KONICA MINOLTA

ALPHAJET
unlimited possibilities

ECO CONSCIOUS DIGITAL PRINTING 4.0

RETHINK INDUSTRIAL PRINT PRODUCTION

Giving Shape to Ideas

MGI AT YOUR SIDE
WITH OUR FACTORY 4.0 STRATEGY

MGI digital technology presents its latest innovation: AlphaJET, the first ever Factory 4.0 solution for the industrial printing industry

The term Industry 4.0 goes back to 2011 when it was introduced at the World Industry Forum in Hanover marking the advent of the 4th Industrial Revolution. Industry 4.0 is committed to production equipment meeting the increasing demand for unique, personalised products while maintaining costs equivalent to mass production despite lower production volumes. The buzz word of Industry 4.0 is the digital transformation encompassing information technologies as well as hardware and software – all in a context of eco responsibility.

Thus, Industry 4.0 prompts companies to create dynamics through value chains ranging from design and production to the finished product and equipment maintenance. Following this path, MGI Digital Technology presents its latest innovation: the AlphaJET, the very first factory 4.0 solution of the industrial printing sector. The revolutionary AlphaJET offers integration on a single B1 sheet production line, combining a single-pass process, printing and finishing operations, information technologies and predictive maintenance.

Offering high added value, the AlphaJET simplifies print production that up to now was complex to realise, associating four-colour printing, personalisation, micro-writing, protective varnish, UV selective varnish and hot foil stamping at an industrial rate, by proposing an OEE (Overall Equipment Effectiveness) never reached before in the printing industry. This de facto considerably reduces the carbon footprint of the printed product.

Connected at your customers' premises, implemented by a small team, and controlled through an intuitive interface, the AlphaJET allows you to deploy your factory 4.0 strategy with a reliable, sustainable, and innovative solution, essential to move from a linear industry model to a circular model.

FROM THE 1ST TO THE 4TH INDUSTRIAL REVOLUTION

1765 » Mechanical production
1870 » Mass production
1969 » Automated production
2011 » Connected production

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MGI DIGITAL TECHNOLOGY
40 YEARS OF INNOVATION

Practical innovation creates added value

Specialising in professional digital printing solutions, MGI Digital Technology was founded some 40 years ago in 1982. As a French manufacturer of digital finishing presses, MGI focuses on the markets of packaging, commercial printing, web to print, smart packaging, and printed electronics. The company has 210 employees at five R&D and production sites located in France and Germany and has been listed on the stock exchange since 2006 (Euronext Growth). MGI has several thousand printing customers in 70 countries on 5 continents. Its reference turnover reached 68 million euros in 2019, 90% of which was generated by exports.

A pioneer in digital printing when the company came into being, MGI Digital Technology spends nearly 20% of its turnover on Research & Development and has a portfolio of 129 patents developed by some 60 experts and engineers in computer science, electronics, electromechanics, micromechanics, inkjet, chemistry, and colourimetry. Practical innovations have always been the company's DNA, with the launch of technological breakthroughs that enable our customers to differentiate themselves from their competitors, bringing added value to brands while helping companies reduce their production costs and lead times.

1982: Development of software for the printing industry

1991: Launch of the first black and white Master Carte digital press

2005: Launch of the first Meteor multi-substrate colour press

2008: Invention of 2D and 3D digital selective varnish

2015: Invention of 2D & 3D digital hot foil stamping

2022: Invention of the Digital Print Factory 4.0

Inventor of Digital Finishing in 2008 – technology that involves depositing UV selective varnishes and hot foil stamping following a fully digitised process, through its JETvarnish Series presses sold worldwide – MGI Digital Technology once again presented a unique innovation in 2022 with the AlphaJET, the first Digital Print Factory 4.0 that targets industrial printing. This breakthrough innovation needed 14 years of development and an R&D investment of 40 million euros.

MGI & KONICA MINOLTA
AT YOUR SERVICE WORLDWIDE

Efficient, reliable and professional field teams

More than 10 years ago, MGI Digital Technology and Konica Minolta formed a strategic partnership, under which MGI benefits from Konica Minolta's international distribution and customer support network. All over the world, the MGI KONICA MINOLTA sales representatives and technicians are available to assist you in the implementation of your Factory 4.0 strategy. They provide

- Analysis of your needs
- Support and advice in determining your AlphaJET configuration
- Installation
- Integration into your production routines
- Training
- Regular follow-up

You will never be alone in this transition process. Switching to the AlphaJET Factory 4.0, you benefit from the expertise and support of the extensive R&D team – including researchers, engineers, and ergonomists – of one of the world leaders in the graphic and packaging industries.

MGI Digital Technology

KONICA MINOLTA

INDUSTRIAL DIGITAL PRINTING

INDUSTRIAL EXCELLENCE
FRENCH ENGINEERING, GERMAN MECHANICS

Five clusters of industrial excellence in France and Germany

MGI Digital Technology's professional organisation is based on 5 Industrial Excellence Centres located in France and Germany, all of which complement each other. Each Industrial Excellence Centre specialises in a specific activity, allowing the MGI Digital Technology Group to distinguish itself in terms of research and development, design, engineering, industrialisation, manufacturing, and marketing of innovative solutions, for packaging, printing, and graphic industries professionals. The AlphaJET is fully integrated in this industrial organisation, where each cluster contributes actively to its design, its development, and its manufacture.

