



Founded in 1972, KBA-Metronic is a medium-sized company with over 300 employees and has been a subsidiary of Koenig & Bauer AG since 2004. KBA-Metronic specialises in the development, design, production and marketing of printing and marking technology and has been manufacturing marking systems using the continuous inkJET printing process since 1987.

As a complete system provider, KBA-Metronic is very aware of market developments and customer needs. There is therefore a constant process of improvement and optimisation which secures the long-term lead of KBA-Metronic technology.

KBA-Metronic marking devices are used in industry worldwide. Renowned companies in the automobile, food-processing and pharmaceutical industries are successfully working with laser, inkjet, hot-stamping or thermal transfer devices from Veltichschale.



Continuous inkJET technology from KBA-Metronic

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in
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alphaJET Inkjet printers

The continuous inkJET technology from KBA-Metronic –
A complete overview of the alphaJET product range



The mark of quality: InkJET technology from KBA-Metronic – Reliable, fast and economical

Economical, easy to use, extremely efficient and robust, the alphaJET series inkjet printers are ideal for industrial applications. The alphaJET has been among the technological leaders on the international market for many years. As a high-precision marking system they are successfully used in all major industries by global market leaders throughout the world.

The freely programmable inkJET marking technology from KBA-Metronic is extremely versatile and the alphaJET is also suitable for a wide range of substrates. This diversity enables its use in an extremely wide range of industries, e.g. food, drink, pharmaceuticals, labelling, automotive and printing.

High precision printing using proven technology

The alphaJET series works on the basis of the non-contact **continuous inkJET process**. In this process, a conductive ink is pressed through a nozzle by means of an integrated pump, thus generating an ink jet. A piezo element develops ultrasound vibrations which divide the ink flow into small droplets. A defined charge is then applied to the droplets at the point of rupture. The droplets then pass through a high-voltage field which diverts the charged droplets accordingly. This diversion determines where the droplets are placed on the substrate. Non-charged droplets are not diverted and go into a gutter, from where they are pumped back into the ink system.

The whole ink system has a simple but robust design and is therefore extremely reliable. Ink bottles can also be refilled at any time during print operation so production downtimes are minimized.

The continuous inkJET process – droplet rupture can be monitored during operation by means of the light glass field into the print head.



Univalued economy

The low solvent consumption of the alphaJET C, alphaJET C-HS and alphaJET G4 in comparison with competitor products is particularly impressive. Through the **integrated recovery system** the solvent not required for printing is fed back into the unit. This delivers the enormous cost-effectiveness of the alphaJET C, which uses less than 2 ml of solvent per hour at an ambient temperature of 20° C. This value has been confirmed by an independent study.

The low consumption also considerably reduces emissions and hence the exposure of employees to fumes. Companies are therefore well set to comply with future workplace directives and regulations.

Versatile print head

Thanks to the **48-dot matrix** print head of the alphaJET C can print up to six lines with the option of shifting individual pixel by pixel enabling superscript and subscript characters in multi-line texts.

Text can also be applied in a **90 degree rotated position**. There is a free choice of font matrix with heights from 0.8 - 25 mm. All marking requirements can be met, from multi-line prints to high-quality logos or codes.



Innovative solution for all tasks. Text can be applied in two axial directions in one pass.



Runs like clockwork: Practical and user-friendly operation

Efficient easy to operate technology.
The test of any technology is its continued use in everyday applications. The winning features of the Inkjet printers from KBA-Metronic are simple operation and the ease with which they can be integrated into all production lines.

Right from the word go, the KBA-Metronic technology stands out for its high reliability and minimal start-up times, even after a period of inactivity of several days.

Users like the ergonomic membrane keyboard terminal and the clearly designed graphic user interface. Here the user can enter data texts, code numbers and logos in WYSIWYG mode. If required, the terminal can be positioned separately from the printer – allowing the user to find the ideal position even where installation conditions are difficult.

To simplify the workload a handscanner can be installed with the capability:

- to call up various memory texts from the alphaJET that can then be printed,
- to insert variable elements in a text with new data,
- to activate various existing configurations saved in the alphaJET.

Integration made easy

The open interface protocol makes integration of the printer into existing production lines easier. The programming language developed by KBA-Metronic can be customised for each installation, with standard routines easily adapted to local requirements. The adaptive system software makes it easier to handle errors in the production process and allows the fastest response times possible.

Efficiency in all applications

The Inkjet printers from KBA-Metronic can be used just as efficiently for simple applications – such as printing dates – as for complicated applications in which the alphaJET is networked with a PC, control unit, barcode reader, traversing systems or other peripheral units.



Precise marking on objects with non-planar surfaces.



Two extruded alphaJET C also marking with two different colors in one pass.



A wide range of materials and surfaces such as films, glass, metal, plastic, paper etc. can be marked with an alphaJET.



An alphaJET C control head unit is incorporated into a computer from KBA-Metronic, a generalisation system for individual code.

The users of continuous InkJET printers from KBA-Metronic enjoy the following benefits:

- Easy integration into any production line
- Practically emissions-free operation thanks to the solvent recovery system integrated as standard (alphaJET C)
- Most economical consumption of solvent in its class
- Maintenance-friendly thanks to modular design

- Extremely easy operation via terminal or PC software
- 1 to 6 line print image, font size up to 15 mm, resolution up to 48 dots
- Freely programmable
- Two-line operation possible with independent data
- Easy connection of peripherals
- Possibility of networking additional print devices via just one terminal
- Simple selection from a number of standard print programs

- Easy topping up of consumables
- Non-contact printing process providing top printing quality even with maximum print head clearance
- High quality print even on irregular surfaces
- Diverse range of inks also suitable for applications in sensitive areas (e.g. food and pharmaceutical production)
- Optimised price/performance ratio

At a glance: The right alphaJET for each application

Design suitable for industrial applications – robust steel or stainless steel construction is standard. The alphaJET E with protection class IP 55 is ideal for damp and wet areas.

alphaJET C – The classic choice for a number of applications

The outstanding price/performance ratio is demonstrated by the fact that the alphaJET C can be fitted with a second print head and is thus able to serve two production lines concurrently, with completely different data, logos or addresses.

