

KOENIG & BAUER

Waterless Cortina: Cutting-edge green technology for newspapers and commercials



we're on it.



Newspapers and semi-commercials printed in excellent quality

With the highly innovative Cortina press, Koenig & Bauer has raised the production of colour newspapers and semi-commercials to a new level of quality. Day after day, over 20 Cortina users in Europe and the Middle East demonstrate an unprecedented scale of excellence with a broad diversity of print products – and at the same time exceptional format and substrate variability, cost efficiency and environmental awareness. Practice-oriented automation modules represent key benchmarks for modern offset printing.

More quality

The unique design of the printing unit – without ink keys and without dampening units – simplifies the work of the operator, minimises wastage and guarantees superb quality in full-colour production, delivering brilliant, dot-sharp results at screen rulings up to 175 lpi or with FM screens. When equipped with heatset

capabilities, the Cortina can print coldset newspapers and heatset semi-commercials with one and the same ink, eliminating the time-consuming ink changes otherwise necessary in conventional wet offset. This reduces makeready times and significantly enhances ease of operation. It is even possible to print hybrid coldset/heatset products on different types of stock



The Cortina redefines the quality benchmarks for standardised print production

and to run them via a common former. In this and in many other ways, the Cortina supports the necessary standardisation of processes in the newspaper industry today. It promises profitable production in predictable quality and addresses the continuing trend towards automated print operations.

More efficiency

The maximum height of max. 4.5 metres (14 ft) for the printing units means that a four-high tower press can already be installed in standard industrial buildings, reducing the investment outlay for construction and climate control. Compact press lines with rated outputs up to 90,000 copies per hour are available in double width versions with a single (4/1) or double circumference (4/2), as well as in a triple-width version (6/2). The waterless Cortina embodies an advanced level of automation. Its practice-proven features include motorised opening of the tower for maintenance access (STEPIN), lifts on both sides of the tower, dedicated drives for the individual cylinders, fully automatic PlateTronic plate changers, RollerTronic automated roller locks, and the unique NipTronic bearing units for optimum setting of the printing pressure.

The Cortina creates ideal conditions for labour-saving, ergonomic operation with reduced cleaning and maintenance requirements. The

inking unit concept contributes to a cleaner work environment by eliminating the ink mist associated with a conventional offset process. Calculations performed at numerous newspaper printing plants confirm that production costs can be lowered significantly with the Cortina.

More sustainability

Minimal print waste, the elimination of dampening solutions, additives and gear oil, essentially chemistry-free platemaking, reduced carbon emissions, lower solvent and cleaner consumption, and virtually VOC-free operation support ecologically aware production and already anticipate the foreseeable tightening of environmental regulations and legislation.

More potential

As an innovation-oriented press manufacturer, Koenig & Bauer developed the Cortina to strengthen the position of classic newspaper printers in their present-day competition with electronic media by reducing production costs, standardising production processes and enhancing print quality. The potential of the Cortina can be exploited to generate additional print business and thereby to maximise press utilisation. Many Cortina users are already making the most of these possibilities for successful differentiation in the marketplace.

Minimum waste

No disturbance from water

The Cortina successfully introduced the waterless offset process into newspaper printing. Elimination of the dampening units, in conjunction with keyless inking, yields considerable potential for greater cost efficiency while maintaining a uniformly high print quality. The products of Cortina users regularly gain top competition rankings from the IFRA Color Quality Club.

Reduced costs and less stress

Thanks to the absence of water, the elimination of all associated ink and dampening adjustments during production, and the uniform ink transfer of the keyless NEWSFLOW inking unit, irrespective of the image to be printed, the waste incurred at start-up and after fast edition changes in full-colour production is reduced.

Less waste translates directly into significantly reduced paper consumption, which after all can account for as much as 80% of the total expenditure on materials in newspaper printing. Waterless offset with the Cortina means no more problems with ink/water balance and web tension, no more fan-out and misregistration in full-colour production, no ink misting and no need for continual adjustments to compensate warming of the press. In other words: Stable and stress-free production.