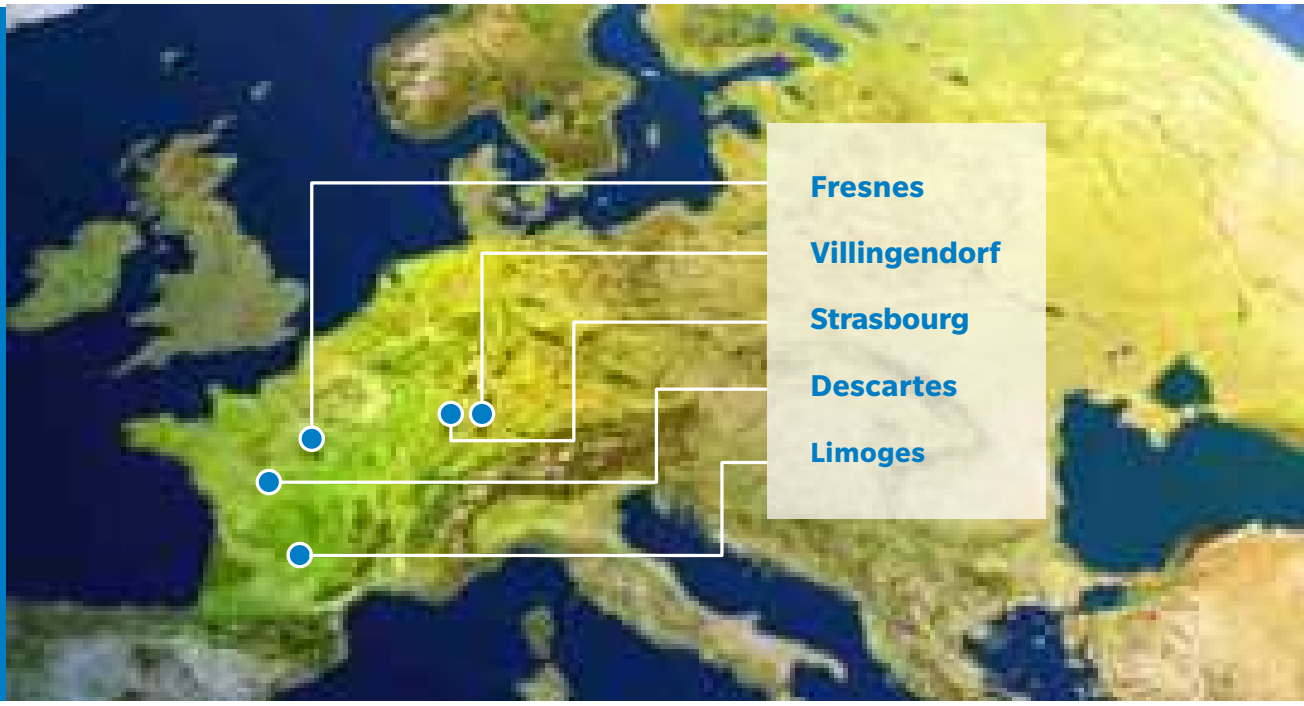
It is in **Fresnes**, in the Ile-de-France region, in the immediate vicinity of Orly airport, at the Group's headquarters, that the AlphaJET was contrived and designed by the Group's R&D engineering teams (mechanical, electrical, electronic, colourimetry, IT, paper, chemical). It is also in Fresnes that MGI's varnishes (Eco Varnish) and hot foils (Green Foil) are developed and manufactured on a specific site.

In **Villigendorf**, Germany, in the heart of the Black Forest, a region specialised in precision mechanics, MGI Köra Packmat designs, industrialises and manufactures all the mechanical components of the AlphaJET, whether it is its feeder or delivery, loading and unloading units for the trays, suction trays, paper circuit, electromagnetic linear motor, iFoil hot stamping unit, SmartScanner AIS artificial intelligence scanner, or the drying units.

Iin **Strasbourg** (France) in the heart of Europe, MGI Labs develops the AlphaJET's control station, as well as the IT services and applications that are integrated into it, namely MGI APPROVE, a remote proofreading 4.0 solution, in augmented reality, and MGI CATALOG, an online commercial prospecting solution.

MGI **Descartes** (France), in the Loire Valley, is responsible for the assembly of all the electrical components of the AlphaJET, including its wiring and electrical cabinets.

Finally, in **Limoges** (France), in the heart of Ester Technopôle, MGI Ceradrop receives the various components of the AlphaJET, in order to carry out the assembly and test runs before the production line is passed on to the customers. MGI Ceradrop is also in charge of manufacturing the inkjet print engines of the AlphaJET.



