Rapida RDC 106 – High performance in die-cutting
Tailored die-cutting solutions for future-oriented in-house production

As a print provider, you must be able to promise greater performance and flexibility than ever before, because that is the only way to survive on an increasingly competitive market. Not only for the actual printing, but also with regard to finishing. You need industrial solutions which make your life easier. And that, in turn, calls for ideas and creativity. Also from us as your press manufacturer.

The rotary die-cutter Rapida RDC 106, developed on the basis of our proven Rapida medium-format press, incorporates the very latest die-cutting technology for a sheer boundless scope of applications. Whether folding cartons, elegant presentation folders or inmould labels for paint buckets – with our Rapida RDC 106, all your die-cutting, embossing, creasing or perforating needs are handled in ultimate quality in a single production pass.
Rapida RDC 106 – Benefits at a glance

• High level of automation for fast job changes and makeready savings in case of repeat jobs thanks to the magnetic cylinder and a register pin system for tool-free forme changes
• Significantly enhanced efficiency for short runs thanks to extremely fast makeready compared to flat-bed die-cutters, paired with high production speeds for long runs

Technical features such as the DriveTronic feeder and infeed, Venturi sheet guiding, universal gripper systems and the AirTronic delivery lay the foundations for maximum substrate flexibility and die-cutting speeds up to 15,000 sheets per hour. Handling becomes intuitive thanks to the intelligent TouchTronic operating concept at the ErgoTronic control console. You can choose from a whole range of different configurations and equipment packages. Depending on your individual needs and requirements – for products in the highest quality, die-cut with absolute precision and care.

• Modern sheet transport concept of the Rapida sheetfed offset presses is the key to high substrate flexibility and a broad production spectrum
• Optimised design geared to reducing foundation loads for a positive effect on die-cutting quality and significantly quieter operation
• Precise adjustment of the die-cutting pressure in the finest possible steps
• Simple handling of the die-cutting formes and minimum storage space requirements
• Intuitive operating concept of the Rapida platform permits flexible personnel assignment
• Integration into a company workflow (production data acquisition)
• “365 / 7 / 24” service hotline and remote maintenance
A rotary die-cutter can only ever be as good as its feeder. After all, precise sheet separation is a basic prerequisite for smooth production. Koenig & Bauer is here able to offer you the best solution on the market: DriveTronic dedicated drive technology for the feeder and infeed.
The shaftless DriveTronic feeder adapts to whatever substrate you use. And the sidelay-free infeed DriveTronic SIS then aligns every single sheet calmly and effortlessly. Without the slightest risk of setting or pulling errors.

**DriveTronic feeder**
- Feeder motions controlled via 4 servo motors
- Continuous, stepless pile lifting with automatic speed compensation (paper / board)
- Automatic format setting
- Automatic pile side edge alignment
- Front-edge pile height sensing with automatic compensation of the feeder head height
- Skew-sheet correction at the feeder head during production
- Antistatic loosening and separating air

**Suction-belt feed table**
- Suction-belt feed table with stainless, antistatic structured surface, a single feed belt and multi-chamber vacuum system
- Electronically controlled sheet deceleration to ensure optimum sheet arrival speed at the front lays

**Infeed**
- Swing infeed accelerates the sheet smoothly for transfer to the feed drum
- Motorised remote adjustment with DriveTronic infeed for front lays, feed line and front lay cover height
- Photoelectric infeed sensors with motorised setting from the control console or infeed display
- Touchscreen display with direct function keys for reliable and intuitive operation

**DriveTronic SIS (Sensoric Infeed System)**
- Patented KBA sheet infeed system
- Electronically controlled lateral sheet alignment
- Integration into automatic format setting eliminates all need for operator intervention
- Gentle sheet positioning with the highest possible accuracy
- Patented Venturi system before the feed line for smooth sheet infeed
- Pneumatic drive elements for precise positioning of the sheet, even at maximum speed
- Pile side edge alignment via the SIS sensor

**Sheet monitoring**
- Ultrasonic double-sheet detector, also for inhomogeneous materials
- Multiple-sheet detector
- Optical skew-sheet sensors
- Optical front lay sensors with electropneumatic overshoot blocking