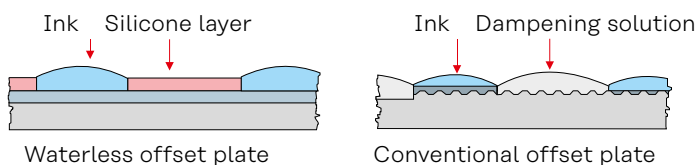
Mature process

That waterless newspaper printing with the Cortina has become daily practice is due in no small way to the committed development efforts of a broad alliance of leading consumables suppliers. Essential prerequisites for the waterless process, such as the flow pro-

perties of the waterless inks in the ducts and keyless inking units, their printability on standard types of newsprint, later deinking of the products, toning-free ink application and stable ink density over the full range of running speeds, are met and conform with all relevant norms. There is furthermore less print-through than in wet offset when printing with high area coverage. The waterless plates are good for at least 120,000 to 150,000 cylinder revolutions, and a service life in excess of 200,000 cylinder revolutions can be achieved under ideal conditions. The maximum intervals for blanket washing depend on the particular inks and papers used, but are in all cases conducive to efficient production.

Highlights of waterless offset

- Paper savings through minimised waste
- Better and more constant print quality (less dot gain, sharp detail, brilliant colour)
- 175 lpi and FM screens on standard newsprint
- No problems with web tension
- No dampening units, no water additives
- No problems with ink/water balance
- No fan-out with wide webs
- Simpler, labour-saving operation
- Fast switching from coldset newspapers to heatset magazines (in combination with drying facilities)
- Improved ecology





Just one main operating level, with convenient lifts to the upper printing units: Press crews appreciate the more pleasant working conditions on the Cortina



Whether coldset, heatset or a combination of both – the Cortina delivers excellent quality without the need to change inks

Convincing results in coldset and heatset

The NEWSFLOW inking unit of the Cortina has been engineered specifically for the demands of waterless web offset printing at high speeds.

The Cortina is the first coldset newspaper press in the world which is able to print in reproducible quality with 175 lpi and even FM screens as standard, though the screen rulings typical in conventional newspaper printing are naturally also possible. Brilliant colour, reduced dot gain, sharp detail, ghosting-free images and perfect legibility down to the smallest reverse type are among the hallmarks of a waterless offset process.

Ink is supplied to the plates continuously and independently of the image to be printed via a chambered doctor blade, an anilox roller and two ink forme rollers. Two oscillating distributor rollers and two further inking rollers ensure an optimally smooth ink film. The problem of emulsification, which is all too common in wet offset with a keyless inking unit, cannot occur on the Cortina.

Greater ease of operation

As proper inking of the plate is already attained after just a few revolutions, start-up waste is reduced to an absolute minimum. As there are no ink keys or dampening units, the operator is free to concentrate on any necessary register adjustments. Handling is thus much simpler, there are fewer press settings to deal with, and fluctuations in ink application are avoided. Reducing the number of process variables supports a more standardised approach to newspaper production and promotes faithful reproduction of the quality parameters defined in pre-press.

Temperature control for optimum print

The anilox rollers of the Cortina guarantee precise ink metering over a long lifetime of several hundred million cylinder revolutions.

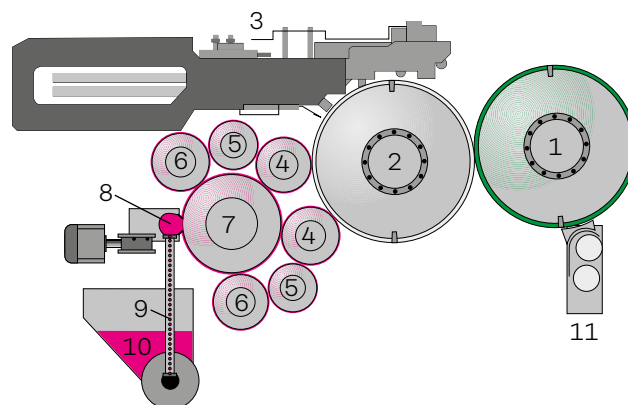
With each cylinder revolution, a fresh film of ink is offered to the plate. The ink not required for the particular image is wiped off by the doctor blade and returned to the ink circulation.