ALPHAJET, THE FACTORY 4.0 SOLUTION
SIMPLIFIES AND ACCELERATES PRODUCTION

The AlphaJET combines printing, personalisation, micro-writing and finishing

Combining various successive operation steps in the transformation of paper to print, the AlphaJET is an integrated production line, very similar in its concept to the production lines of the automobile industry. The AlphaJET production line covers the printing and finishing of B1 size sheets from 135g/sqm to 2mm thickness using an entirely digital process. The AlphaJET offers four-colour aqueous inkjet printing, personalisation, micro-writing, UV selective Eco Varnish, protective Eco Varnish, and hot foil Green Foil – all with fixed or variable data, and a flat or raised finish.

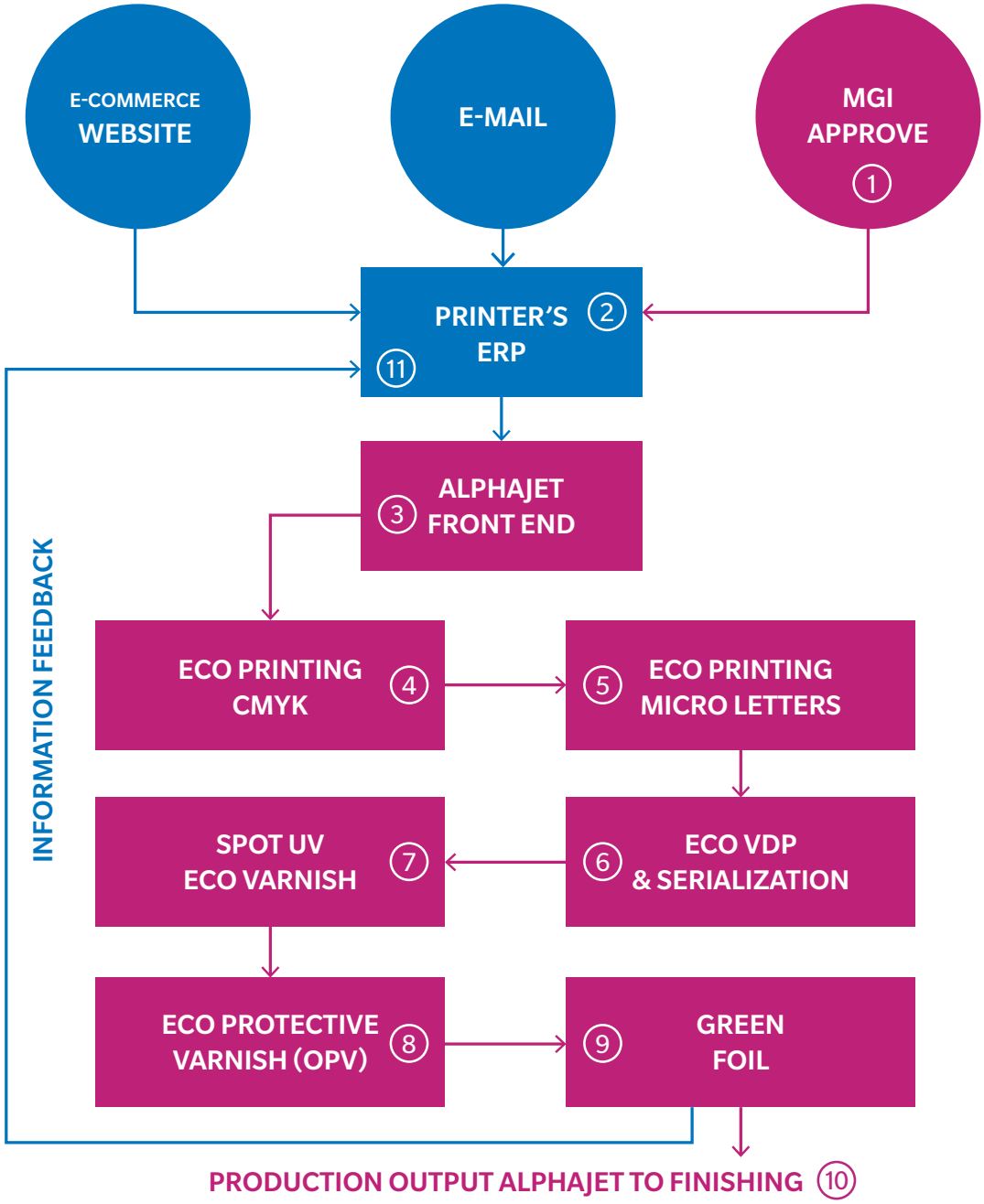
Developed with environmental responsibility in mind, the AlphaJET uses fully deinkable inks and varnishes as well as recyclable hot foil stamping. The AlphaJET integrates into your ERP and streamlines a production cycle that previously had to be completed on different machines or even outsourced.

Controlled by a simple and intuitive interface that can be replicated on any smartphone or tablet, the AlphaJET allows you to produce complex, high value prints online following a simple and unified operation process. With just a single setting, you obtain your desired printed sheet ready for finishing.

With MGI APPROVE, the remote 3D and augmented reality proofing software, you easily turn your AlphaJET into a sales development tool: Your customers can visualise printing and finishing effects remotely and can see their chosen packaging being assembled in 3D. Using mechanical technologies adopted from the automotive industry, the AlphaJET features simplified maintenance. On top, predictive maintenance helps anticipate the need for servicing at any time in real time.