**Non-stop operation at the feeder**
- Manual non-stop system with individual rods for uninterrupted production during pile changes
- Fully automatic non-stop system with sensor-monitored rake, suitable for pile logistics integration
- Sensor monitoring for pile transport and pile reunion
- Pile insertion possible from all three sides
Rapida RDC 106

Rapida performance in die-cutting – the game changer

The basic design of the process unit is very similar to that of a Rapida 106 printing unit. On our rotary die-cutter, too, double-size cylinders and transfer drums provide for reliable sheet transport through to the delivery. The magnetic die-cutting cylinder is the heart of the process unit.

This system permits precise, tool-free mounting of an endless variety of dies to suit every conceivable application. After embossing, creasing and die-cutting, the cutting waste is removed cleanly at the stripping station for disposal. The Rapida RDC 106 can be configured with up to four process units – for optimum tailoring to your individual needs.

Process unit
- Double-size back cylinder: Mounting of protector jackets as protection for the cylinder surface and to provide the counter-die for creasing/embossing
- High-precision magnetic cylinder running in play-free bearings for mounting of the die-cutting forme
- Cast frame for high torsional rigidity and stability
- Simple adjustment of the lateral and circumferential register via the operator panel (touchscreen)

Magnetic cylinder
- Precision-ground magnetic cylinder with permanent magnets and register pin system for fast and exact forme positioning without the use of tools
- Magnetic cylinder with high holding force for mounting of
  - complete formes with register punching
  - creasing and embossing plates
  - individual die segments
  - formes of any size within the format range
- Laser-based scanning for automatic presetting of the forme thickness eliminates time-consuming fine adjustment steps

Process unit: Creasing/embossing
- Absolutely exact cylinder positioning in 1 μm steps, separately for each side, provides for ultimate accuracy and perfect results
- Automatic plate positioning for fast and simple job changes
- Pneumatic pressure on/off switching
- Magnetic back cylinder

Process unit: Die-cutting
- Absolutely exact cylinder positioning in 1 μm steps, separately for each side, provides for ultimate accuracy and perfect results
- Protector jackets with quick-action clamping system for fast and user-friendly replacement
- Temperature control within the unit to ensure constant die-cutting pressure
Process unit: Stripping
- Die-cutting and partial or complete removal of the cutting waste in one machine pass
- Plotter-drawn stripping forms
- Forme and stripping cylinder function according to the die/counter-die principle; 2 female dies on the vacuum cylinder and 1 male die on the forme cylinder
- Quick-action clamping system and automatic cylinder positioning for fast, tool-free forme changes
- Double-size stripping cylinder with vacuum and blower air for stable mounting and reliable separation of the die-cut blanks and waste
- Removal of the die-cutting waste by way of a conveyor system or by extraction

Automatic forme changing
- Tool-free die-cutting forme change requires approx. 2 minutes per unit
- Use of CNC-manufactured dies for absolute accuracy and minimum tolerances even with the smallest radii and contours
- Laser sensor scans the die-cutting forme to enable automatic presetting of the forme thickness
- All relevant air and format settings can be saved at the ErgoTronic operator panel and recalled for repeat jobs

Sheet guiding
- Reliable sheet transport over the whole substrate range from 0.03 to 0.6mm thickness
- Universal gripper system for reliable sheet transport
- Gentle, air-cushioned sheet guiding with blower modules and Venturi guide plates
- Air settings can be saved at the operator panel and recalled for repeat jobs
AirTronic delivery with full preset capabilities

The AirTronic delivery of the Rapida RDC 106 has been designed specifically for high-speed production on the most varied substrates. Even sensitive substrates can thus be handled with ease at full production speed.
New, aerodynamic gripper carriages optimise the air flows and avoid turbulences. At the same time, a sophisticated Venturi sheet guiding system provides for a stable supporting air cushion and smooth sheet travel. The dynamic sheet brake ensures that every sheet is dropped carefully and precisely onto the delivery pile – even when running with thin lightweight substrates. All digital settings for the AirTronic delivery can be preset and saved for later recall.

