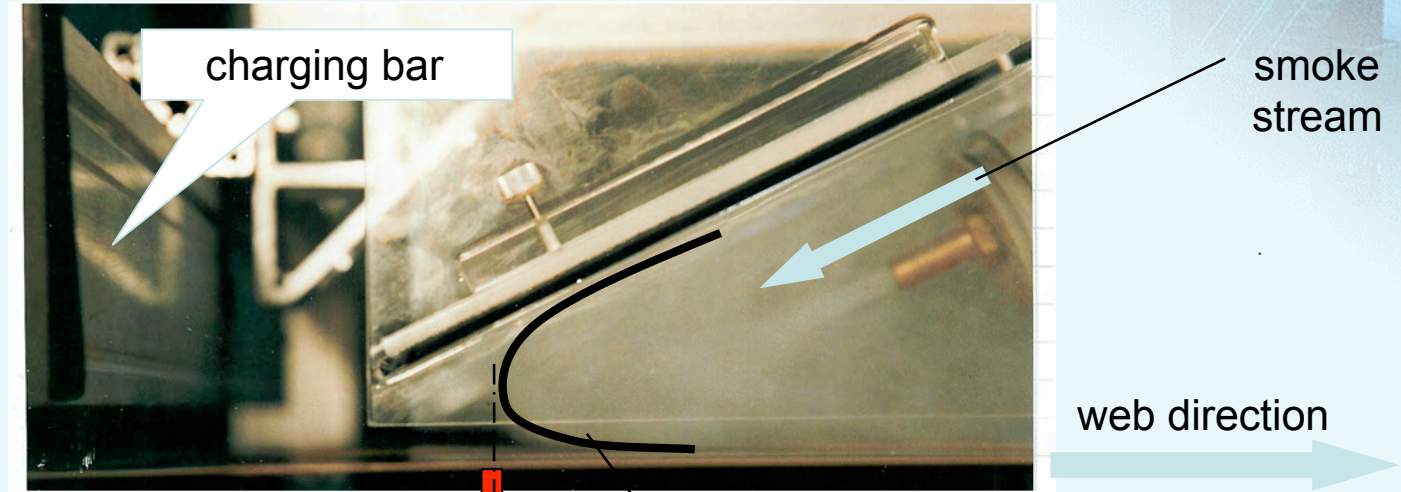
8 m/s

web direction

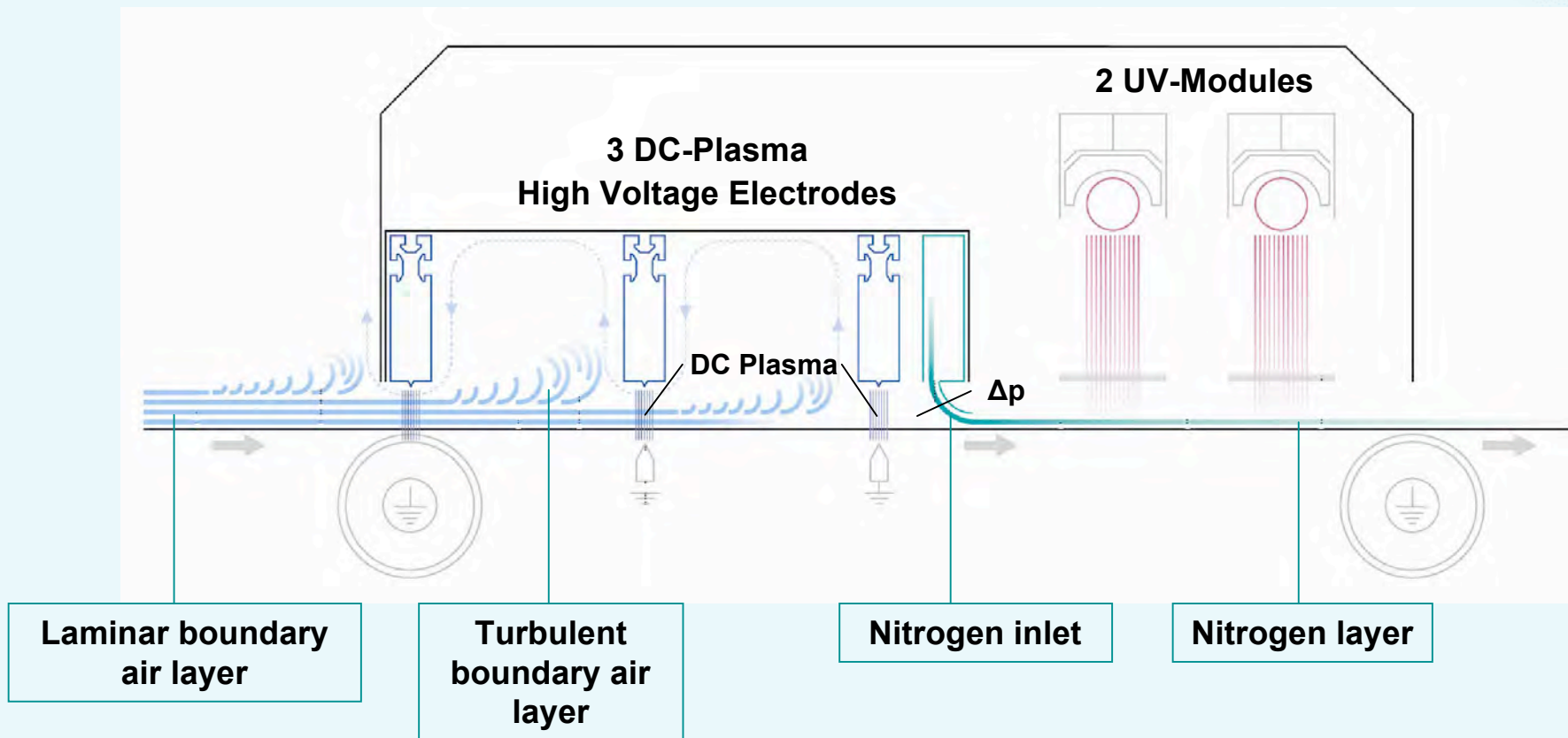
smoke stream against web direction **with e-field**