11 STEPS TO A FULLY UNIFIED PRODUCTION FLOW

1. 3D proofing in augmented reality by the client
2. Integration with ERP printer: PDF and Job Ticket
3. Operated by a single operator from the control and piloting station
4. CMYK printing with aqueous inkjet 1,600 x 1,600 dpi
5. Micro letter printing
6. VDP personalisation & serialisation
7. UV selective Eco Varnish, flat or embossed, in fixed or variable data
8. UV OPV protective eco coating
9. Eco hot foil stamping, flat or embossed, of fixed or variable data
10. Sheets ready for finishing at the output of the AlphaJET
11. Billing data



UNIQUE SINGLE-PASS PROCESS

PRINTING, VARNISHING AND HOT FOILING IN B1+ (72x110mm)

100% digital, the AlphaJET streamlines the production of simple and complex prints

Variable data, selective varnish, hot foil stamping, a print run from a few sheets to several tens of thousands without any interruption thanks to its single-pass concept: With just a single setup of your AlphaJET, you obtain a printed, varnished, and gilded sheet ready for finishing. Managed by a single operator, the AlphaJET simplifies what has always been complicated.

1

ERP printing integration

Through its ERP and via JDF connection, you integrate your AlphaJET into the production routine of your printing company, achieving the smooth transfer of files and job-tickets without any obstacle.

2

Control and piloting station

Via its intuitive control station, you plan production and launch it. You can follow the different production stages – helped by 9 cameras – to calculate and optimise its OEE in real time. You have access at any time to the printing data of all previously produced jobs that are stored in the cloud.

3

High-capacity pallet feeder

Based on offset technology, the feeder of the AlphaJET accommodates 2400 sheets B1+ 350 g and is constructed to load a pallet quickly. Its suction system adapts to flexible or rigid supports, accepting paper from 135g/sqm to 2mm thickness. The feeder is directly connected to the automatic tray loader.

4

Suction trays

11 suction trays are used to transport B1 size sheets throughout the printing and finishing process. Driven by an electromagnetic linear motor, these trays follow a process with a precision never reached in industrial printing, the sheets held immobile on the trays to ensure perfect registration.

5

Artificial intelligence scanner

The artificial intelligence driven AIS scanner scans every sheet to be printed and every space to be coated, for perfect registration – in the range of microns – of the four-colour print process, UV selective varnish application, OPV protective varnish application, and digital hot foil Green Foil.

6

CMYK high-definition aqueous inkjet eco printing

The Fogra-certified MGI inkjet print engine features Memjet Duralink Food Compliant aqueous heads and inks for high-definition printing of 1600x1600dpi, wide gamut. It offers compatibility with coated as well as uncoated papers and Ingede 11 deinkability ensured by the eco-coating MGI Eco Inks. For permanent availability of the production line, ink heads are washed automatically.

7

Eco spot UV varnish (Eco varnish)

The MGI inkjet print engine and UV Eco Varnish offer excellent adhesion on all types of substrates, and yet are deinkable according to the Ingede 11 standard. The MGI UV Eco Varnish allows to anticipate customer expectations in terms of eco-responsibility of their prints and packaging. Automatic washing of the heads for permanent availability of the line.

8 Eco-protective varnish (OPV)

MGI's inkjet print engine and Eco-protective Varnish (OPV) offer excellent adhesion both in flat and 3D use as well as Ingede 11 standard deinkability. MGI's OPV provides equivalent results to varnishing in offset printing and, depending on its texture, can offer an eco-responsible alternative to lamination. For permanent availability of the production line, ink heads are washed automatically.

9 Eco-digital hot foil stamp (Green foil)

With the MGI Green Foil, hot foil stamping, flat or embossed, is possible on the protective eco varnish. Also MGI's Green Foil meets the Ingede 11 deinkability standard. MGI Green Foil waste generated by printers is deinked and recycled in a unique process that enables us to offer environmentally sound Hot Foil Stamping.