To cater for the specific requirements of the waterless offset process, the plate cylinders and anilox rollers are temperature-controlled. The entire temperature control system is integrated into the printing unit switch cabinets on the operating side of the press. That saves considerable space. Variation of the cylinder and roller temperature from the press console is a means to influence the ink density across

the width of the cylinder. In the interest of a standardised production process, however, Koenig & Bauer recommends use of the factory-defined basic settings. By way of characteristic curves stored in the press software, the surface temperatures of the anilox rollers and plate cylinders are regulated automatically in accordance with the momentary production speed. This ensures a constant, toning-free ink application (solid densities conformant with the IFRA standard) at all running speeds.

Coldset, heatset or both – without ink changes

One unique feature of the Cortina is its ability to print both coldset and heatset products – and even combinations of the two – with no fan-out and with no need to change the ink. This flexibility to print on different types of stock, and thus to realise high-quality advertising in new forms and with a brighter, web-oriented design, enables users to target also younger readers with a diversity of magazine-like newspapers and supplements.



Cortina printing unit with keyless NEWSFLOW inking unit and PlateTronic fully automatic plate changer

- 1 Blanket cylinder
- 2 Plate cylinder (temperature-controlled)
- 3 Fully automatic plate changer (option)
- 4 Ink forme rollers (rubber-coated)
- 5 Oscillating distributor rollers (Rilsan-coated)
- 6 Inking rollers (rubber-coated)
- 7 Anilox roller (ceramic, temperature-controlled)
- 8 Chambered doctor blade
- 9 Feed pipe
- 10 Ink duct with integrated ink pump
- 11 Blanket washing system



Fast makeready Practical automation

The Cortina is available as a double-width press with either a single or double plate cylinder circumference, as well as in a triple-width 6/2 version. The maximum rated production output is 90,000 copies per hour in straight production.



Innovations for ease of operation

Practice-oriented automation features, such as automatically adjustable RollerTronic roller locks, fully automatic plate changing with PlateTronic or the revolutionary NipTronic bearing units, serve to reduce makeready times, production waste and the costs of labour and maintenance, while at the same time maximising ease of operation. Patras is a further option to extend automation to paper logistics.

Automated roller locks allow the contact pressure of the inking rollers to be set from the console. This eliminates a lot of time-consuming maintenance work in the printing units. In similar fashion, the NipTronic bearing units enable simple setting of an optimum printing pressure. This can be a huge advantage where production alternates between very different types of stock.

The fully automatic PlateTronic plate changing system is able to change all the plates of a complete full-colour press section in around three minutes, with no need for direct operator intervention at the printing unit. This facilitates extremely fast makeready for multiple split editions. Where appropriate, it is even possible to select individual pages of a product and to trigger automatic changing of just these

specified plates from the console. The plates for the next edition can already be placed at the relevant printing units ready for changing during the current run. Once production resumes after changing, the used plates can be collected manually for disposal.

The compact, integrated blanket washing system CleanTronic underlines the exceptional automation and the environmental credentials of the Cortina.

Furthermore, the entire paper flow from delivery of the reels to stub disposal can be automated with an integrated logistics solution from Koenig & Bauer: To this end, the reel handling system Patras can be networked with the reel store, the stripping station, splice preparation and the reelstands.