8 m/s

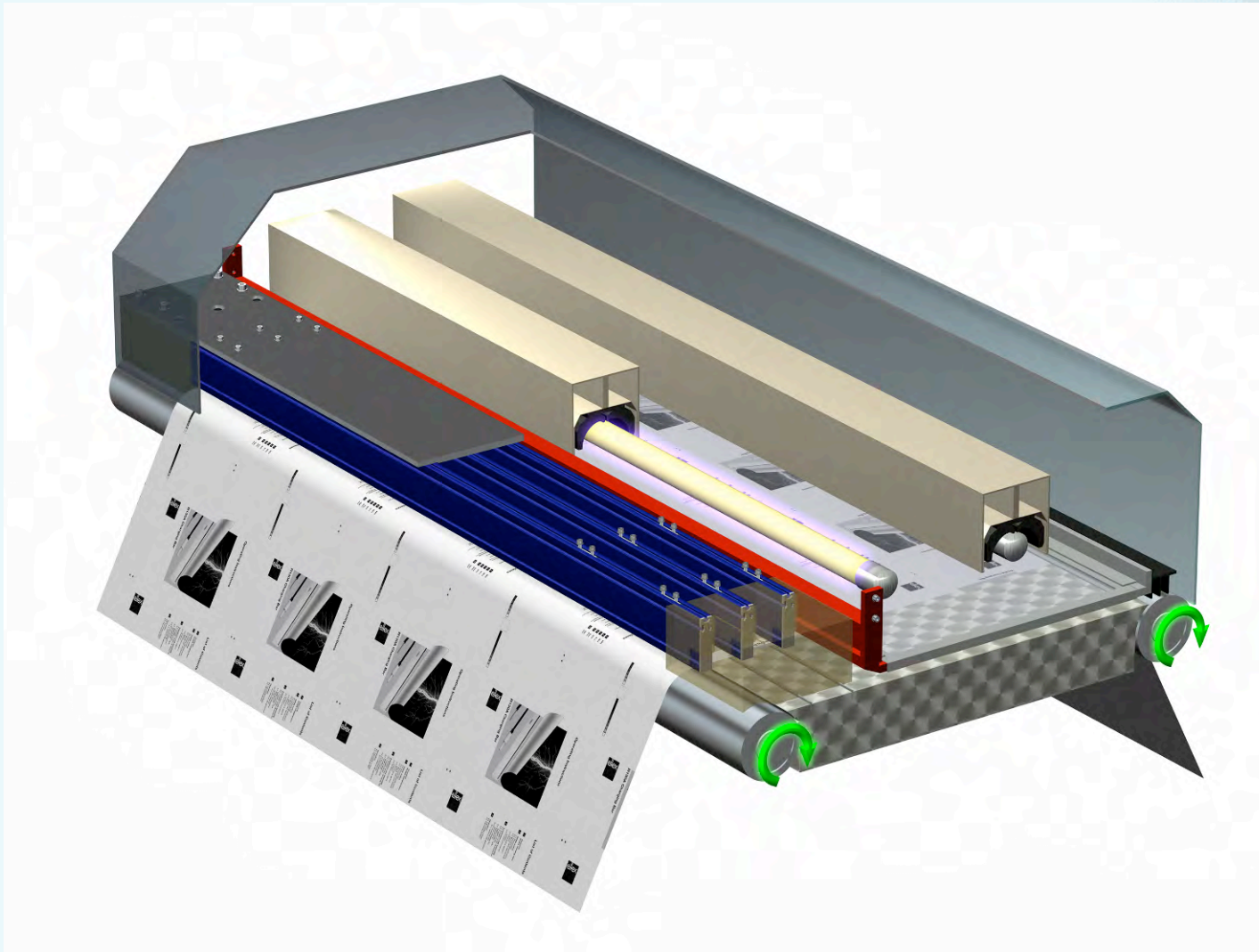
web direction



# How does it work?

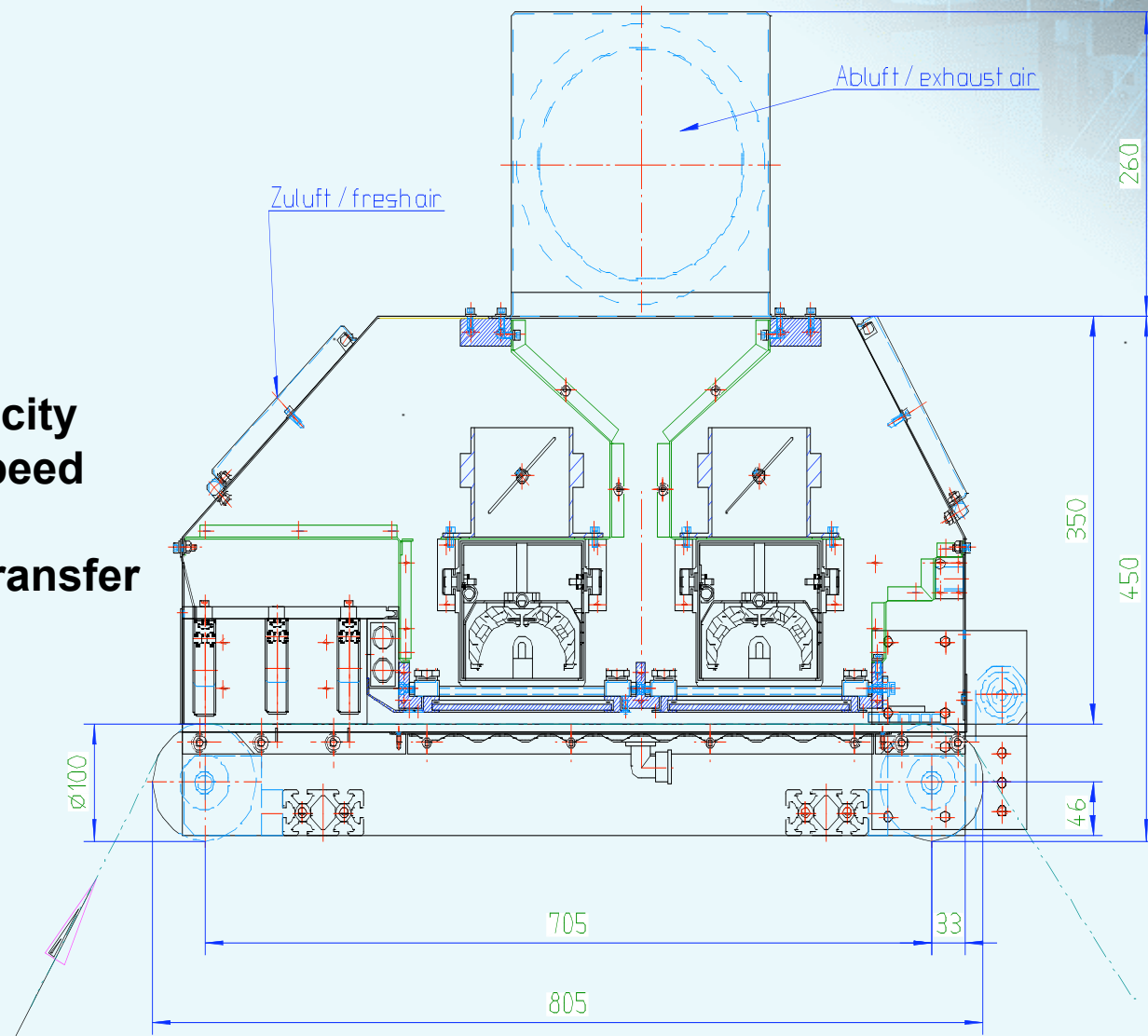


# Curing Chamber Model INNOCURE



**Inert UV:**

- 35% less electricity or faster print speed
- 80% less heat transfer
- Better gloss



