

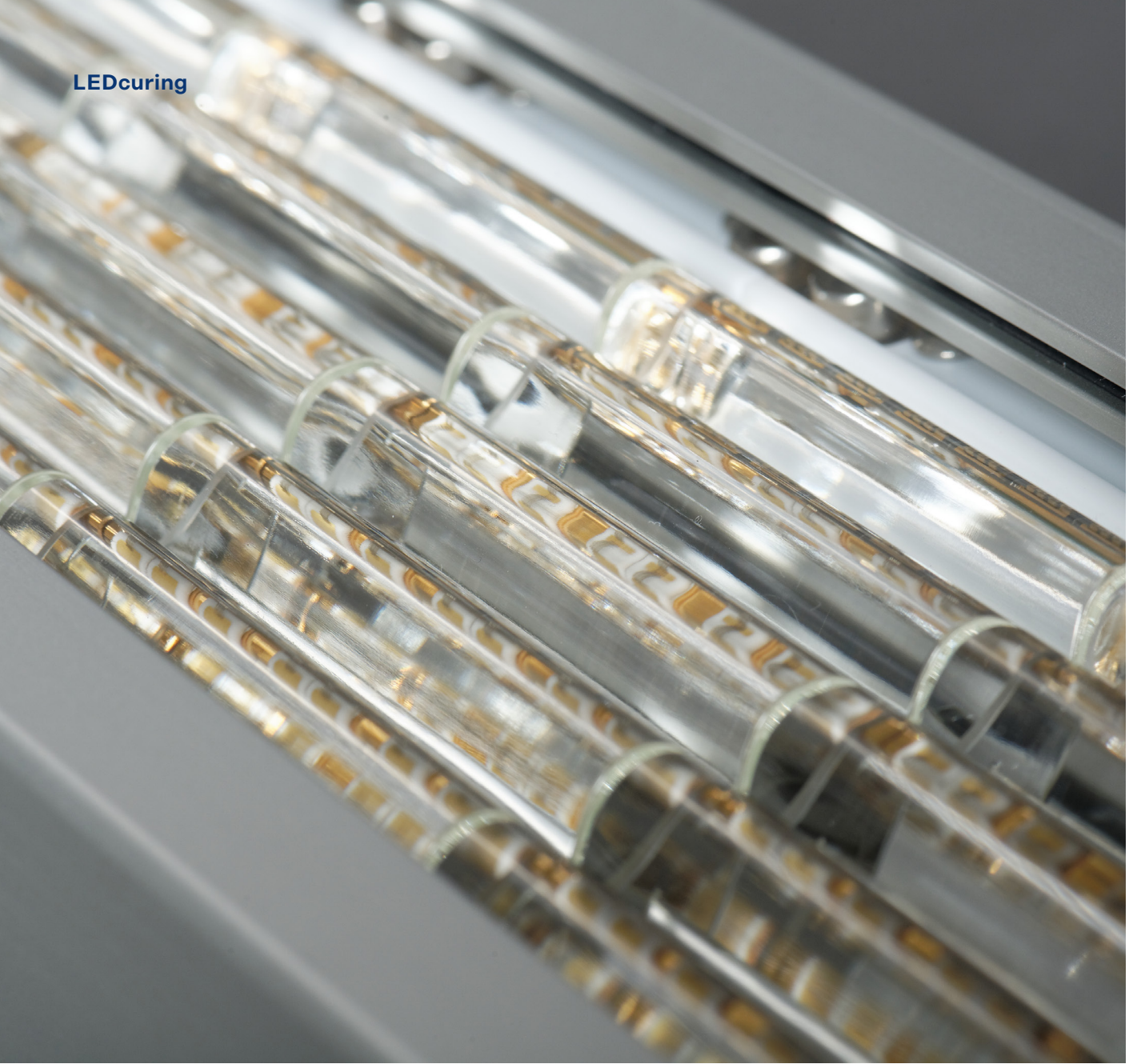
KOENIG & BAUER

LEDcuring Systems



we're on it.