**Sheet travel**
- High-level delivery for smooth sheet transport
- Touchscreen display with direct function keys for reliable and intuitive operation
- Venturi sheet guiding system, with all air settings made and saved at the console
- Shadow-free aerodynamic gripper systems to accommodate radiation dryers
- Speed-compensated gripper opening cam for a broad range of substrates
- Fan modules and blower bars with directional air flow promote optimum pile formation; with remote adjustment
- Standard-compliant light barriers to guard the hazardous area

**Sheet brake**
- Dynamic sheet brake with speed-compensated suction belts for smooth and precise pile formation
- Automatic format adjustment
- Deactivation of individual suction modules from the console
- Substrate-dependent control of suction power
- “Easy-click” replacement of suction modules

**Non-stop operation at the delivery**
- Non-stop pile change possible at full production speed
- Lowerable non-stop roller rack extended automatically above the main pile
- Sensor monitoring for lifting/lowering of main and auxiliary piles
When printing on heavier substrates, pile changes are especially frequent. That means: Stop the machine, switch the full and empty pallets, restart the machine – just think of how much valuable production time is lost. Non-stop pile-changing facilities are the obvious solution.

Non-stop systems at the feeder and delivery allow for uninterrupted production and smooth pile changes. Naturally at full production speed. Still not enough? Logistics installations tailored to your individual production environment are child’s play with PileTronic.

**Non-stop operation at the feeder**
- Non-stop system with individual rods for uninterrupted production during pile changes
- Fully automatic non-stop system with sensor-monitored rake for pile transport and pile reunion
- Pile insertion and removal possible from all three sides

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**PileTronic**
- Networking of press control, non-stop pile changing systems and pallet supply for efficient print production
- Proven logistics modules
- Elaboration of customer-specific solutions
- Pallet-free paper supply possible
Rapida RDC 106
ErgoTronic console technology: New and simple operating philosophy

Thanks to comprehensive console and preset capabilities, alongside an ergonomically arranged and intuitive user interface, work on the Rapida RDC 106 is child’s play. All operating functions are clearly structured for process-oriented access via the modern touchscreen monitor.

Additional touchpanels with direct function keys help to maximise operator convenience at the feeder and delivery – directly on the rotary die-cutter itself. The Rapida RDC 106 also possesses tailored workflow components for integration into company-wide production control and management systems.

ErgoTronic
• Wallscreen for visualisation of all machine settings
• Motorised console height adjustment
• USB port for fast communication of job data
• Possibility of integration with an MIS for unbroken production data acquisition
• Uninterruptible power supply to enable controlled machine shutdown in case of power supply failure
• Integrated remote maintenance module with Internet link for remote maintenance and software updates

Control console functions (dependent on incorporated options)
• Job changeover program JobAccess for automatic job presetting
• Job-specific saving of all relevant machine parameters for repeat jobs
• Control for all peripheral equipment
• Maintenance indicator and print-outs of maintenance lists
• Unbroken production data acquisition in conjunction with LogoTronic Professional
• Creation and printing of pile dockets
• Preview images

TouchTronic operating functions
• Touchscreen for intuitive access to all machine functions
• All operating functions accessible with no more than two clicks
• Job list with preview images and functions for job order optimisation
• Motorised adjustment of lateral, circumferential and diagonal register for fast and simple makeready
• Absolutely exact cylinder positioning in 1 μm steps, separately for each side, provides for ultimate accuracy and perfect results
• Temperature control in the die-cutting unit

LogoTronic Professional
• Comprehensive management system
• CIP3/CIP4 interface to prepress
• JDF/JMF or XML interface to an MIS
• Order management
• Machine presetting
• PressWatch for graphic representation of the overall production process
• SpeedWatch for graphic representation of job progress

Rapida LiveApp/Production App
• Mobile console with machine status information
• Maintenance manager and PressCall
• Calculation and display of current energy consumption via an optional metering function
Superior through ultimate quality

Labels are something special, because they lend your products a truly unmistakeable appearance.
Despite their usually relatively compact format, they carry a whole host of important information on contents, price and sell-by date, as well as transport notes and hazard warnings. But labels are at the same time advertising media and contribute in no small way to purchase decisions at the point of sale. Demanding tasks and thus a challenge for the producer, because constant high quality from start to finish is an absolute must.