## Implementation at Herold



# Overview of the components

Control cabinet



Exhaust ventilator



Nitrogen tank



Heat exchanger



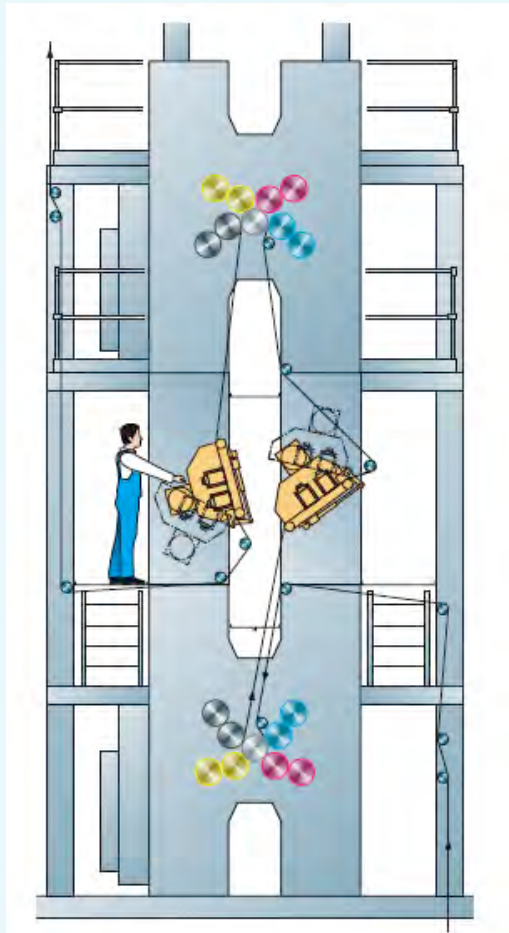
Remote Control



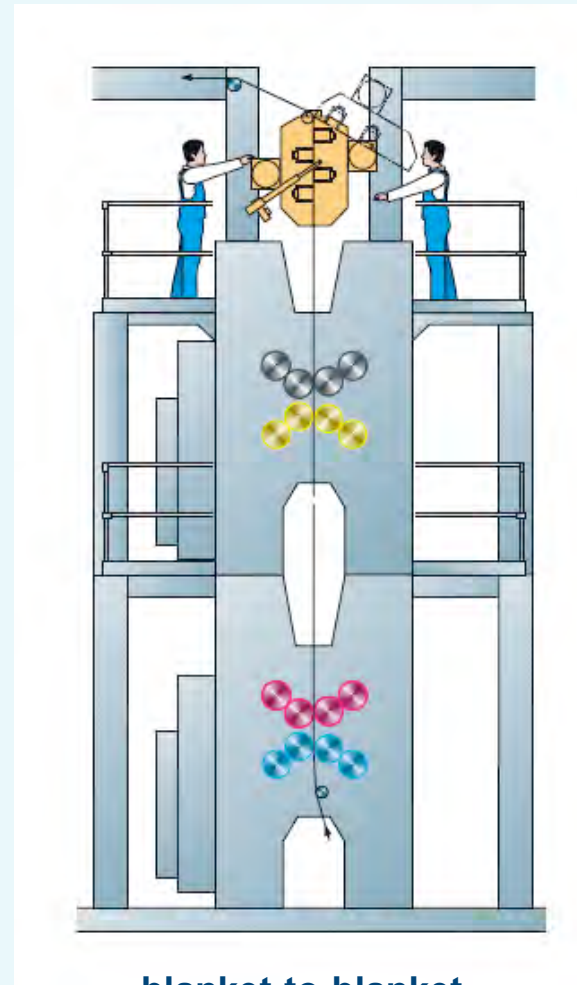
Chill water console



# Printing Press Configurations

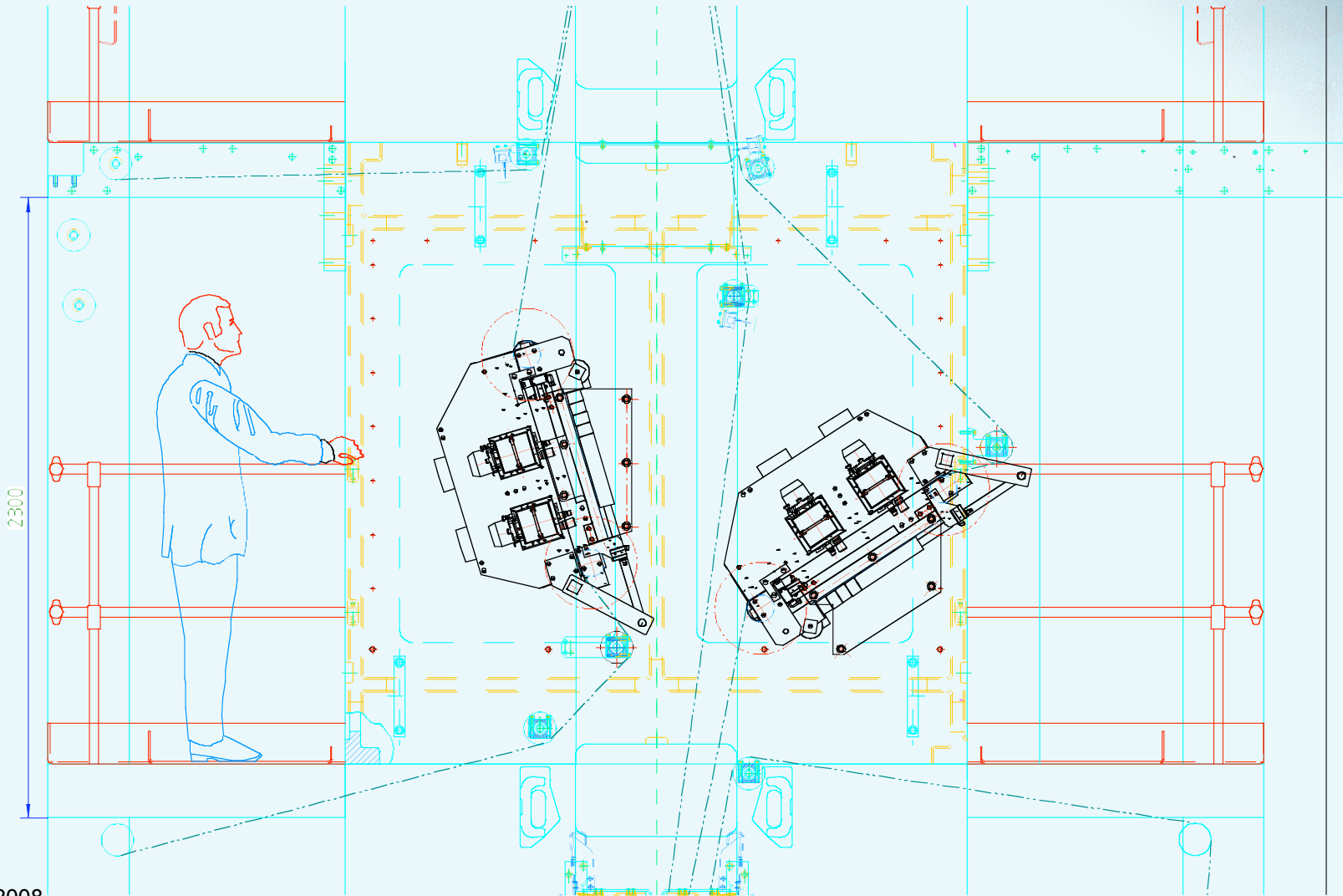


