

# Technical details

## Clear & Concise

### Sheet format:

Maximum (straight printing/perfecting)	740 x 1060 / 740 x 1060	mm
Minimum (straight printing/perfecting)	340 x 480 / 400 x 480	mm

### Print format:

Maximum	730 x 1050	mm
Maximum before perfecting	720 x 1050	mm

### Substrates<sup>1)</sup>:

Standard	0.06 - 0.7	mm
with lightweight equipment	0.04	mm
with board-handling equipment	1.2	mm
with corrugated equipment	1.6	mm
Press with perfecting	0.8	mm

### Production speed<sup>2)</sup>:

Up to 8 printing units	18,000	sheets/hr
Press with perfecting in straight mode, up to 8 printing units	18,000	sheets/hr
Press with perfecting in perfecting mode, up to 8 printing units	15,000	sheets/hr

### Pile height<sup>3)</sup>:

Feeder	1,300	mm
Delivery	1,200	mm

### Plate and blanket dimensions:

Plate size	795 x 1060	mm
Standard copy line	36	mm
Blanket size	860 x 1070	mm

<sup>1)</sup> Printability is also influenced decisively by the flexural rigidity of the substrate

<sup>2)</sup> Dependent on individual processing parameters, e.g. the inks and substrates used

<sup>3)</sup> From floor / without non-stop operation



**KBA Rapida 106 DriveTronic SPC**  
**is manufactured by Koenig & Bauer AG**

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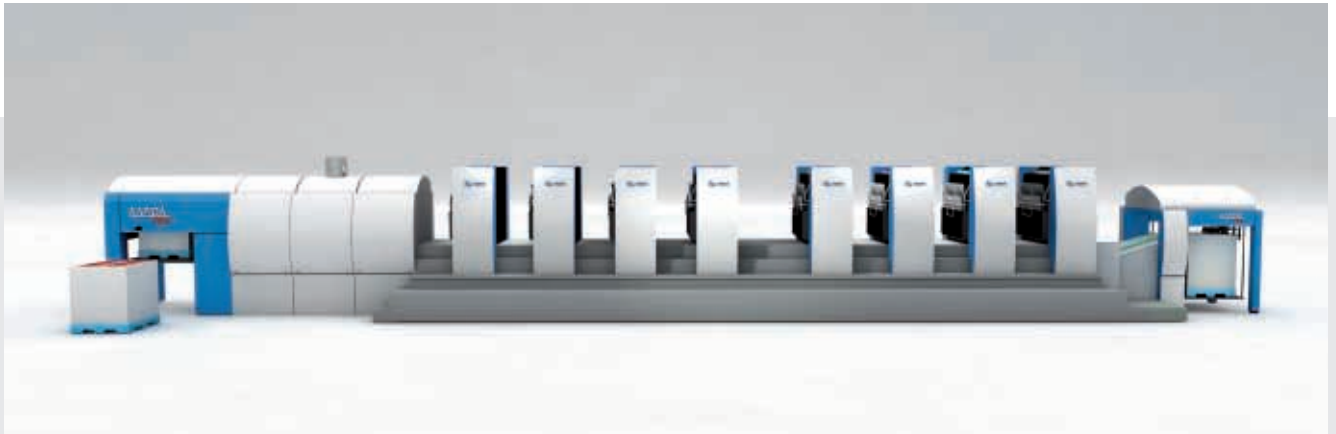
# KBA RAPIDA 106

## DriveTronic SPC

Technical information

# Rapida 106 DriveTronic SPC

## The benchmark for productivity



Many printers are in the meantime producing for worldwide customers, or otherwise exploiting the benefits of globalisation with regard to materials supplies, labour costs or investment and tax incentives. Those operating solely on their domestic markets, on the other hand, rely on the innovative strengths of the printing press manufacturers to further the optimisation of their production processes and in this way to compensate the purported location disadvantages.

### **KBA innovation drive**

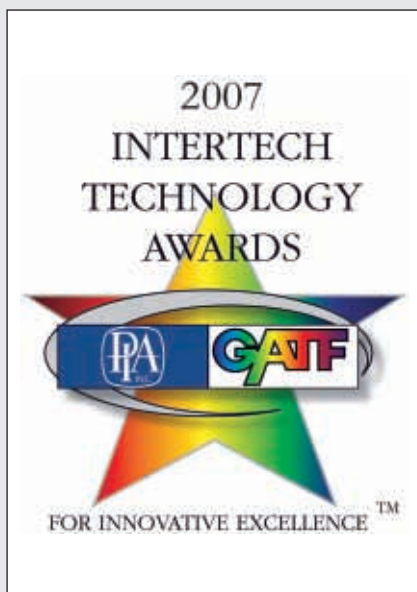
Innovations from across the whole KBA product range are examined constantly to identify integration potential for the sheetfed offset process, keeping a constant eye on the central goals of faster makeready and even greater productivity. Automation options from the most varied origins have been developed further and adapted to the specific needs of sheetfed offset users.

### **DriveTronic dedicated drive technology**

The direct drive concept was already introduced in 2000 with the shaftless DriveTronic Feeder.

At drupa 2004, KBA again underlined its technology leadership with the presentation of DriveTronic Side Lay (SIS) and DriveTronic Infeed, a sidelay-free infeed system and motorised adjustment for individual front lays.





### The revolution: **DriveTronic SPC** (= Simultaneous Plate Change)

DriveTronic SPC is the latest expression of KBA's commitment to advanced dedicated-drive technologies. With this new system, the plate cylinder is freed from all intermediate drive elements such as gears and clutches. Whole mechanical assemblies have been eliminated. This speeds up the changeover processes significantly, permitting appreciable reductions in makeready times.

### New functionalities and function principles

The full potential of DriveTronic SPC is demonstrated in combination with the automation concept KBA-Tronic and an array of further concepts to reduce makeready times. Makeready savings of up to 65 per cent are possible.



# DriveTronic – Concept

## Function principles and their benefits

### The drive concept

The development was still viewed with scepticism a few years ago, but intensive industrial trials have proved KBA's sheetfed offset designers right: Dedicated drives with liquid-cooled high-torque motors now form the heart of DriveTronic SPC.

Successful interdisciplinary optimisation has achieved previously unknown power densities. All parts which come into contact with the cooling medium are manufactured in stainless steel.