Alongside the widely used wet-adhesive process, more and more users are today choosing self-adhesive and inmould labels. Shorter runs, greater individuality and enhanced durability are typical reasons. Inmould labelling is presently all the rage for the finishing of injection-moulded plastic packaging. Ultra-thin films in thicknesses between 50 μm and 100 μm are printed in an offset process and subsequently die-cut. Technical and technological state of the art – and thus an ideal domain for innovative Koenig & Bauer printing and die-cutting technology!

The Rapida RDC 106 incorporates the latest die-cutting technology for label production. Packed with features developed not only for the processing of inmould films from 50 μm, but also for many other label materials, it provides for:

- significantly reduced makeready at job changeovers through automated processes, a register pin system and tool-free plate changes
- high production speeds with plastic films thanks to a dedicated antistatic package
- perfect die-cutting results through high-precision setting of the die-cutting pressure in 1 μm steps, separately for each side
- maximum substrate flexibility for both sheet and reel stocks with the reel-to-sheet feeder RS 106

The Rapida RDC 106 offers the latest die-cutting technology for label production:

<table>
<thead>
<tr>
<th>Processes</th>
<th>Advantages</th>
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<tbody>
<tr>
<td>Die-cutting / scoring</td>
<td>High production speeds for maximum output</td>
</tr>
<tr>
<td></td>
<td>Significantly enhanced efficiency also for short runs</td>
</tr>
<tr>
<td>Hole punching / waste removal</td>
<td>Maximum sheet format 780 × 1060 mm</td>
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<td>High-precision setting of the die-cutting pressure in 1 μm steps, separately for each side</td>
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Something special for every need

Commercial and packaging production are unbelievably diverse and covers an enormous range of print products.

From business stationery and forms, via flyers, catalogues, brochures and calendars, through to folding cartons, the possibilities are endless. The spectrum of materials used is equally broad, and jobs vary from typically short to medium runs in commercial production to long runs for folding cartons. Just-in-time production calls for fast and cost-effective solutions, but at the same time tolerates no compromises when it comes to quality. Neither in the print nor at the downstream finishing stages.

If you hope to hold your ground on the market, it is imperative to identify niches and to establish unique selling points. But what makes your print products unique? The print and finishing quality, of course. But original forms and special haptic or visual impressions also catch the eye, rouse interest and stick in the mind. Where others may be satisfied to apply high-quality coatings, you can add that something special to your customers' print products. Die-cutting, kiss-cutting, perforating, creasing, embossing – give free rein to your creativity.

With the Rapida RDC 106, we offer die-cutting technology geared to greater diversity and cost-aware finishing in the commercial and packaging sector. Our solutions stand out by way of:

• extremely fast makeready and thus ideal prerequisites for economical short-run production
• perfect die-cutting quality for substrate thicknesses from 0.03 to 0.6 mm
• even greater productivity with a performance package for die-cutting speeds up to 15,000 sheets per hour
• exceptional flexibility thanks to the diversity of configuration variants based on the unit design principle typical of Rapida offset presses

With a multitude of configuration variants and available options, the Rapida RDC 106 always holds an ideal solution in store – also for your needs.
The Rapida RDC 106 offers the latest die-cutting technology for commercial and folding carton production:

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<td></td>
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</tr>
<tr>
<td>Stripping</td>
<td>Reduced space requirement for storage of the die-cutting formes</td>
</tr>
<tr>
<td></td>
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</tr>
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<td></td>
<td>High substrate flexibility thanks to a modern sheet guiding concept</td>
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Koenig & Bauer offers a broad spectrum of services addressing all aspects of your rotary die-cutter, founded on the two main pillars “Service Select” and “Service Complete”.