**Central impression cylinder**

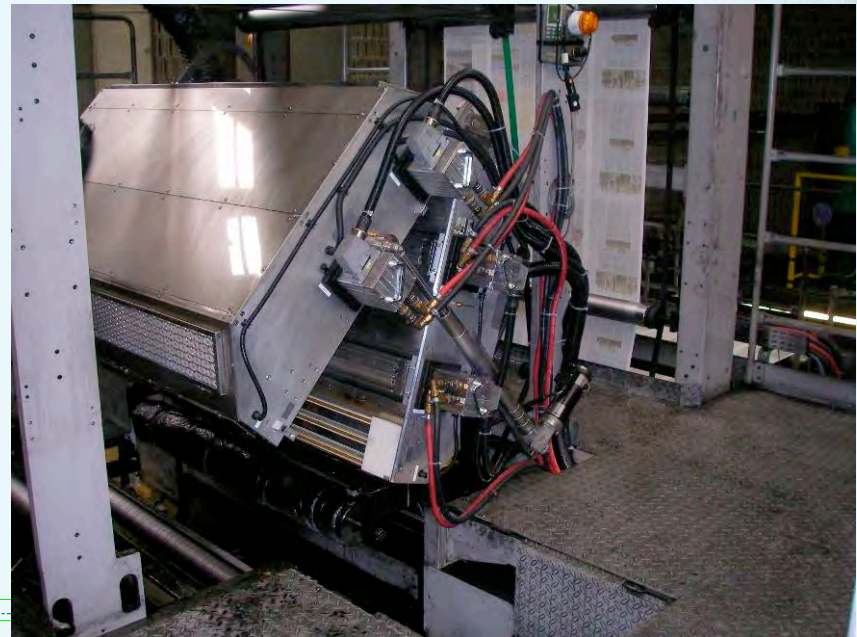
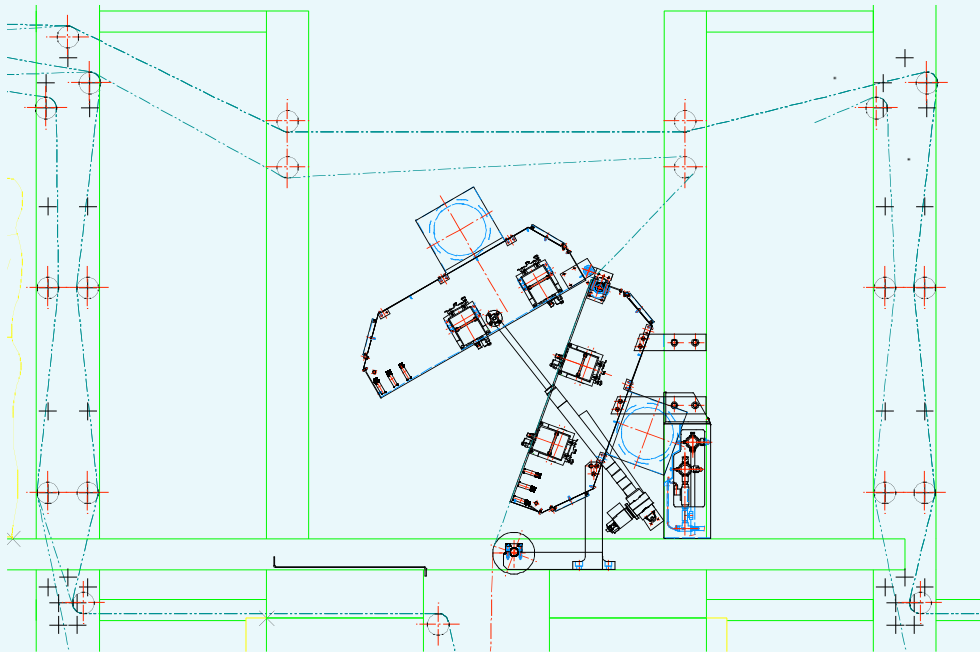


**blanket-to-blanket**

# Installation on a CIC press



# Installation on a machine with blanket-to-blanket printing units Le Monde, Paris France



## INNOCURE, data sheet

### equipment for 1 printing tower (curing on both sides of the web)

#### UV:

- UV lamps, mercury lamps: 4 with each 240 W/cm, length 1300 mm
- spec. lamp power: 4x 31,2 kW
- electrical connexion power: 3x400 V, 50 Hz, ~ 150 kW

#### Inert gas:

- nitrogen consumption: 2x 90 Nm<sup>3</sup>/h, total 180 Nm<sup>3</sup>/h

#### Cooling:

- exhaust air, ozone: total ~ 2800 m<sup>3</sup>/h
- cooling power, 100 l/min,  $\Delta T=10$  K: total ~ 60 kW