### Simultaneous plate change with DriveTronic SPC

The plate changing process now takes just one minute, irrespective of the number of printing units. At the same time, further valuable functions are available to the operator:

- Electronic setting of the start of print
- Electronically controlled circumferential register
- Plate changing parallel to other press processes

### DriveTronic Feeder

Four independent, electronically controlled drives for

- feeder head
- suction belt
- pile transport for the main pile
- pile transport for the auxiliary pile in non-stop operation

eliminate wear-prone feeder components such as clutches, cardan shafts and timing gears. Ultimate preset capabilities provide for exceptionally reduced makeready.

### Comparison of plate changing costs

Basis: Rapida 106-6+L,  
press-hour rate € 350

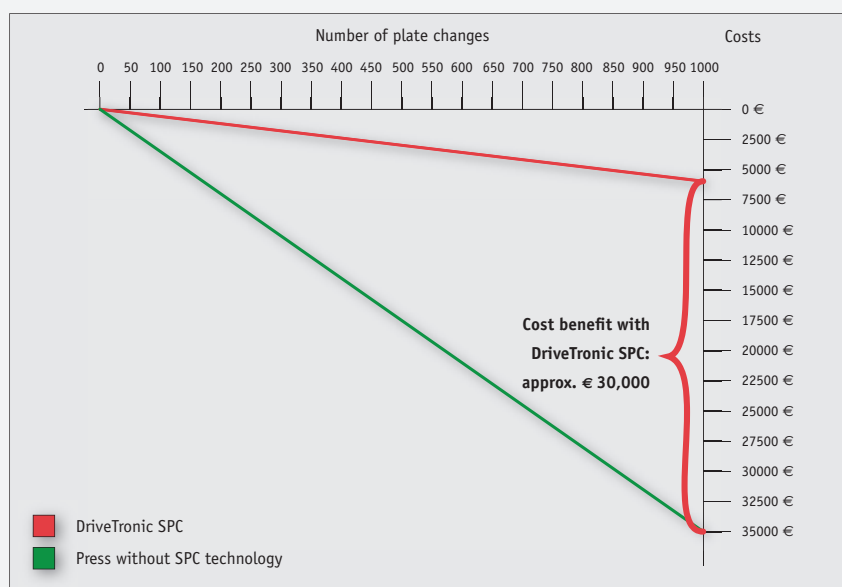
#### Plate change:

DriveTronic SPC - 1 minute

Conventional press - 1 minute per unit  
6 units = 6 minutes

**After 1,000 plate changes, the cost benefit of the Rapida 106 with SPC amounts to**

**approx. € 30,000**







#### **DriveTronic Infeed**

All settings at the feed line are motorised. To further reduce makeready times, the operator is offered clear, graphics-based menu screens with access to:

- Gripper margin settings (positioning of the image relative to the front edge of the sheet)
- Skew feed correction (e.g. to compensate inaccurately cut substrates)
- Individual adjustment of the front lays, should the leading edge of the sheet not be straight
- Front lay cover height adjustment to accommodate different substrate thicknesses

#### **DriveTronic SideLay**

##### **(SIS = Sensoric Infeed System)**

With DriveTronic Side Lay, a conventional side lay is no longer necessary. The sheet is pulled to its correct lateral alignment not on the feed table, but instead by way of an axially shifted gripper bar on its way to the impression cylinder. The positioning is defined at the console and can be preselected with the job changeover program. As the sheet no longer has to be pulled, more time is available for alignment at the feed line, which naturally promotes an excellent feed register. DriveTronic SideLay earned KBA the 2007 GATF InterTech Technology Award of the Printing Industries of America/Graphic Arts Technical Foundation (PIA/GATF).

#### **DriveTronic Plate Ident**

Special register marks on the plates are used to preset the registration for all plate cylinders before printing even begins. At the same time, DriveTronic Plate Ident reads a data matrix code copied onto the plates to ensure that each plate is assigned to the correct unit on the press.



# Concepts

## to reduce makeready times

### Function principles

### and their benefits

#### Job changeover program

The job changeover program has been specially developed to integrate seamlessly into the operating philosophy of the ErgoTronic control console. While current production continues, the operator can already load the next job and can preselect all the associated makeready processes. When the program is subsequently activated, all the relevant processes run fully automatically and in their logical sequence. It is no longer necessary to activate individual process steps and there are thus also no avoidable interruptions to negatively influence the overall makeready time.

Preselection options:

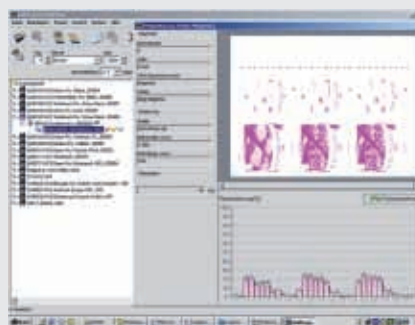
- Plate changing processes
- Washing processes
- Format-related settings
- Substrate-related settings
- Sheet travel settings

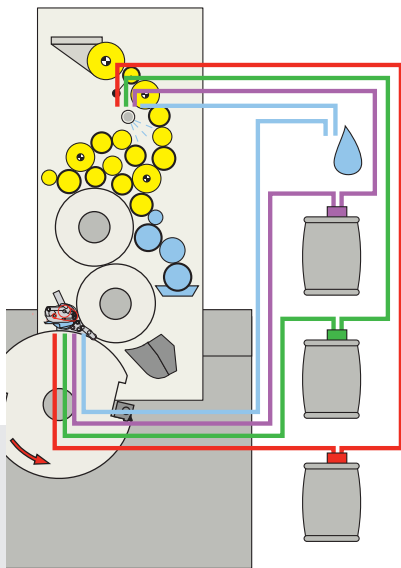
#### Recalling of saved presetting data

All job-related data can be saved via the ErgoTronic control console and can then be recalled at any later date in case of repeat jobs. As a result, the press is ready for production even faster and start-up wastage is reduced to a minimum.

#### Optimised press start

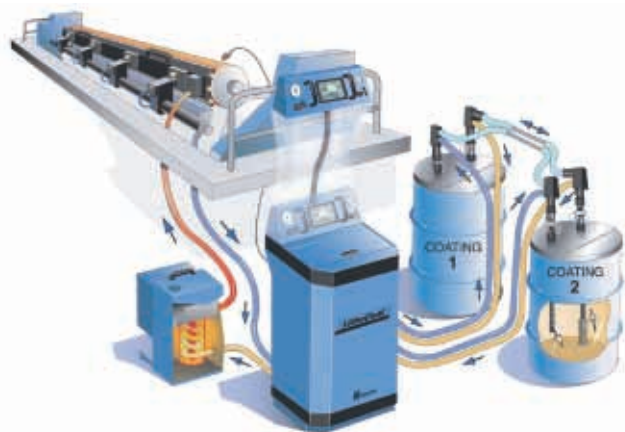
It is possible to preselect a higher press speed when starting production on the Rapida 106. Efficiency is further enhanced by the two-stage impression switching. First, the inking and dampening units are dropped onto the plate. Subsequently, the blanket cylinder is brought into contact with the predampened and inked plate. When the sheets arrive at the first printing unit, the press accelerates to the preselected speed and the second stage of the impression-on switching is triggered. This provides for a better drag coefficient on the sheet, fast attainment of an ink-water balance and minimised start-up waste.