EN



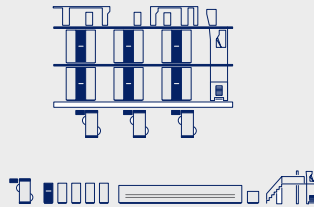
LEDcuring – more than just an alternative to conventional gas dryers

State-of-the-art UV lamp technology with energy-saving light-emitting diodes meets LED-UV inks that are perfectly matched to the wavelength of the light output. The result: Print products in a new quality – and immediately dry.

Criteria for a modern printing system

- Fast commissioning
- Short makeready times
- Low waste
- Substrate variability
- High availability
- Delivers the print quality demanded by the market

Press (commercial, newspaper or semi-commercial)



Examples of optimization using LEDcuring systems:

- Faster makeready and products that are cured immediately
- Less waste, as the LED system is fully effective as soon as it is switched on
- Greater contrast, deeper black, brilliant images

LEDcuring systems precisely meet the requirements profile of modern printing systems

The demands placed on modern printing systems range from fast makeready to minimal waste and optimum print quality. LEDcuring systems are an ideal fit and lay the foundations for efficient and quality-oriented production. When incorporated into a newspaper, semi-commercial or commercial web press, they thereby represent an attractive alternative – or even complement – to coldset printing or hot-air dryers.

Curing rather than drying – how it works

In a UV process, the ink is not dried in the traditional sense, but instead cured by means of polymerization. In contrast to a gas or IR dryer, this does not require components of the ink to be oxidized or evaporated. The energy required for the curing process is supplied by efficient, long-lasting light-emitting diodes (LEDs), which convert electrical current directly into light. These LEDs score points with all the same benefits as when they are used in private settings:

- Immediate readiness for use
- Low heat generation
- High-frequency intermittent operation
- High efficiency
- Compact design
- Long service life

For an LEDcuring system, this means: the rapid availability for operation accelerates start-up, eliminates the need for a standby mode, and avoids lost time during washing cycles in the printing units. Furthermore, there is only

minimal warming of the paper and significantly shorter web paths become possible. Compared to a conventional gas dryer, in particular, you benefit from faster readiness of the press for production, and from reduced waste.

Print products in your hand faster

After curing, the ink is immediately dry, which allows the print products to be passed directly to the further processing stages. That ensures greater productivity, faster throughput times and reliable adherence to your delivery schedules.

Environment and resource-friendly technology

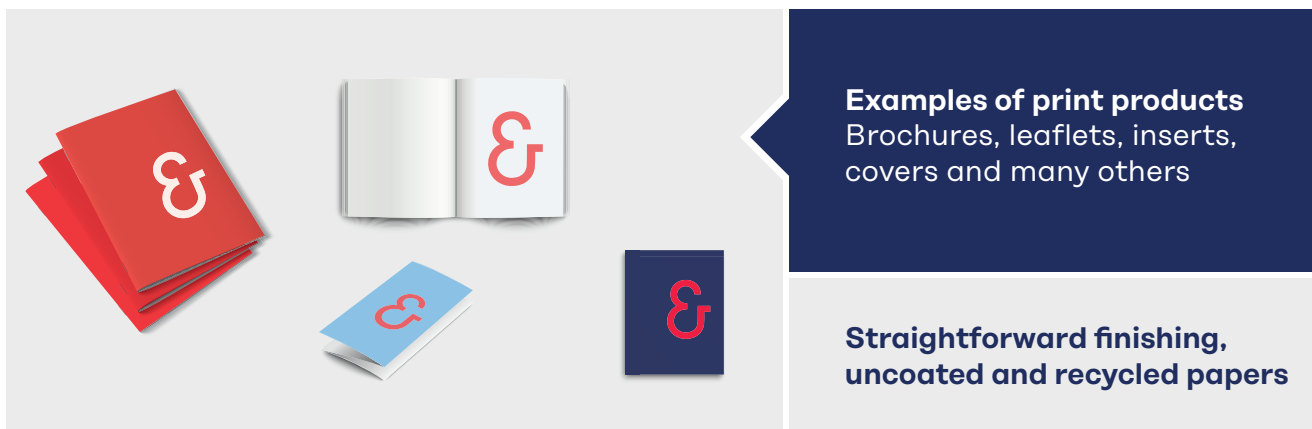
The energy consumption by an LED-UV lamp is only approx. 30 per cent of that of a conventional UV lamp. This reduces the generation of heat and less cooling is required. What's more, the LED-UV process is ozone- and mercury-free, and uses no fossil fuels such as natural gas. This all saves resources and promotes ecological production.