... and simpler maintenance

To facilitate cleaning and maintenance tasks, for example blanket or washing cloth changes, the four-high tower of the Cortina glides apart in the centre, i.e. between the blanket cylinders (STEPIN). Ready accessibility is thus guaranteed, despite the compact design. Once the work is completed, the two halves of the tower are locked back together and aligned precisely by way of special guides.

An integrated lift provides for convenient access to the upper printing units, for example to load the plates for a pending plate change



Flexible possibilities

Compact four-high or eight-high tower

The unique compact design of the Cortina, whose four-high towers require only one main operating level, opens up many new possibilities in terms of investment planning, edition splitting and press handling.

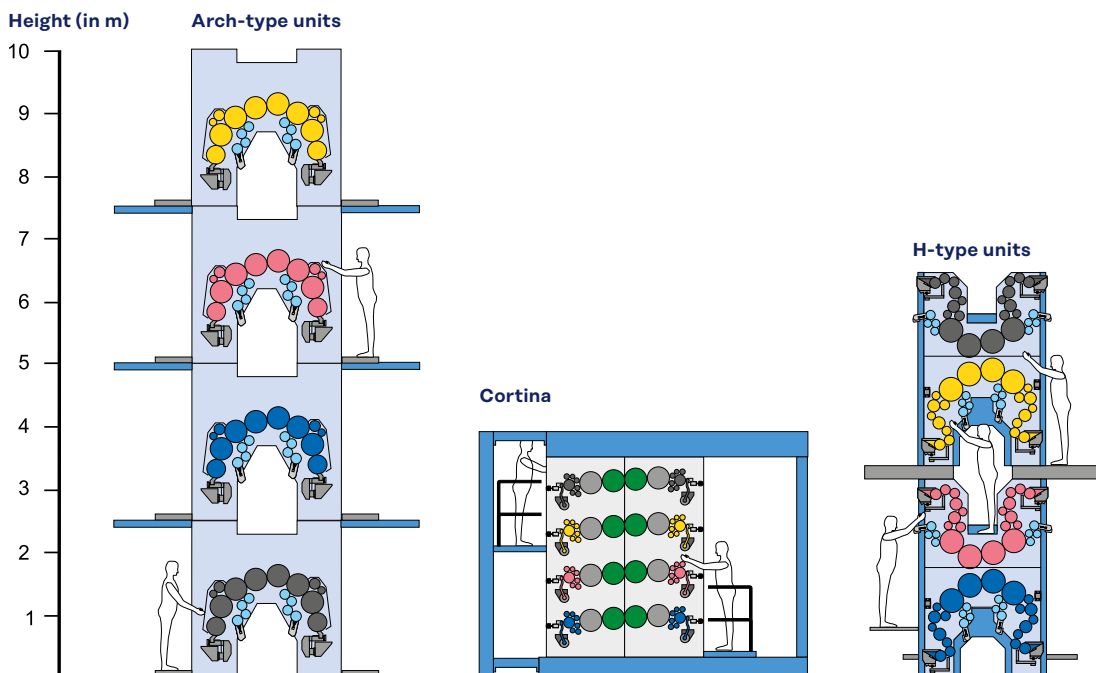
Reduced investment outlay

With the Cortina, the overall investment outlay for the press and associated infrastructure can be reduced substantially. The low height, for example, means that many newspaper printers will be able to realise their modernisation plans and capacity upgrades in the existing press hall or a standard industrial building. In addition to the construction costs, general overheads for heating, climate control and maintenance, etc. will also be lower. The flexible modular concept of the Cortina permits optimum utilisation of the available space (as illustrated on page 12: Configurations).

Eight-high towers: a viable option

The compactness of the Cortina also permits two 4/4 towers to be stacked into a single eight-high tower which is nevertheless barely 9.5 metres (31 ft) high. In this way, a press line can be made significantly shorter than a conventional four-high tower or satellite press – but all still within a comparable height. Corresponding press lines are in production in Switzerland. The capacity of an existing installation can be expanded dramatically by making better use of the vertical space in the hall, and replacement investments are also easier to realise without interrupting current operations.