#### other:

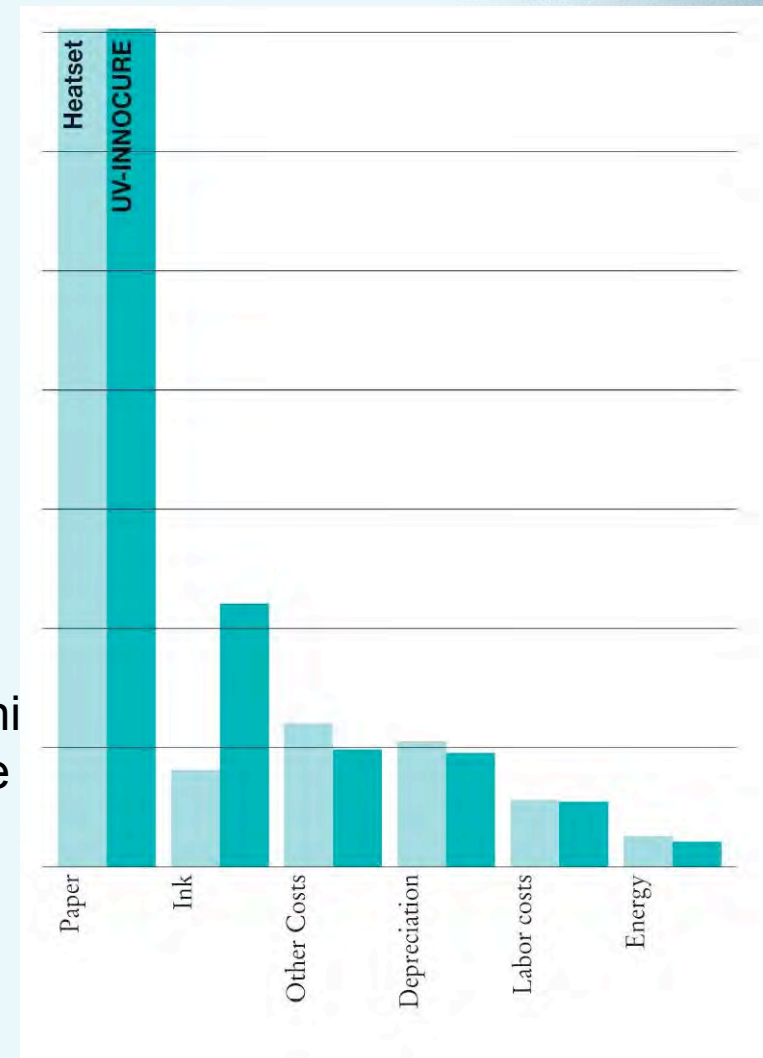
- compressed air: 6 bar, only for Shutter-movements

## Costs of consumables

- nitrogen 0,12 €/m<sup>3</sup>
- electric power 0,044 €/kWh
- UV ink 8,- €/kg
- **costs per 1000 samples (paper: 54 g/m<sup>2</sup>)**

**UV INNOCURE** approx. 47,04 €  
**Heatset** approx. 43,77 €

- UV printed products are from 6 – 11 % more expensive, depending on the paper. However, this is compensated for by higher printing quality, the non-critical UV process and the operational advantages, from the space requirements to environmental protection.



## Summary:

- production speed  $\geq$  39.4 ft/s (12 m/s)
- high printing quality and brilliance on coated and shining papers
- simple retrofitting and/or equipment of newspaper presses; compact construction, curing length  $<$  4.6 ft (1.4 m)
- 4-color wet-in-wet print with only 2 UV lamps per side
- low energy consumption; minimal heat input
- high UV efficiency by using electronic ballasts
- nitrogen replaces the disturbing oxygen while activating of curing

## Our experience after twelve months:

- Now three UV-ink manufacturers (Sun Chemical, Flint, Arets)
- Sequence of printing the colors (CMYK)
- Temperature of the Paper max. 40 °C (=100 °F)
- Choice of paper
- Speed of printing no problem
- Advertisers are very happy
- Increasing circulation up to 18%
- Increasing revenue 2007 11%





**UV in Vienna:  
World first and World speed record  
at  
Herold Druck und Verlag AG Austria**