- Independence from gas prices and supplies
- Less waste
- Products are immediately dry
- No ozone, no mercury
- Reduced energy costs



Captivate your advertising customers with **ultimate print quality**

LEDcuring systems deliver print images characterized by brilliant color and super intensive contrast – and that over a wide spectrum of substrates.



Examples of print products
Brochures, leaflets, inserts,
covers and many others

**Straightforward finishing,
uncoated and recycled papers**

All in **short to medium runs**
and with **fast delivery times**

A broader range of capabilities opens the door to new customer segments and enables you to satisfy additional production demands. An LEDcuring system gives newspaper and semi-commercial printers, in particular, the ability to manage the utilization of their press in a more differentiated manner by taking on additional jobs, for example inline advertising products, day-shift commercials or special editions on LWC or SC papers.

You always get what you see.

The process results in immediate curing of the ink during actual printing and prevents later absorption into the paper. As a result, the

final color result approved when production commences is matched reliably.

Supply constant, first-class print quality.

A sharper dot, less dot gain and higher color saturation lead to greater color intensity and a printed image rich in contrast. On highly absorbent uncoated papers in particular, the quality differences are plain to see.

The benefits are not only visual.

The specially formulated LED-UV ink is so resistant to mechanical abrasion and rubbing that the silicone or protective varnish coating that

is otherwise necessary becomes superfluous. The natural character of the paper surface is preserved and its touch and feel comes to the fore – especially with premium fine and uncoated papers, that is a major bonus.

Bring greater variety into your substrate range.

The LED-UV technology is ideally suited for processing demanding materials that are a regular challenge for conventional offset. There are no concerns about coated papers maintaining their form, for example, thanks to the reduced heat input from the lamps.

- **New customer segments can be targeted by newspaper and semi-commercial printers**
- **No ink absorption and therefore a more reliable print result**
- **Greater color intensity and high-contrast images**
- **Silicone or protective varnish coatings are not necessary**
- **Extended substrate range**



LEDcuring systems in daily operation

LEDcuring systems impress with straightforward handling and minimal maintenance requirements made possible by a robust design and especially long-lasting LEDs.

Special inks

Curing by way of LED-UV lamps depends on the use of special inks. These inks are precisely matched to the working range (385 nm) of LED-UV systems. LED-UV ink contains photoinitiators to start and maintain the polymerization process.

The ink series available from a number of manufacturers permit deinking in line with the INGEDE Method 11 test and the assessment criteria for the Deinking Scorecard of the European Paper Recycling Council. Deinkability scores of 100 out of 100 possible points (= good deinkability) have been achieved for coated and uncoated papers. This facilitates the recycling of print products and their re-use as raw materials.

Low maintenance and monitoring requirements

With a service life of up to 20,000 operating hours, LED-UV lamps function on average for 10 times longer than conventional UV curing lamps, which means more operating time, less maintenance and fewer lamp replacements.