Four-high tower variants for 4/4 production





Above: The four-high tower glides apart to enable optimum accessibility for maintenance work (STEPIN)

Cortina with eight-high tower (in the background)



Incomparable space-saver Tailored configurations

Taken size for size, the Cortina boasts much higher pagination and colour capabilities than a conventional tower press. The savings are greatest with the 6/2 version. Thanks to the modular concept, an endless diversity of configurations can be supplied to accommodate local circumstances and space constraints.



Left: Cortina press line with dryer for heatset production without ink changes at the Eco Print Center of media house De Persgroep in Belgium

minimum of space. The slitters ahead of the draw rollers are readily accessible and possess high-quality cutting heads with automatic depth adjustment – a feature currently unique in newspaper printing. The web is divided neatly into half-width or optionally into half- and quarter-width ribbons, and the scissor-style cut produces so little dust that there is no need for dust extraction prior to turning. Photo-cells monitor the individual ribbons, which are guided to the former infeed over air-flushed turner bars. The draw rollers, the ribbon-gathering rollers and the RTF can all be adjusted remotely. The turner bars are set from the press console.

The ability to turn and shift individual ribbons guarantees high production flexibility. The desired production variant for the next job can already be preset via the console. With double turner-bar decks, the signature structure of a newspaper can be adapted to changes in product layout quickly and without manual adjustment of the turner bars. The Cortina can be configured with a KF 3, KF 5 or KF 7 folder, depending on individual output requirements and page counts. A range of optional modules for perforation, gluing, stitching, a quarterfold and 'Zip'n'Buy' capabilities lend further boosts to production flexibility.

Superstructure and folder

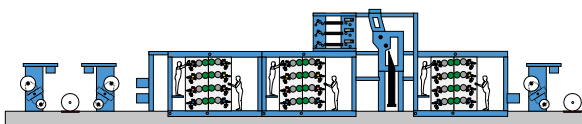
The compact but nevertheless ergonomic turner bar concept of the Cortina brings numerous innovative solutions for short ribbon paths, convenient handling and fast production changes. The absence of ink keys and dampening units is a major advantage when working with frequently changing web widths. A chain web-up system is a standard feature.

The novel design of the turner-bar deck allows the most varied web leads to be realised in a

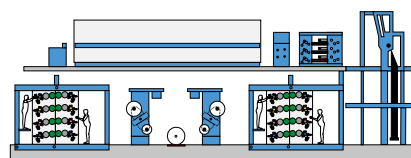
Tailored configurations

The Cortina can be configured in numerous different ways, whether as a floor-mounted press or with underfloor reelstands. Tailored solutions can be supplied to fit all types of buildings, whether long but low, or short and high.

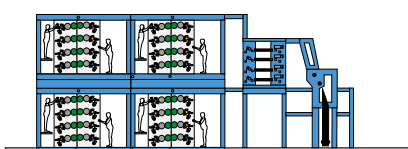
Examples of Cortina configuration options



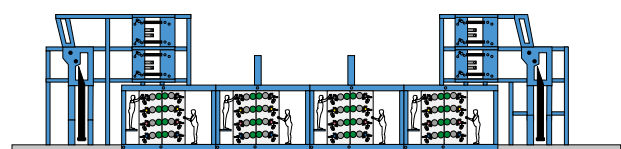
48-page floor-mounted Cortina 4/2



32-page Cortina 4/2 with dryer



64-page Cortina 4/2 with eight-high towers



2 x 48-page Cortina 6/2 with underfloor reelstands

Maximum ease of operation

Ergonomic and stress-free

The printing units of the Cortina possess dedicated AC drives for the individual cylinders, as the basis for gearless and oil-free operation. Shaftless drive technology is also standard for all other subassemblies of the press. The modular automation package with distributed control at subassembly level ensures maximum flexibility to accommodate customer-specific wishes, and the modern ErgoTronic console provides a platform for tailored press presetting, process control and production monitoring with the PressNet workflow system.