“Service Select” refers to services which are directly connected with the technology and equipment of Rapida RDC 106. The prime objectives are to avoid downtimes and to maximise availability – as the basis for ultimate performance. Whether reactive service in an emergency case or preventive measures to avert the risk of damage: Swift processing of your calls holds top priority and is handled by our professional remote maintenance service. If it is necessary to replace any component, our efficient spare parts supply system ensures that deliveries reach you as quickly as possible. And to prevent such emergencies arising in the first place, we offer you a range of preventive maintenance inspections, as well as corresponding retrofits and upgrades for both hardware and software. “Service Select” provides a suitable solution for all your technical needs.

“Service Complete” comprises services which are designed to safeguard and improve your productivity. Analyses and optimisation measures ensure that your machine continues to die-cut with maximum performance and at maximum capacity. Performance capabilities are documented to enable you to intervene before a trend reversal actually takes effect. In addition, “Service Complete” supports the assessment and consequent improvement of your production processes, right through to planning of overall print company structures. Alongside machine and process optimisation, we offer opportunities for further training of your personnel by our experienced instructors. That, too, is a means to optimise machine operation. Wherever the potential lies, the “Service Complete” program is your versatile key to improvement, development and increased efficiency.
Perfectly matched for maximum performance

The sheer diversity of possible applications places enormous demands on the die-cutting formes. To assist you in your search for the ideal forme, we have tested the products of recognised manufacturers with regard to quality and performance in production on the Rapida RDC 106.
We offer recommendations for die-cutting formes for use on our rotary die-cutters within the framework of our consumables programme, because the ideal forme for a given application is not only a prerequisite for perfect die-cutting results, but also reduces makeready times and waste. Formes are manufactured from high-quality materials on modern CNC machines and guarantee the trouble-free die-cutting, kiss-cutting, perforating, creasing, embossing or stripping of substrates from 0.03 to 0.6 mm. The height and angles of the tools are matched precisely to the substrates to be used.

Whether die-cutting, creasing or embossing formes – our specialists have subjected a broad spectrum of tools to comprehensive performance tests. On this basis, and working together with our tooling partner, they could then be optimised for use on our high-performance rotary die-cutter Rapida RDC 106. Always with the objective of further perfection in terms of die-cutting quality and machine performance, so that your production runs stably and with maximum efficiency at all times.

If you are interested in more detailed information about die-cutting technologies and tools, please feel free to exploit the comprehensive know-how of our experienced application engineers and specialists. We and our longstanding partner would be glad to offer you our support and advice.
# Rapida RDC 106
## Technical data

### Sheet format

<table>
<thead>
<tr>
<th></th>
<th>Minimum cardboard</th>
<th>Minimum IML</th>
<th>Gripper margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum (standard)</td>
<td>740 × 1,060</td>
<td>480 × 480</td>
<td>10 ± 1</td>
</tr>
<tr>
<td>Maximum (option)</td>
<td>750 × 1,060</td>
<td>480 × 480</td>
<td></td>
</tr>
<tr>
<td></td>
<td>780 × 1,060</td>
<td>480 × 480</td>
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### Suitable substrates

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
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<tbody>
<tr>
<td></td>
<td>0.03 – 0.6</td>
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### Pile heights

<table>
<thead>
<tr>
<th></th>
<th>Feeder</th>
<th>Delivery</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1,300</td>
<td>1,200</td>
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### Production speed

<table>
<thead>
<tr>
<th></th>
<th>Maximum ¹</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>15,000 sheets/h</td>
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</tbody>
</table>

### Dimensions and weights

<table>
<thead>
<tr>
<th></th>
<th>Length ²</th>
<th>Width</th>
<th>Height</th>
<th>Net weight</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>7,250 to 8,250</td>
<td>4,020</td>
<td>2,000</td>
<td>approx. 12,000 to 18,000</td>
</tr>
</tbody>
</table>

### Die-cutting margin

<table>
<thead>
<tr>
<th></th>
<th>Die-cutting margin (standard)</th>
<th>Die-cutting margin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>13</td>
</tr>
</tbody>
</table>

¹ Dependent on material properties and job layouts
² Dependent on number of die-cutting units
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08/2018-e
Printed in Germany