#### Multiple-circuit washing system

This system comprises several independent washing circuits and spray systems. Individually matched washing programs and solvents can be selected via the console to suit the ink system in use (hybrid/UV/conventional). Makeready is also shortened with the multiple-circuit washing system, especially on hybrid presses.



#### Fully automatic coater cleaning system

All components which come into contact with the coating are cleaned efficiently within the press. There is no need to remove components for external cleaning. All operator actions are performed via the control console.

#### Washing times:

Complete coating change:  
Dispersion to UV (or vice versa)  
approx. 8 minutes  
Simple coating change:  
Dispersion to dispersion (or UV to UV)  
approx. 1-2 minutes

Washing programs of varying lengths can be selected.

#### Comparison of coating supply cleaning

Basis: Rapida 106-6+L, cleaning for change "Dispersion to dispersion", 1 cleaning cycle per shift, 3 shifts per day, 5 days per week, 52 weeks

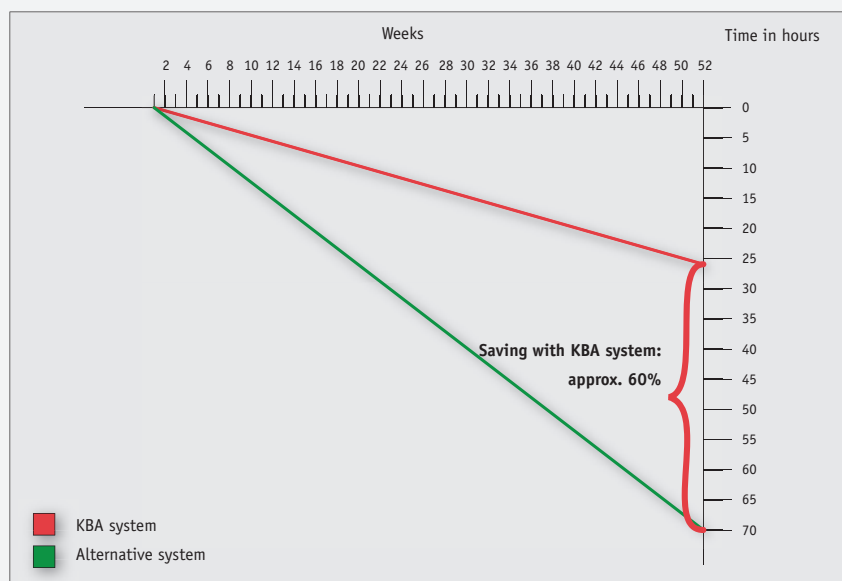
#### Cleaning time:

KBA system - 2 minutes

Alternative system - 5 minutes

After 52 weeks, the saving with the KBA system amounts to

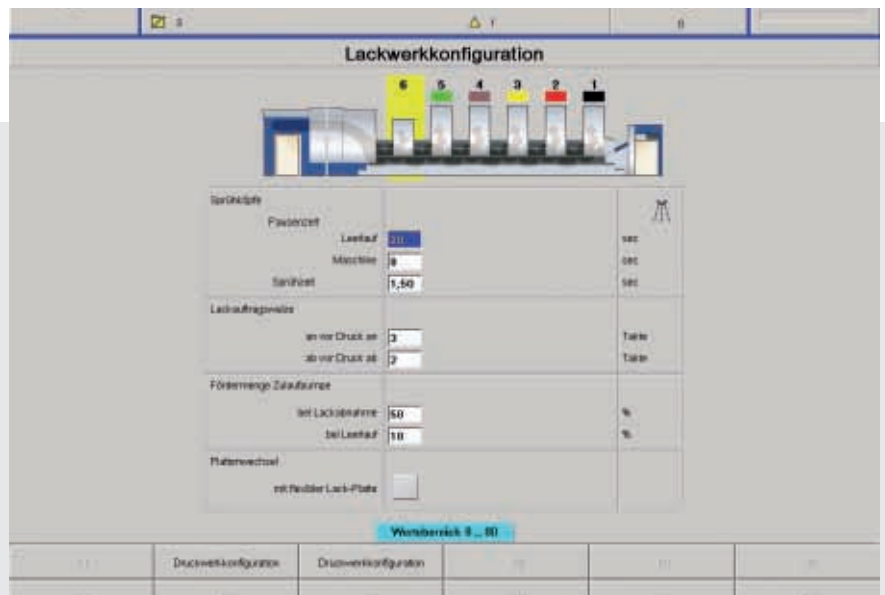
**approx. 60%**





### Coating forme change

The automated coating forme change function guarantees maximum convenience for the operator. All process steps are triggered at the key panel on the coating tower itself and then run automatically. A pressure roller smoothes the forme onto the cylinder as it is mounted and thus eliminates all need for manual intervention.



### Makeready comparison, coating forme change

Basis: Rapida 106-6+L, press-hour rate € 350

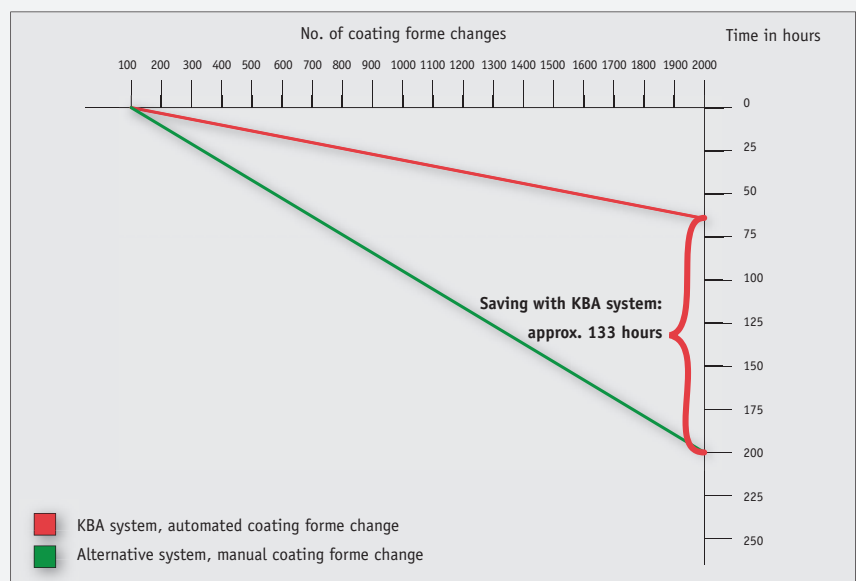
#### Coating forme change:

KBA system, automated - 2 minutes

Alternative system, manual - 6 minutes

After 2,000 coating forme changes with the KBA system, the saving amounts to

**approx. 133 hours and  
approx. € 46,666**





### Automatic suction ring positioning (ASP)

Automatic positioning of the suction rings on the delivery sheet brake relieves the operator of otherwise time-consuming manual settings. It is only necessary to specify the desired suction ring positions at the ErgoTronic console; all further process steps run fully automatically. It is even possible to make corrections without interrupting

production on the press. This function is especially useful when perfecting with frequent format changes.

### ErgoTronic ACR

This system for automatic register correction comprises a camera installed at the control console, an integrated computer and the corresponding software. It uses the camera to determine register differences and communicates appropriate adjustment values to the lateral, circumferential and diagonal register systems on the individual printing units.

### Makeready comparison, suction rings

Basis: Rapida 106-10 SW5, press-hour rate € 400

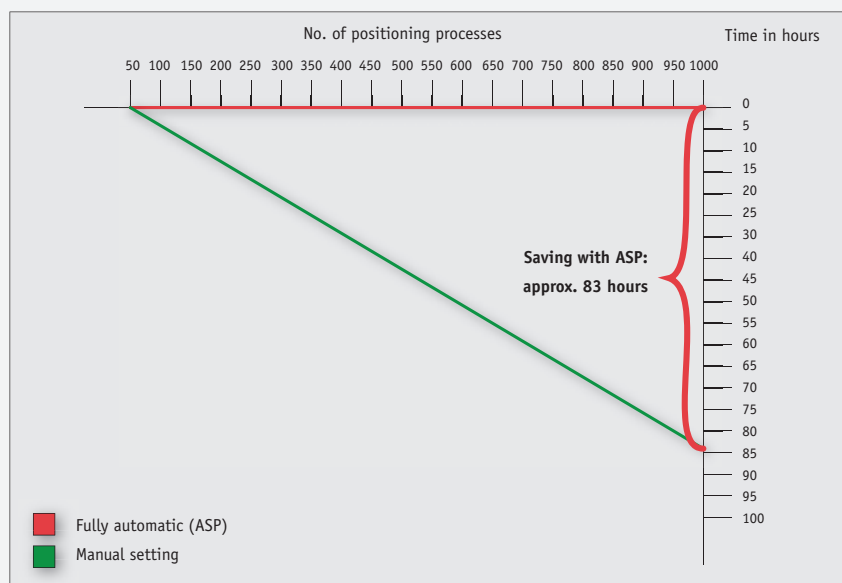
#### Suction ring positioning:

Fully automatic positioning of 3 suction rings (ASP) - 0 minutes

Manual positioning of 3 suction rings - 5 minutes

After 1,000 settings of the suction rings with ASP, the saving amounts to

**approx. 83 hours and  
approx. € 33,333**



# At a glance:

## The full potential with DriveTronic SPC

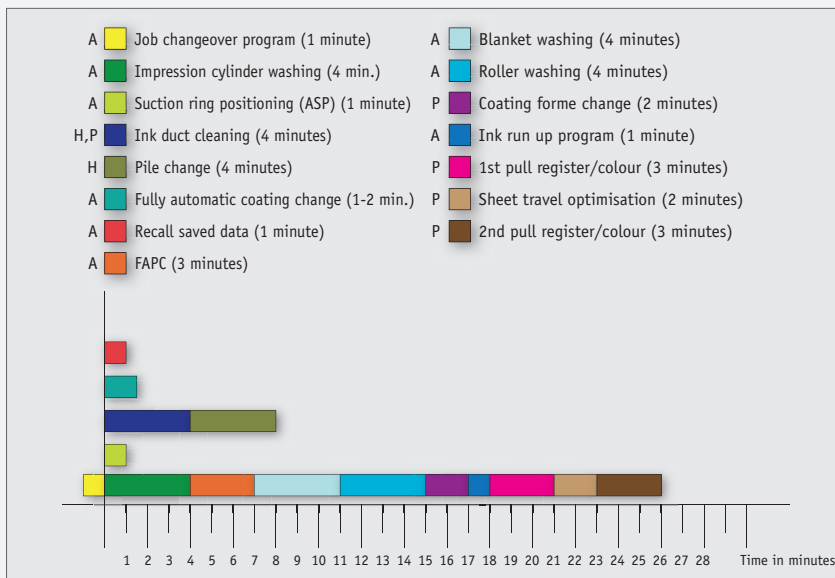
The diagrams below compare the makeready times for the Rapida 106 in different configurations and with different levels of equipment.

It is here assumed that a press crew always comprises a printer (P) and a helper (A).

Automatic components are indicated with an A

### Makeready processes which can run simultaneously

- Plate change - blanket washing
- Plate change - impression cylinder washing
- Plate change - transfer of all presetting data
- Roller washing - blanket washing



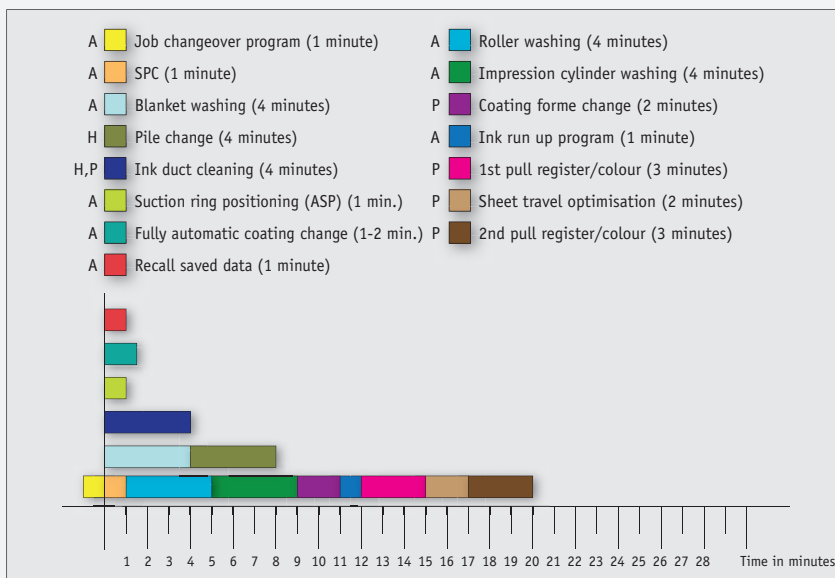
### Rapida 106-6+L ALV2 without DriveTronic SPC:

#### Necessary makeready:

Complete job changeover: Plate change, substrate change (format and thickness), coating forme change, coating change (same system) and two ink changes

#### Equipment features:

FAPC - Fully Automatic Plate Change, multiple-circuit washing system, DensiTronic professional, LogoTronic with CIP4 integration, recalling of saved presetting data, job changeover program, ink duct cleaning, fully automatic coating change, coating forme change, optimised press start, register



### Rapida 106-6+L ALV2 with DriveTronic SPC:

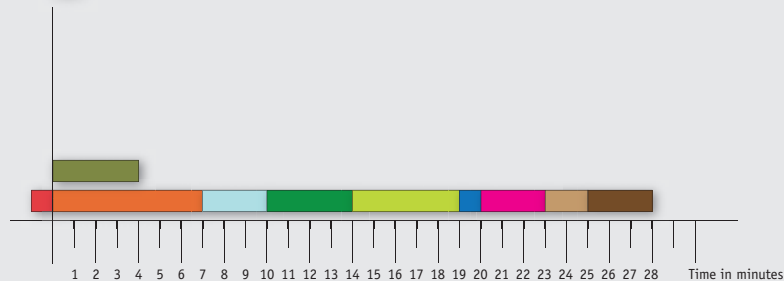
#### Necessary makeready:

Complete job changeover: Plate change, substrate change (format and thickness), coating forme change, coating change (same system) and two ink changes

#### Equipment features:

DriveTronic SPC, multiple-circuit washing system, DensiTronic professional, LogoTronic with CIP4 integration, recalling of saved presetting data, job changeover program, ink duct cleaning, fully automatic coating change, coating forme change, optimised press start, register

- A Recall saved data (1 minute)
- A FAPC (7 minutes)
- H Pile change (4 minutes)
- A Suction ring positioning (5 minutes)
- A Blanket washing (3 minutes)
- A Impression cylinder washing (4 minutes)
- A Ink run up program (1 minute)
- P 1st pull register/colour (3 minutes)
- P Sheet travel optimisation (2 minutes)
- P 2nd pull register/colour (3 minutes)



### Rapida 106-8 SW4 without DriveTronic SPC:

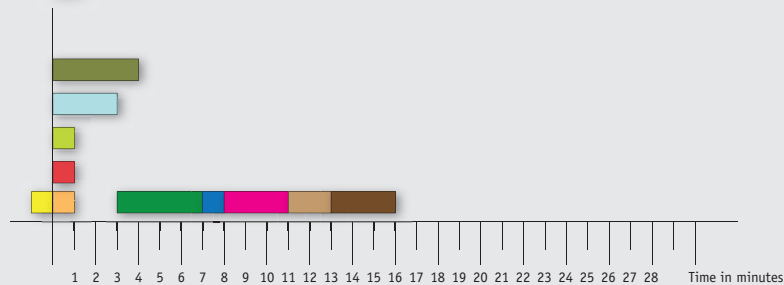
#### Necessary makeready:

Complete job changeover: Plate change, substrate change (format and thickness)

#### Equipment features:

FAPC - Fully Automatic Plate Change, multiple-circuit washing system, DensiTronic professional, LogoTronic with CIP4 integration, recalling of saved presetting data, job changeover program, optimised press start, suction ring positioning, register

- A Job changeover program (1 minute)
- A SPC (1 minute)
- H Pile change (4 minutes)
- A Blanket washing (3 minutes)
- A Suction ring positioning (ASP) (1 minute)
- A Recall saved data (1 minute)
- A Impression cylinder washing (4 minutes)
- A Ink run up program (1 minute)
- P 1st pull register/colour (3 minutes)
- P Sheet travel optimisation (2 minutes)
- P 2nd pull register/colour (3 minutes)



### Rapida 106-8 SW4 with DriveTronic SPC:

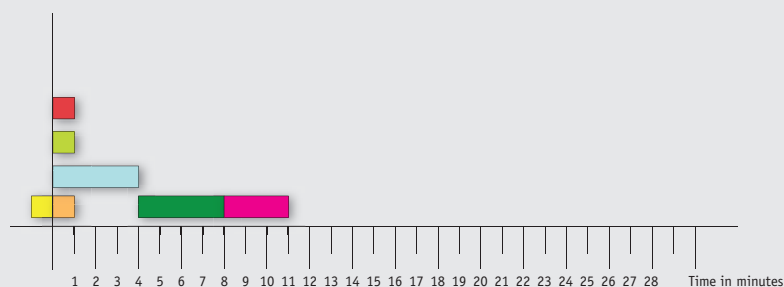
#### Necessary makeready:

Complete job changeover: Plate change, substrate change (format and thickness)

#### Equipment features:

DriveTronic SPC, multiple-circuit washing system, DensiTronic professional, LogoTronic with CIP4 integration, recalling of saved presetting data, job changeover program, optimised press start, suction ring positioning, register

- A Job changeover program (1 minute)
- A SPC (1 minute)
- A Blanket washing (4 minutes)
- A Suction ring positioning (ASP) (1 minute)
- A Recall saved data (1 minute)
- A Impression cylinder washing (4 minutes)
- P 1st pull register/colour (3 minutes)



### Rapida 106-8 SW4 with DriveTronic SPC:

#### Necessary makeready:

Only section and plate change

#### Equipment features:

DriveTronic SPC, multiple-circuit washing system, DensiTronic professional, LogoTronic with CIP4 integration, recalling of saved presetting data, job changeover program, optimised press start, register



# DriveTronic SPC – a profitable investment

## Facts and figures

The basis for determination of the payback period is a work-centre and profitability calculation for the printing press.