Shaftless drive technology

The printing units incorporate dedicated drives for each cylinder and each inking unit (24 drives per four-high tower). This concept ensures convenient handling for both makeready and maintenance tasks. The gearless drive arrangement also eliminates the need for oil lubrication.

Less stress for press crews

Cortina operators have no manual roller settings to make, are not required to crawl around in dirty tunnels, and are not constantly climbing up and down stairs. Plate, blanket and washing cloth changes are performed in a comfortable

standing position, avoiding strain on the back. Sweaty and ink-smearing operators are the exception rather than the rule on the Cortina.

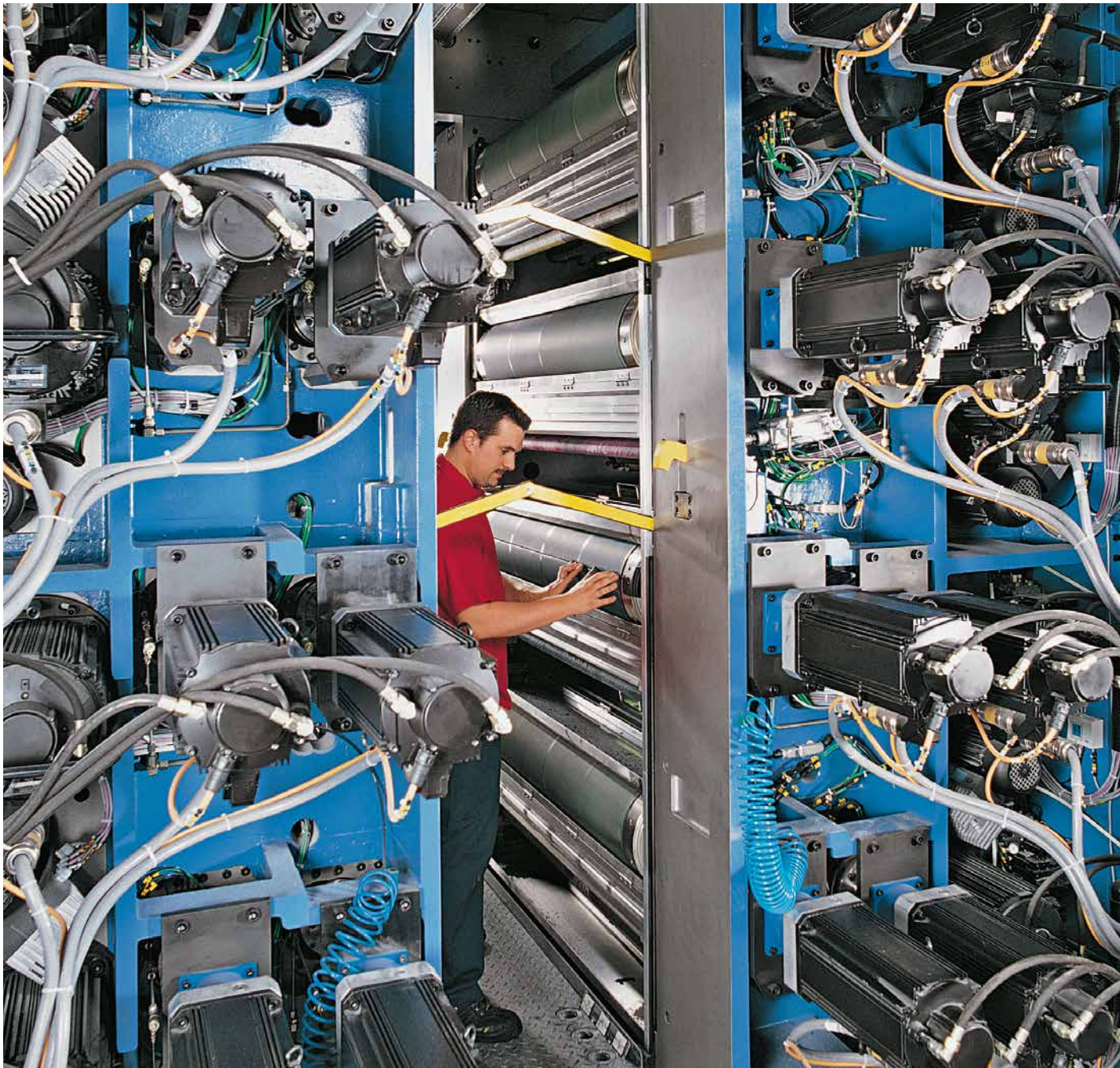
ErgoTronic console: Functional and ergonomic