10 High stack pallet delivery

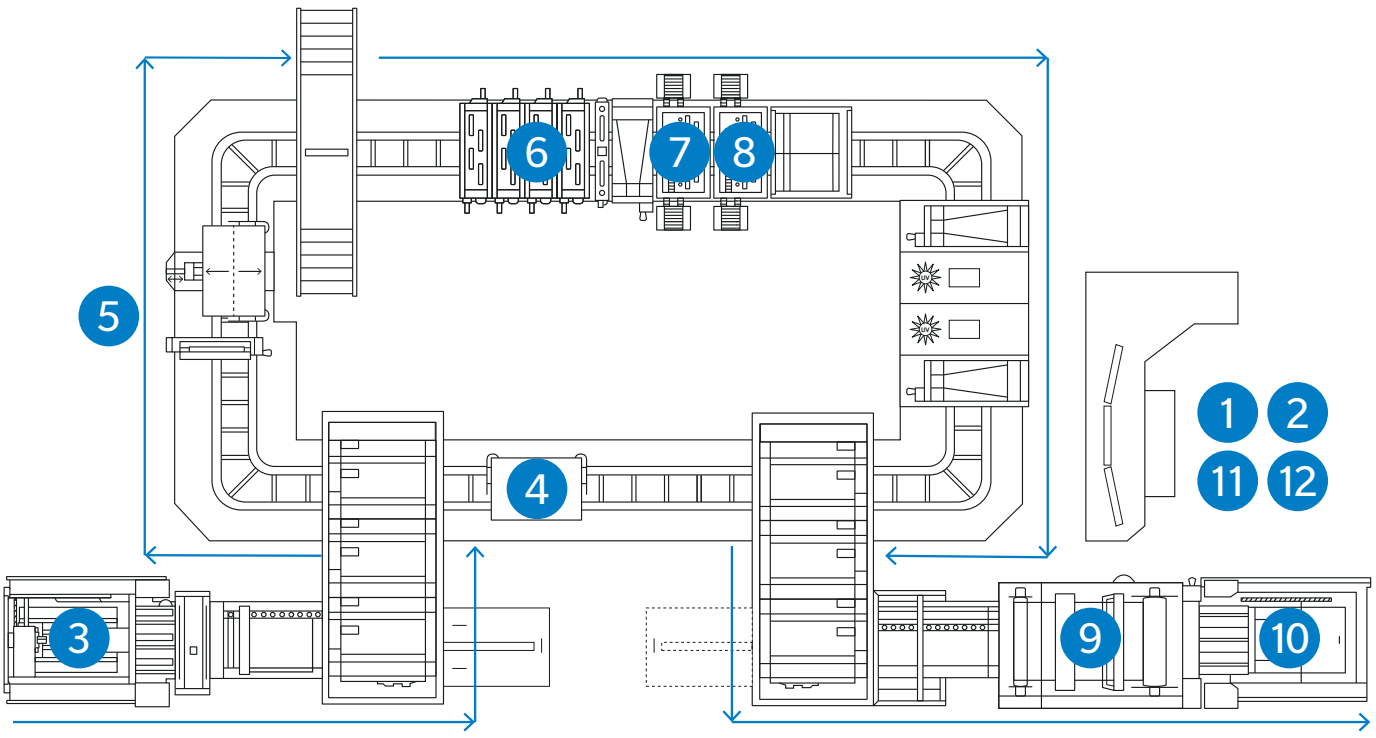
The offset type high stack pallet provides total integrity of printed and wrapped sheets, while facilitating the unloading of the pallet, all of which much increases the overall machine availability.

11 Predictive maintenance

Optimising the AlphaJETs OEE, the predictive maintenance program hosted on the Cloud is accessible at any time from the pilot station and the dashboard.

12 Remote proof approve (Option)

This optionally available web application allows customers to remotely view and manipulate realistic 3D proofs (packaging) in full PDF format, to annotate them, to change the types of gilding and to vary the thickness of the varnish before validation.



A GENERATOR OF ADDED VALUE
OPTIMISING OVERALL EQUIPMENT EFFECTIVENESS (OEE)

The AlphaJET revolutionizes the very concept of OEE: it eliminates production interruptions and boosts your productivity

In an increasingly competitive market, a key indicator of your industrial performance is the Overall Equipment Effectiveness rate (OEE) of all your equipment, which indicates its real production efficiency. In sheet-fed offset, an OEE of 27% is commonly accepted for a printing press. In other words, just 27% of the maximum available time of an offset press is effectively used for production when theoretically, its maximum technical performance could be 64%.

The only way to increase the OEE is real automation in order to come close to a possible performance of 64%. By integrating the different operations traditionally carried out on an offset press, a screen printing press, and a hot foil stamping press, in a single-pass 100% digital production line, the AlphaJET revolutionizes the very concept of OEE.

A new way to consider your OEE rate

From a fragmented vision of OEE applied to each piece of production equipment, the AlphaJET now allows you to consider a broader, integrated OEE rate, in the interest of creating added value. The AlphaJET will truly revolutionize your approach to OEE, because its integrated concept, eliminating production interruptions, boosts productivity: A print run of 3000 sheets integrating CMYK printing, UV selective varnish and hot foil, is now completed in a third of the former production time!

Mechanical technologies that need little maintenance

Automated, integrated and connected to your production flow, the AlphaJET also distinguishes itself in terms of effective availability, by the robustness of its mechanical technologies adopted from the automobile, aeronautics, and microprocessor industries. Maintenance for its electromagnetic linear motor is reduced by 90% by eliminating most of the friction and transmission parts: shafts, cardan joints, toothed wheels, chains, belts, etc. By eliminating 90% of the traditional maintenance operations such as lubrication or parts replacement, the AlphaJET contributes to a major increase of your productivity.

PROVEN MECHANICAL TECHNOLOGIES
OF THE AUTOMOTIVE, AEROSPACE AND SEMICONDUCTOR INDUSTRIES

Perfect tracking, exemplary stability and drastically reduced maintenance

The development of a digital Factory 4.0 press dedicated to industrial printing led MGI to completely revise the paper transport circuit with two objectives:

- to guarantee perfect tracking during each step of the printing/finishing process
- and to drastically reduce the maintenance required, in order to increase the OEE rate.