The following basic data are assumed for the calculations:

Press:	Rapida 106-8 with perfecting (4/4)
Manning:	1 printer and 1 helper
Working days:	250
Shifts per day:	3
Working hours per shift:	7.4 hours
Capacity utilisation:	300%
Availability:	85%
Makeready per job:	with DriveTronic SPC 16 minutes without DriveTronic SPC 27 minutes
Maximum printing speed:	15,000 sheets/hour in perfecting mode, 18,000 sheets/hour in straight printing
Average run length:	10,000
Printing passes:	1

Revenue = Production costs + overheads + 10%

(Social conditions and working hours in accordance with German guidelines)

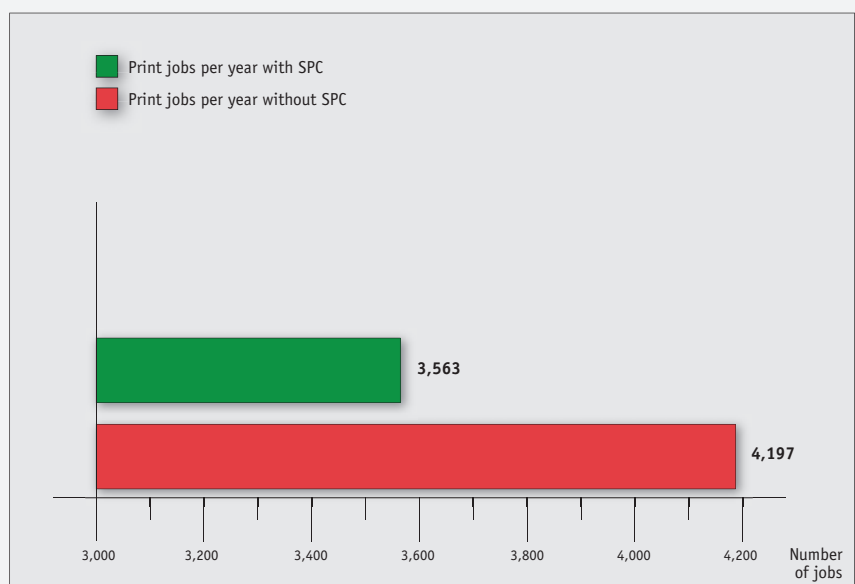
Taking into account the different makeready times per job, calculation of the maximum production capacity for the Rapida 106 produces the following results:

The Rapida 106 without SPC is able to handle 3,563 jobs.

The Rapida 106 with SPC is able to handle 4,197 jobs.

**This represents a plus for the Rapida 106 with SPC of**

**634 jobs.**





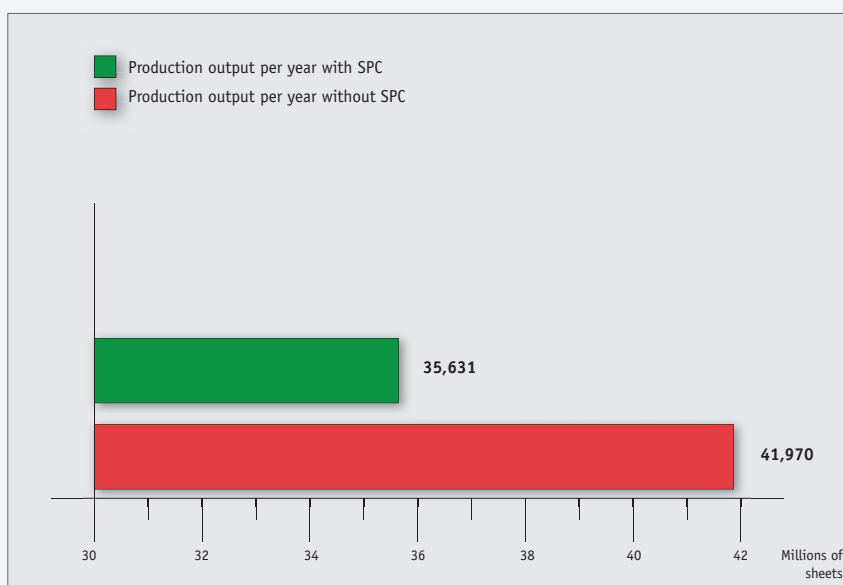
The maximum annual production output of the Rapida 106 is calculated by multiplying the number of jobs by the average run length.

The Rapida 106 without SPC achieves an annual output of 35,631,000 sheets.

The Rapida 106 with SPC achieves an annual output of 41,970,000 sheets.

**This represents a plus for the Rapida 106 with SPC of**

**6,339,000 sheets.**

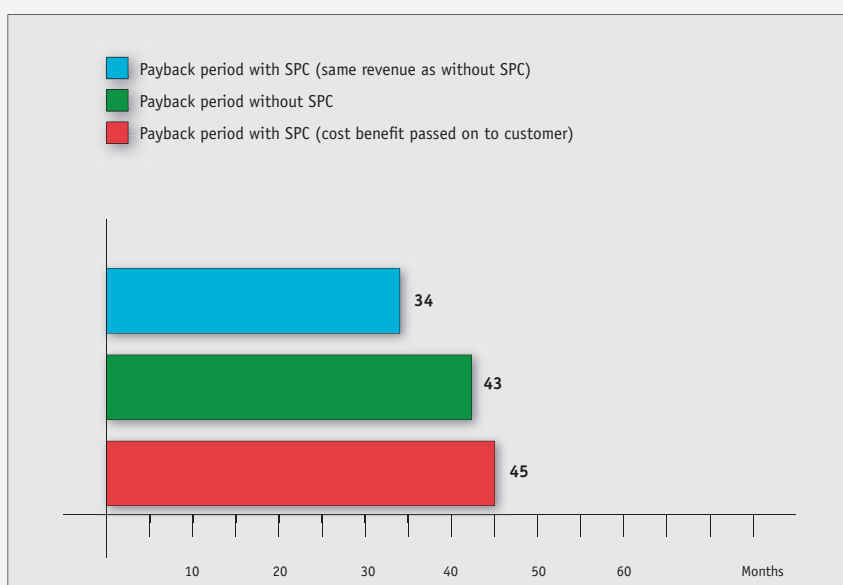


The payback period is influenced decisively by the planned revenue.