The press console with its 19-inch touchscreen monitor can be raised or lowered electrically to match the height of different operators. Press commands such as "Faster" or "Slower" are entered via intuitive key panels. The visualisation software supports both copy- and press-oriented operation on the basis of clearly arranged, function- and subassembly-specific data screens.

Top right: An open Cortina tower showing the gearless and oil-free drive with dedicated motors for each cylinder and each inking unit

Bottom right: Fully automatic plate changers reduce the downtime for edition changes to just a few minutes

Bottom left: Modern console technology is a standard feature of all Cortinas





PressNet Fast presetting

Digital networking and the integration of individual process steps are today more important for efficient newspaper production than ever before. There is considerable savings potential in automated production planning, in press presetting for coming jobs and in automated start-up and run-down of the press line. With PressNet, Koenig & Bauer offers tailored workflow solutions for the Cortina. Through the optimisation of production sequences, the press is in a position to deliver maximum performance at all times.

Alongside production planning with EasyPlan and press presetting with EasySet, the PressNet suite includes the modules EasyStart and EasyClean-up for automated press start-up and run-down, and EasyReport for automatic reporting and documentation.

EasyPlan

Careful planning is a decisive factor in sustainable success. That also stands true for newspaper production with EasyPlan. The operator can choose the desired option from a catalogue of defined production variants, though individual inputs are also possible.

EasySet

Various press parameters need to be preset exactly to enable the fast completion of makeready, to minimise waste and to guarantee a high level of stability and quality in subsequent production. EasySet was developed to permit fast and simple presetting of the whole press line. The multi-stage presetting system stores preset data for register, web tension, temperature control and the process-specific acceleration curves. These values can be recalled for all similar production jobs, as an immediate contribution to enhanced production efficiency.

EasyStart

“One-button” press start-up and automatic acceleration to production speed is child’s play with EasyStart. Acceleration curves with specific dwell times at certain speeds can be defined by the operator in accordance with production requirements.

EasyClean-up

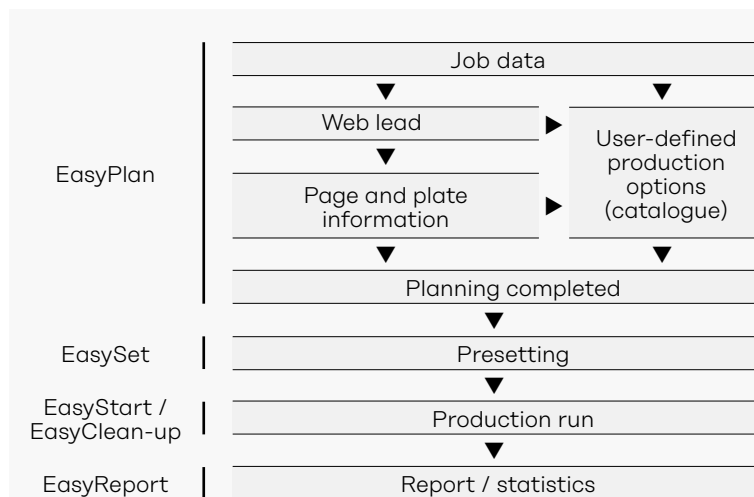
Automatic, pushbutton run-down similarly has also been in daily practice for a long time on presses from Koenig & Bauer. The function EasyClean-up triggers predefined sequences to run the web free, to wash the inking units and blankets and to remove the plates at the end of production. This not only simplifies the operator’s work, but also leaves more time to attend to other tasks.