Developed with the ambition to be part of an eco-responsible approach, it was clear that the AlphaJET would have to offer great durability and use easily recyclable materials.

Electromagnetic linear motor: A first in the printing industry

To meet these two requirements, MGI chose proven mechanical technologies from the automotive and aeronautical industries and replaced the synchronous electric motors used in the printing industry by a linear electromagnetic motor. This mechanical innovation applied to the printing industry for the very first time allows to obtain an unequalled precision and power of movement, while reducing the energy consumption thanks to the suppression of energy loss due to friction and mechanical conversions. The number of moving parts could be reduced by 90% as no gears, ball screws, drive belts, shafts, rotors etc. are used – eliminating all traditional mechanical wear. Mechanical maintenance is thus reduced by 90%.

Flatbed transport via mobile suction trays: Substrate integrity and precision

The use of a linear electromagnetic motor has enabled the invention of a revolutionary paper circuit, eliminating the traditional rollers, cylinders, and belts – all mechanical elements that consume a lot of energy due to the losses generated by mechanical conversions, and that are subject to high wear.

The AlphaJET paper transport is characterised by a low number of moving parts, reduced maintenance, and an exceptional durability. The circuit is based on 11 moving suction trays, which transport the fixed B1 sheets throughout their various printing and finishing stages, similar to a process used daily in the semiconductor industry but at a size much smaller than B1! This revolutionary paper transport guarantees total integrity, as there is no deformation, compression, or movement of the substrate during its transport. This innovation also allows the AlphaJET to process flexible or rigid substrates, from 135 g/sqm up to nearly 2mm thickness!

A 4.5-ton marble slab: When the semiconductor industry enters the printing industry

In order to guarantee unequalled precision in the world of printing, the AlphaJET features an integrated marble slab of 4.5 tons as the base for the various printing units/finishers. This technological choice taken from the semiconductor industry guarantees the absence of any vibration for total stability of the printing quality.

A USER INTERFACE
WITH REINVENTED ERGONOMICS

A single operator can control the AlphaJET thanks to its central digital control station

Integrated into the printing facility's production flow based on the JDF protocol, the AlphaJET can be managed by a single operator on a daily basis.

The AlphaJET is controlled by a central digital control station, the MGI DIGITAL FRONT END composed of 3 computer screens that group all data, commands, and controllers of the production line. These screens can be replicated on any smartphone or tablet to facilitate the operator's control from anywhere in the production room. All information processed by the MGI DIGITAL FRONT END can be accessed at any time by the printing company's production management or its management control department, through an application hosted in the Cloud by Dassault Systèmes, a household name in this field.

Control at a mouse click

The MGI DIGITAL FRONT END allows you:

- To plan production and organise the work of different operators on the AlphaJET in line with their shifts.
- To manage the AlphaJET on a daily basis: live tracking of upcoming, ongoing, as well as completed production jobs, cost and OEE analysis. This monitoring is facilitated by 9 cameras positioned along the production line, providing an overall view of the production cycle.
- To obtain follow-up data of each produced job for benchmarking and continuous improvement.
- To access the AlphaJET's predictive maintenance program at any time in order to check on consumables status, preventive maintenance, and IOT.

Complete optimisation of the processed information flow

As the first actual application of Factory 4.0 applied to industrial printing, the AlphaJET is based on a robust and proven IT architecture and secure connections between the various modules that make up its production line. Based on an Adobe Print Engine, the MGI software suite integrated into the MGI DIGITAL FRONT END allows to process the incoming print files. It includes Pantone Libraries and a Spot Manager. Its X-Rite colour management system generates your own ICC profiles, while its Optimizer Module improves ink consumption on each print run in real time. All of these processes meet the Fogra G7 standard.

PACKAGING AWARD 2020

A CUSTOMER CONNECTION
TO DEVELOP YOUR SALES

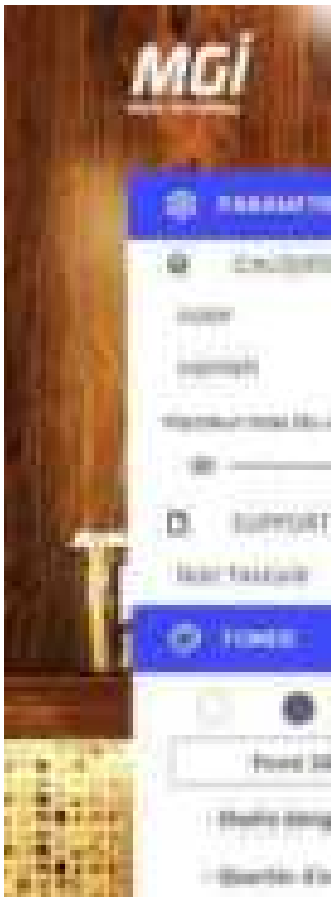
MGI APPROVE & MGI CATALOG: Get into your customers' homes to make their lives easier and develop your business

Integrated into your production flow, the AlphaJET also provides you with a close connection to your customers, through two applications that focus on customer needs. These are hosted in the Cloud, directly connectable to your ERP, and powered by Callas, the native solution of the Adobe PDF Print Engine: MGI APPROVE and MGI CATALOG.