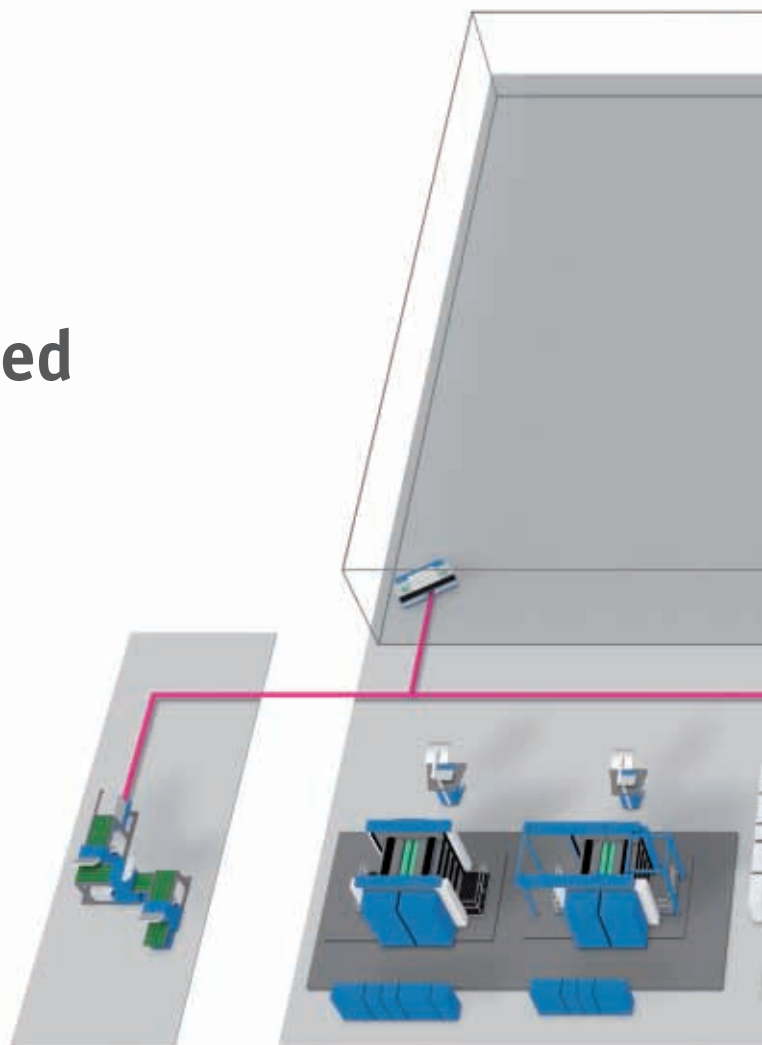
If it is assumed that the owner of the Rapida 106 does not pass on the benefits of faster makeready to the customers, **then this results in a payback period for the press as a whole of**

**34 months.**

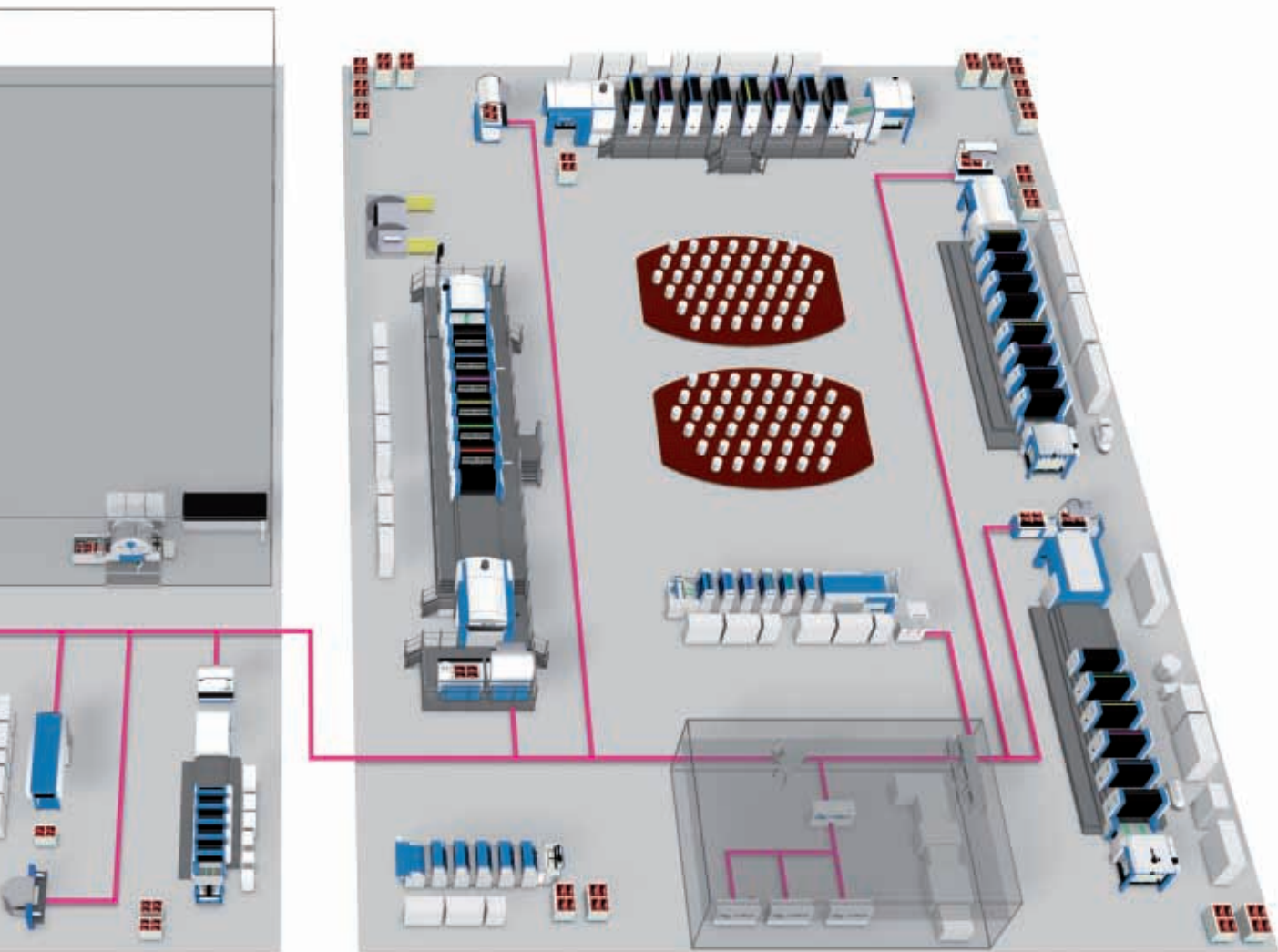
If the press owner passes on the cost benefits, then the payback period is practically the same as for a press without SPC.