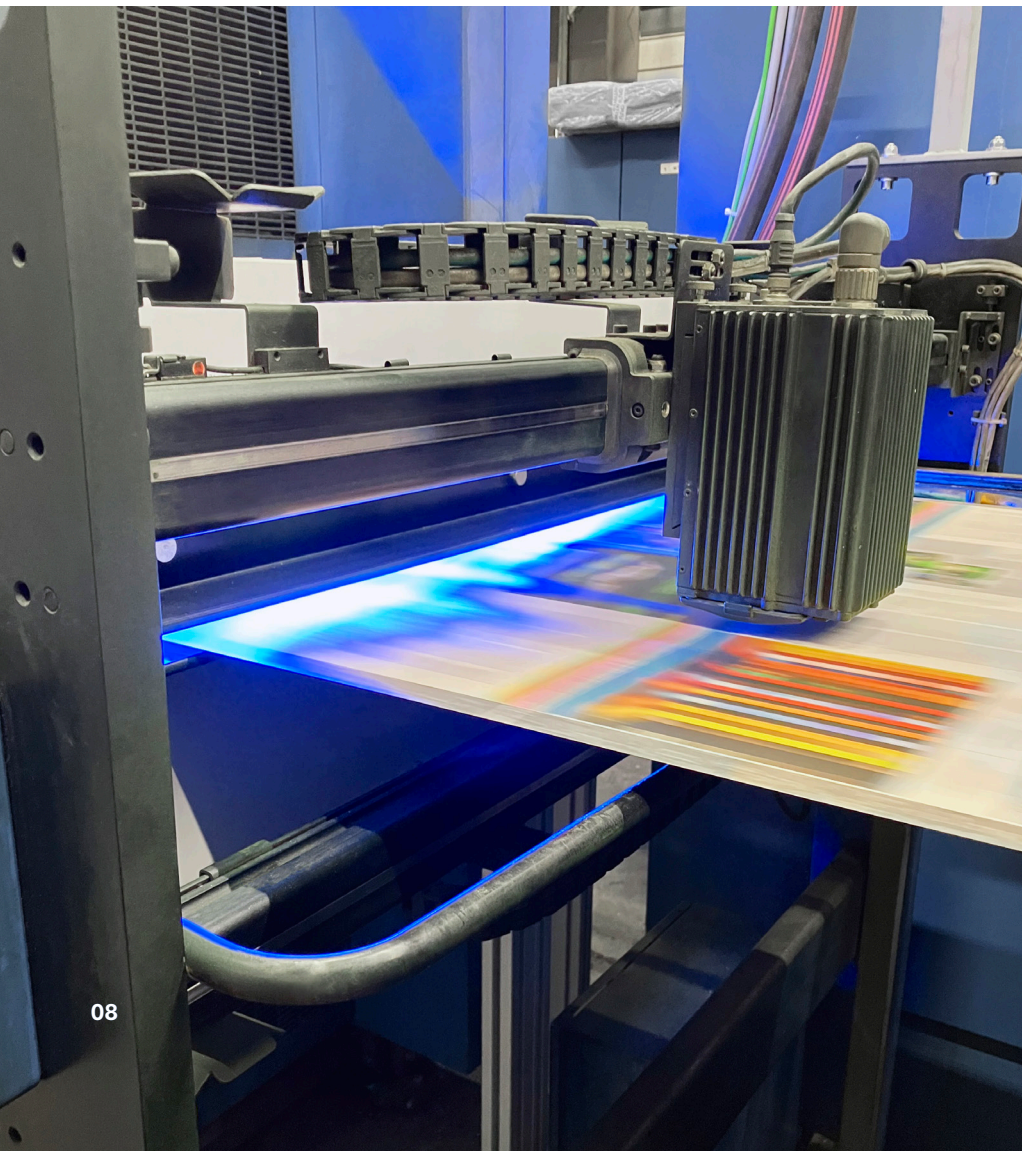
Unlike a UV arc lamp, whose output diminishes over time, LED-UV curing guarantees a constantly high performance. This eliminates

the need for continuous monitoring and preventive lamp replacement. Process and quality control are improved accordingly.