MGI APPROVE: 3D proofing in augmented reality – via the internet!

Winner of the 2020 Packaging Award, MGI APPROVE is the first solution for remote management of customer proofs, three-dimensional and in augmented reality. Hosted in the Cloud on the secure platform of Dassault Systèmes, MGI APPROVE requires no IT investment and can be deployed almost instantly, by assigning logins and passwords to each of your customers. MGI APPROVE can be customised to the colours of each client company and allows them to access their library of work-in-progress, check their conformity, and to validate jobs with a few clicks, streamlining a traditionally time-consuming and costly process. More than a simple proof validation portal, MGI APPROVE enables you to visualise a flat or mounted print for packaging. MGI APPROVE's PDF engine lets you virtually manipulate the print or packaging according to the ambient light in order to appreciate the complex effects of selective varnish or hot foil, flat or embossed finish.

As a sales development tool, MGI APPROVE enables the customer to play with the texture and thickness of the varnishes, but also to change the colour and the haptics of the gilding, in a complete library of glossy or satin gilding that's environmentally responsible, supporting customers in refining their projects. An online collaborative solution, MGI APPROVE integrates a chat tool to engage in live or recorded discussions and allows projects to be annotated to follow their progress.



MGI CATALOG: Sales prospecting 4.0!

How should you entice new customers to apply UV selective varnishes and hot foil stamping to their printed material? It is simpe using MGI CATALOG, a web application hosted in the Cloud at Dassault Systèmes, which enables you to create online books of print samples, both flat and in 3D (packaging!), then providing access to these to any customer and prospect! MGI CATALOG does not require any IT investment, can be customised with the colours of your printing company, and allows the integration of complex documents that combine Q° printing, selective varnish, and foil!

The customisation engine, which is based on Callas, the native Adobe PDF Print Engine, lets your customers remotely manipulate the materials before printing. They can play with the ambient light to judge the effects of the finishing, can modify the thickness of the varnish, and can replace the default integrated gilding by drawing from a complete catalogue of eco responsible gilding, glossy or satin. As a complete solution, MGI CATALOG allows you to manage the email communication with customers and prospects, and to analyse in real time the effectiveness of your commercial prospecting campaigns!

4.0 QUALITY
FOR PRINTING AND FINISHING

With the AlphaJET, prints of very high quality become standard, giving you a major quality advantage

The challenge behind the development of the AlphaJET was to offer a level of printing and finishing quality so far unmatched in industrial printing and packaging. Because in a world where four-colour printing has become commonplace, this field required a major boost to quality.

The inimitable print quality achieved by the AlphaJET is characterised by first printing in photo quality, then finishing with a spot UV varnish, a protective varnish and a hot foil, flat or in 3D. Packaging and other commercial printed matter can thus be produced in short, medium or long runs, with or without variable data. With the AlphaJET, prints of very high quality become standard, giving you a major competitive advantage.

8 technological breakthroughs for epoch-making quality

The quality of printing and finishing by the AlphaJET is based on 8 major technological breakthroughs:

- A 4.5-tons marble slab as the base for the printing engine guarantees unique stability.
- A linear electromagnetic engine for perfect repeatability.
- A scanner controlled by artificial intelligence achieves a printing and finishing registration in the micron range.
- 11 mobile suction trays ensure total integrity of the substrates.
- 1,600 x 1,600 dpi inkjet print heads with 5 nozzle redundancies, for perfect deposit and definition.
- Duralink, an aqueous pigment ink, for a unique gamut (Fogra certification).
- MGI Eco Varnish magnifies precision, 2D and 3D.
- MGI Green Foil provides a unique range of brilliant and satin colours.

Unique print rendering

With the AlphaJET, simple and straightforward CMYK printing with incomparable rendering and exceptional definition is possible on a daily basis. And can be enriched with spot UV varnish, a protection varnish, as well as hot foiling – flat or embossed – of incredible fineness. The integration of variable data or the serialisation of the production also becomes child's play. The attractive production result will be packaging of twice the former attractiveness on the shelf, and other printed matter that definitely stands out from that of the competition.

MULTI SUBSTRATES

- Coated paper
- Uncoated paper
- Plastics
- Solid board
- Corrugated cardboard

PACKAGING
MARKET FOCUS

Flexibility, versatility, serialisation, environmental protection, and added value are the buzzwords in today's packaging printing industry. Supply times have never been so short, and for increasingly complex productions, the objective of which is to provide brands with the strongest possible differentiation on the shelf, in order to entice increasingly demanding consumers.

From perfect sampling to complex industrial productions

The AlphaJET is distinguished by its reduced set-up times, its ability to process cardboard, corrugated or graphic card from 250 g/sqm up to 2 mm thickness, coated or uncoated, flexible, or rigid, on runs ranging from special series to long runs, with or without variable data or serialisation, by directly integrating printing, varnishing and hot foil stamping.