**Applying the basic assumptions defined at the beginning for the profitability calculation, the payback period for the automation module DriveTronic SPC is shown to amount to approximately ten months.**



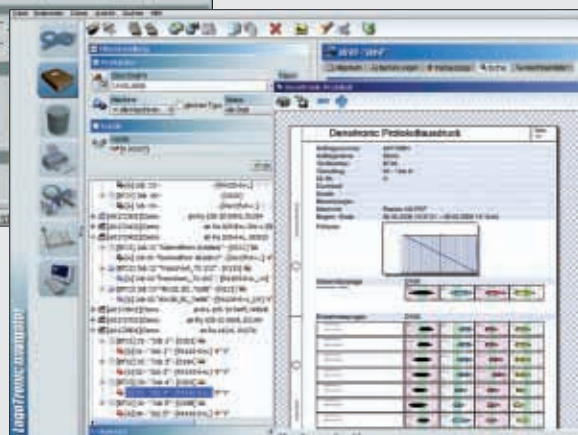
The target is to reduce operating costs while at the same time improving productivity, which in turn leads to enhanced profitability and competitiveness. In addition, KBA Complete offers concepts for new products and new business models in the print industry, together with the requested support during implementation. A particular focus is placed on future-oriented technologies and approaches, such as web-to-print, e-business or RFID, as well as on solutions to develop business with climate-neutral printing.



JDF-integrated networking on the KBA stand at drupa 2008



KBA LogoTronic professional



# Breaking the speed limit...

## Components for faster makeready

### ● Job changeover program

All preselected makeready processes run fully automatically upon activation

### ● Recalling of saved presetting data

### ● Multiple-circuit washing system

Multiple-circuit washing system for different solvents

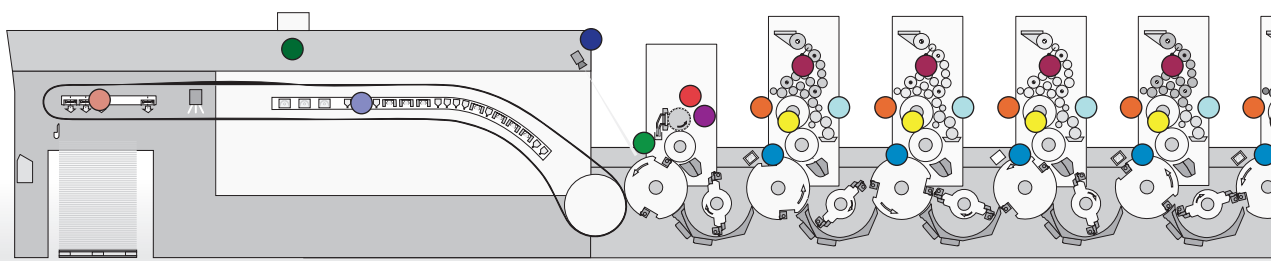
### ● Coating supply system

Fully automatic cleaning system for the coater

### ● Automated coating forme change

### ● Suction ring positioning (ASP)

Remote-controlled positioning of the suction rings on the delivery sheet brake



### ● DensiTronic professional

Combined density and colour measuring system with dynamic ink zone regulation

### ● DensiTronic PDF

- Scanning of the printed sheet and comparison with the PDF from prepress
- All functions of DensiTronic professional

### ● LogoTronic professional

- Management system for KBA presses (PressWatch, SpeedWatch)
- JDF/JMF interface for an unbroken workflow
- Central colour database
- Links to report data from DensiTronic, DensiTronic PDF, QualiTronic
- Pallet dockets

### ● Automatic Plate Punch (APP)

Optical plate positioning, with punching according to the position of the image

### ● Delivery

- Extended delivery 1,400, 2,400 or 3,800 mm
- Importing of presetting data
- Setting values can be saved
- Air-cushion sheet guiding

### ● VariDry high-performance dryers

- IR and hot-air dryers
- 3 UV modules

### ● QualiTronic

- Inline inspection system
- Quality control for each individual sheet
- Inspection on the last impression cylinders before and after perfecting (optional)

### ● QualiTronic professional

100% inspection with inline density measurement and control, also for installation both before and after a perfecting unit

### ● Coating tower

- Chamber blade system with anilox roller
- All register settings as console functions (axial/radial/diagonal)

### ● Coating supply system

- Fast makeready through automatic cleaning of all components which come into contact with the coating
- No need for further manual cleaning

○ Ink run-up program

● Optimised press start

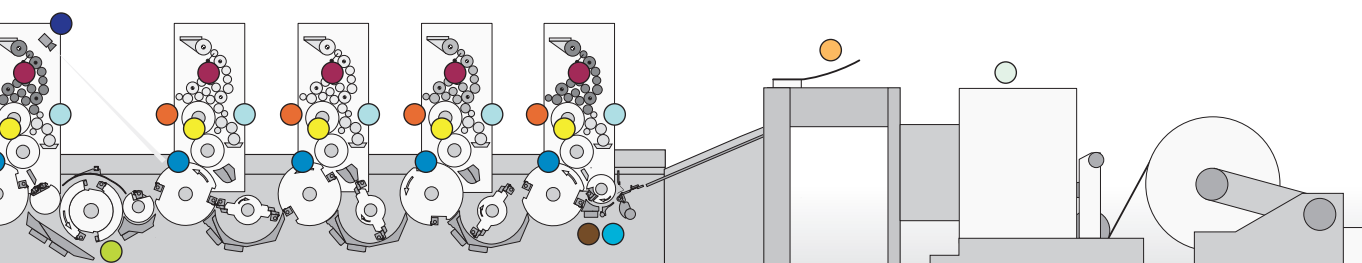
Press runs up to production speed with two-stage impression-on

● ErgoTronic ACR

System component for automatic determination of lateral, circumferential and diagonal register corrections

○ RS 105

Reel-to-sheet feeder with console integration



● Perfecting

- Fully automatic conversion with console integration

● Single-train inking unit

- Fast-reacting
- Disengaged when not in use
- Oscillation timing adjustment with console integration
- Low maintenance

○ Dampening unit

- With function to remove hickeys
- Importing of presetting values

● FAPC

Fully automatic plate changing system (without SPC)

● DriveTronic Feeder

Four independent, electronically controlled drives, providing for ultimate preset capabilities

● DriveTronic Infeed

Remote motorised adjustment of the feed line and individual front lays

● DriveTronic SIS

Sidelay-free lateral alignment

● DriveTronic SPC

Simultaneous plate changing in all printing units, with electronic adjustment of the start of print, electronically controlled circumferential register and parallel washing processes

○ DriveTronic Plate Ident

Presetting of registration for all plate cylinders before start of printing, checking of the correct assignment of plates to the individual printing units by way of a data matrix code