EasyReport

Another important factor for enhanced productivity and cost reductions is the timely detection and pertinent analysis of occurring

errors. This is the domain of EasyReport. A long-term log of all relevant messages can be exported and filtered to support error analysis and minimisation. An additional feature is the integrated reporting function, which enables the comprehensive documentation of all jobs printed, together with detailed production reports.

PressNet: Job set-up in a few simple steps



Uncomplicated production planning and press presetting using the PressNet automation tools



Green technology

Caring for the environment

Given the current climate debate, environmental issues are today playing an ever greater role also in newspaper production. Koenig & Bauer is the industry pioneer when it comes to the development of new environment-friendly technologies for sheetfed and web offset printing. That applies equally to ecological newspaper production with the Cortina.

The waterless printing process, in combination with keyless inking units, minimises paper waste and in this way helps to conserve valuable raw materials. The elimination of dampening solutions, additives, ink mist, drive oil in the printing units and virtually all platemaking chemistry further reduces the environmental impact, and solvent consumption is lower thanks to automatic blanket washing. New consumables support the green printing concept and permit VOC-free operation. At Freiburger Druck, for example, annual carbon emissions have been cut by 3,500 tonnes since installation of the Cortina. It has been calculated that 730,000 litres of water, 28,000 litres of additives, 15,000 litres of processor chemistry, 24,000 litres of

cleaning fluids and 210,000 cleaning rags are saved every year. In addition, the volume of paper waste has fallen by almost 1,300 tonnes.

Despite the exact temperature control which is imperative for waterless printing, total energy consumption for production on the Cortina is roughly the same as for a conventional offset press. The higher consumption of the press itself is more than compensated by savings in the pressroom environment and through systematic heat recovery within the framework of a company-wide climate control plan.

The Cortina unites ecology, economy and quality as pillars of a future-oriented overall concept.

Cortina

At a glance

Technical highlights

Compact design:

- Four-high tower max. 4.5 m (14 ft) high
- Eight-high tower approx. 9.5 m (31 ft 2 in) high

Printing units:

- Dedicated drives for each cylinder and inking unit
- No oil in the press
- PlateTronic semi-/fully automatic plate changing (option)
- RollerTronic automatic roller locks
- Revolutionary NipTronic bearing units
- CleanTronic blanket washing system
- Keyless NEWSFLOW inking unit
- Waterless offset printing

Print quality:

- Up to 175 lpi screen ruling on newsprint, also FM screens
- Good semi-commercial quality in heatset production without ink changes
- Problem-free combination of coldset and heatset production

Technical data

Cortina 4/2

Max. production speed ^{*)} :	45,000 cyl.rph (90,000 cph in straight production)
Max. web width:	1,680 mm (66.14 in)
Cylinder circumference:	900 - 1,197 mm (35.43 - 47.12 in)

Cortina 4/1

Max. production speed ^{*)} :	86,000 cph
Max. web width:	1,680 mm (66.14 in)
Cylinder circumference:	470 - 598.5 mm (18.5 - 23.56 in)

Cortina 6/2

Max. production speed ^{*)} :	45,000 cyl.rph (90,000 cph in straight production)
Max. web width:	2,100 mm
Cylinder circumference:	900 - 1,197 mm (35.43 - 47.12 in)

Printing units:

Four-high/eight-high tower

Reelstands:

Pastomat C
Pastomat CL

Folders:

KF 3, KF 5 and KF 7

^{*)} depending on format and folder
Other formats upon request