In whichever position it is installed, the print head of the alphaJET C produces a high quality print of 1 to 6 lines on smooth and irregular surfaces.

Applications include best before dates, batch numbers, logos, barcodes, Data Matrix Codes, serial numbers and production data.

The alphaJET C can be operated with many different inks. This includes pigmented inks for high-contrast and non-fade marking on dark surfaces, or special inks such as UV-detectable inks.

alphaJET C-HS (high-speed) – Ideal for marking with small fonts at high speed

This model uses the same basic design as the alphaJET C. Due to the particularly high marking speed of up to 10 m/second, the high-speed version is perfect for marking cables and also products on high speed packaging lines.

**alphaJET C4 –
Ideal for multi-line printing**
With this model, packaging and products can be individually and simultaneously marked in multi-line production runs – either with four print heads in 1-line operation or with two print heads each in 2-line operation.

**alphaJET E –
Ideal for the drinks industry**
This system was designed to meet IP 55 protection class requirements and is therefore suitable for use in damp and wet areas. The alphaJET E also has an extended operating temperature range of 5°C to 45°C.

Complete overview of the product range



alphaJET C

alphaJET C-HS

alphaJET C4

alphaJET E

Dimensions and connected loads

	Stainless steel IP 54	Stainless steel IP 54	Stainless steel IP 54	Stainless steel IP 55
Dimensions of unit (H x W x D)	685 x 285 x 320 mm incl. terminal	685 x 285 x 320 mm incl. terminal	528 x 506 x 182 mm	603 x 512 x 251 mm
Weight	27 kg	27 kg	45 kg	26 kg
Dimensions of terminal 1	installed	installed	88 x 250 x 238 mm	installed
Dimensions of print head 1	360 x 40 x 40 mm	256 x 40 x 40 mm	169 x 40 x 40 mm	169 x 40 x 40 mm
Length of print head supply line	4 m (option of 2 m or 6 m)	4 m (option of 2 m or 6 m)	4 m (option of 2 m or 6 m)	4 m
Electrical connection	115 / 230 V +/- 10 %	115 / 230 V +/- 10 %	115 / 230 V +/- 10 %	115 / 230 V +/- 10 %
Operating temperature	10 / 60 Hz: 1.0 / 0.5 A	30 / 60 Hz: 1.0 / 0.5 A	12 / 40 Hz: 4.2 / 2.0 A	50 / 60 Hz: 1.0 / 0.5 A
Relative air humidity (max.)	<10°C to +40°C (dep. on ink)	<10°C to +40°C (dep. on ink)	<10°C to +15°C (dep. on ink)	<10°C to +45°C (dep. on ink)
Compressed air required	yes, non-condensing	yes, non-condensing	yes, non-condensing	yes, non-condensing

Features

	yes, available as option	yes, available as option	yes	no
External terminal	yes, available as option	yes, available as option	yes	no
Number of print heads	1 - 2	1 - 2	1 - 4	1
Number of production lines	1 or 2	1 or 2	1 or 2	1
Data type	2 x RS 232	2 x RS 232	2 x RS 232	1 x RS 232
Alarm output	yes	yes	yes	yes
Rotary encoder	1 (option of 2): 24 V	1 (option of 2): 24 V	1 (option of 2): 24 V	1/24 V
Product sensor	1 (option of 2): NPN/PNP	1 (option of 2): NPN/PNP	1 (option of 2): NPN/PNP	1/ NPN/PNP
Switchover of head via sensor	yes	yes	yes	no
Nozzle size	42 µ, 55 µ, 70 µ	25 µ	42 µ, 55 µ, 70 µ	55 µ, 70 µ
Ink supply	500 ml	500 ml	500 ml	1000 ml
Recovery of solvent	yes	yes	yes	no
Pigmented inks	available as unit variants	available as unit variants	available as unit variants	no
Ink circulation/filter	yes, for pigmented inks	yes, for pigmented inks	yes, for pigmented inks	yes, for pigmented inks
Automatic disconnection of power	yes	yes	yes	yes
Print head excess pressure term.	optional	optional	optional	yes
Angle print head (fixed)	yes, available as option	yes, available as option	yes, available as option	yes, available as option

Power

	1 - 25 mm	1 - 8 mm	1 - 25 mm	1 - 25 mm
Print head clearance	1 - 25 mm	1 - 8 mm	1 - 25 mm	1 - 25 mm
Feed size	0.6 - 15 mm	0.6 - 15 mm, single-line	0.6 - 15 mm	1 - 15 mm
Number of print lines/head	6	1	6	3
Print resolution/head	8 (5 x 5)	2 (5 x 5)	8 (5 x 5)	4 (5 x 5)
	48 dots	7 dots	48 dots	24 dots

Software

	3 x 3 (other sizes available)	5 x 5 (other sizes available)	3 x 3 (other sizes available)	5 x 5 (other sizes available)
Screen print	yes	yes	yes	yes
80° printing	yes	yes	yes	yes
Distance measurement	optional	optional	optional	no
Customer-specific program	yes	yes	yes	no

1: (H x W x D)