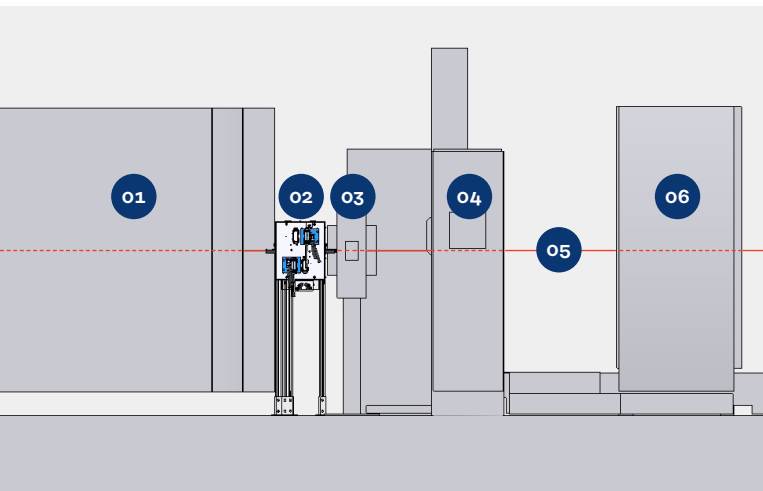
Thinking one step ahead: to be able to reduce product waste, expand production capacities and make optimum use of the product lines, operators must be in a position to work flexibly. To this end, they can program the UV energy output to match changing process requirements. Where several units are installed, individual modules can be switched off in accordance with the exact demand. That allows energy savings without reducing the production speed and without compromising on quality.

Integration of the LEDcuring system into your press

Depending on the production modes planned for the future and on the required level of flexibility, a range of tailored installation solutions can be realized.



LEDcuring system installed
on a C16 commercial web
press made by Koenig & Bauer



1. Heatset dryer
2. LEDcuring system with two LED-UV modules
3. Register control
4. Catcher roller
5. Web
6. Printing unit

Example of installation ahead of the heatset gas dryer on a commercial web press

From initial advice through to realization

Whether your business is sheetfed, securities or web printing: the companies within our group can offer years of experience in the field of UV printing technologies and work together with the leading suppliers of LEDcuring systems.

The question as to which UV system is best for you depends on numerous press-specific and customer-specific factors and therefore cannot be answered without an individual evaluation. To enable you to identify the ideal system for your particular needs, we would be pleased to support you with:

- Joint advice from both Koenig & Bauer and our partners
- Selection of the most appropriate drying or curing system
- Adaptation of your printing process, for example with the selection of suitable materials and consumables
- Contact to specialist energy consultants (eligibility for grants, e.g. when switching from gas to LED)

Integration into the press

Thanks to their compact design and the low space requirements associated with this, LEDcuring systems can usually be integrated with only minimal modification of the existing web paths. One significant factor is the production flexibility required in the future. Is an existing heatset gas dryer to remain in use, for example? Or do you prefer a so-called

“cold web lead” through the hot-air dryer (in which case the fans run simply to stabilize the web, without drying)? Or maybe you’d like to enable optional bypassing of the heatset dryer. Questions like these are clarified in advance in order to determine the best solution for your individual needs.

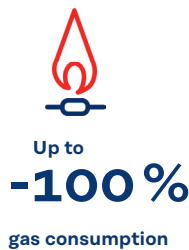
Our role as the manufacturer is to ensure smooth integration of the system into your press installation. The overall scope of supply depends on the press- and layout-specific circumstances. In a standard configuration, an LEDcuring system comprises the following components:

- LED modules
- Dryer housing with light protection at the web entry and exit points, and with water-cooled counterplates for heat absorption if required
- System cooling, water/air or water/water heat exchanger
- System control and touchpanel
- System components

- **Comprehensive advice**
- **Significant mechanical modifications are usually not necessary**
- **Tailored integration into your press**

Benefits of LEDcuring in figures*

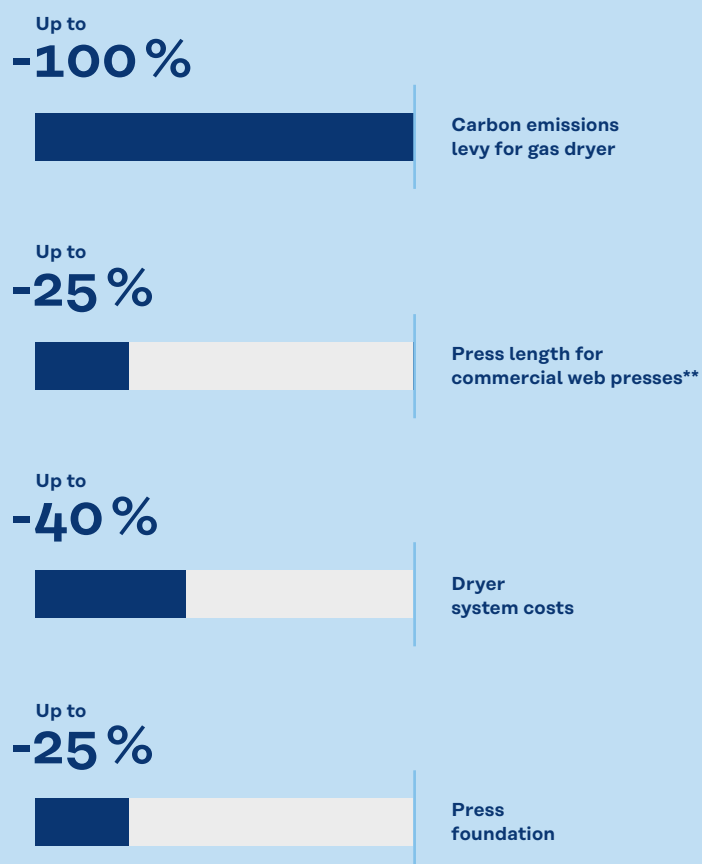
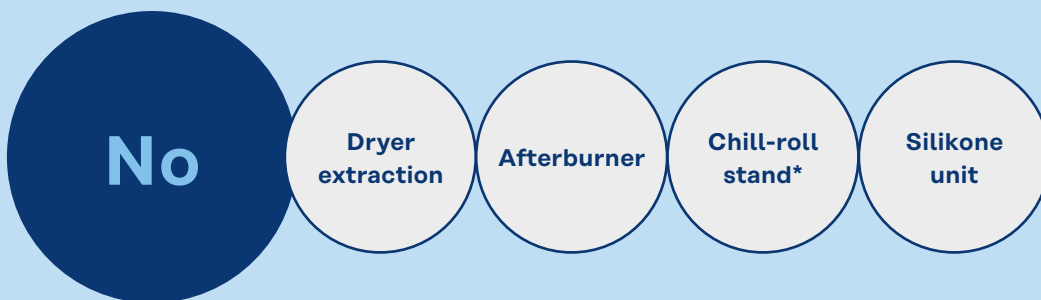
The system enables a whole series of potential savings in regular operation. Here is a brief overview:



* The figures listed here are based on actual experience and the production results achieved to date by test customers. They may deviate from the savings achieved on other presses due to specific press-, layout- or production-related differences.

** Customers report reductions in their average ink consumption when using LEDcuring systems. The extent of the savings in a particular production case, however, depends on the substrate, the materials used and the image to be printed.

If a hot-air dryer is replaced with an LEDcuring system, several press components and the associated infrastructure are no longer needed. When making a **new purchase** or a **relocating a press** in particular, this brings a number of benefits:



* An additional drag roller element may be required if no chill-roll stand is incorporated.

** Corresponds to a reduction in length of around 11–15 m for a commercial web press

Koenig & Bauer Digital & Webfed AG & Co. KG

Friedrich-Koenig-Str. 4
97080 Würzburg, Deutschland

T +49 931 909 0
service-dw@koenig-bauer.com

koenig-bauer.com

Texts and illustrations refer in part to special features not included in the basic press price. No parts of this publication may be reproduced in any way without the manufacturer's permission. The manufacturer reserves the right to carry out modifications without prior notice.

02/2023-EN
Printed in Germany