The entirely digital technology of the AlphaJET, for the CMYK aqueous inkjet printing as much as for its UV Eco Varnishes, its GreenFoil hot foil that is deinkable to the Ingede 11 standard, enables the production of recyclable packaging, answering fully to the eco-responsible strategy of any brand. The OPV protective varnish offers an immediate alternative to certain laminations, anticipating future environmental regulations.

The right eco-responsible packaging, at the right time, in the right place

Brand packaging is confronted with regular changes, whether in terms of regulations, promotions, seasons, or even recipes and formulations. In the past, these developments have led to creating unnecessary waste, also and mainly because it was customary for instance to overstock packaging in order to obtain a better purchase price through the sheer numbers in a print run.

Now, the AlphaJET changes the rules by proposing a new industrial paradigm, enabling you to establish a constructive business relationship with your customers, in which they can avoid any waste of over-produced packaging. From now on, you will guarantee them the availability of:

- the right eco responsible packaging (most commercially effective and environmentally friendly),
- at the right time (allowing for seasonal variety),
- in the right place (versioning),
- without unnecessary stock.

This helps you straighten your production schedule over time, reducing your costs and improving your margins.

Scotch whisky
Scotch whisky
25

WEB TO PRINT
MARKET FOCUS

The challenge for Web to Print market players is now twofold, on one hand the ever-increasing automation of their order taking, pre-press and production flows, and on the other hand the need to differentiate themselves by an excellent print quality considering an ever more innovative competition. The dilemma print providers are faced with every day is having to produce printed materials of ever higher quality, ever cheaper, ever faster, with fewer operators. A dilemma to which the concept of Factory 4.0 and the AlphaJET fully respond.

AlphaJET: Connection, automation, and integration

Entirely digital, the AlphaJET automatically integrates with your production management, to receive your orders imposed in its order processing flow. The PDF files integrate all the layers relating to CMYK printing, the spot UV selective varnish, the protective varnish, and the hot foiling, as well as the desired texture and thickness, also including possible variable data or elements of serialisation. The integration of printing and finishing on the same production line optimises your production flow by eliminating the standstills and interruptions inherent in successive machine changes. A sheet loaded at the start of the AlphaJET production process is equivalent – at the end of the cycle – to a sheet going directly to the finishing. With the AlphaJET, your production times with equivalent job perimeters are halved, sometimes even cut by two thirds.

For print products with added value

The trivialisation of four-colour offset printing does not facilitate the differentiation strategies of Web to Print actors. On the other hand, the AlphaJET fully meets this need, offering you 4 key elements regarding highest print quality:

- Photographic print quality with a very wide gamut, high definition 1600x1600dpi, printed in an industrial fashion, which guarantees the desired "wow effect" from your customers.
- Micron-accurate application of very high-quality hot foil, with 2D or 3D effect, based on fixed or variable data.
- The application, to the nearest micron, of a flat or embossed spot UV selective varnish, based on fixed or variable data.
- The application of a protective UV varnish that can offer an environmentally sound alternative to conventional lamination. Helping you to distinguish yourself with the eco-conscious printing of photo books, business cards, brochures, flyers, posters, etc.

Respectful of the environment

As nowadays the consideration of the environment is essential also with regard to Web to Print, the AlphaJET helps you to show this with a much better carbon footprint than that of the traditional printing process. Also, its prints are deinkable according to the Ingede 11 standard, then recyclable.

COMMERCIAL PRINTING
MARKET FOCUS

The commercial printing market has undergone a paradigm shift; the fragmentation of orders has led to a drop in their average volume from 10,000 to 3,000 prints within the last few years. In this context, the major challenge is to reduce order processing times by automating production, while offering eco responsible print products with higher added value, integrating finishing, VDP and serialisation. The concept of production planning must evolve and the flexibility of printers increase still further; at the same time, print providers must reduce their costs. All this a major challenge considering production planning for heterogeneous print jobs, where each one is different from the next, and all are to be produced within days.

AlphaJET: the single-pass solution for smooth daily production management

By integrating the different operation steps of CMYK printing, flat or embossed spot UV selective varnishing, hot foil stamping and OPV protective varnishing on the same digital production line, the AlphaJET permanently optimises the production of B1 print runs, ganging them by type of substrate, and by grouping orders with and without finishing.

The elimination of production interruptions achieved by the various successive settings of the conventional processes (printing, hot foil stamping, varnishing) and that of the tools and intermediate consumables, allows to apprehend the orders as and when they arrive, and to produce them without waste, thanks to automatic settings on the fly controlled by artificial intelligence. The organisation of production is no longer anticipated according to the printing/finishing operations to be carried out, henceforth grouped together on the same production line, but by type of applications and substrates.

The Single Pass concept of the AlphaJET allows you – with just a single operator – to link optimised production runs of B1 gang printing, short, medium, and long run jobs, with simple and totally smooth just-in-time management, generating high added value.

CRAFTING
WITH CARE
WHERE IDEAS
MEET SKILLS
GIVE YOUR
DREAMS
Since the 1980s, as the complexity of buildings began to increase (in terms of structural systems, services, energy and technologies), the field of architecture became multi-disciplinary with specializations for each project type, technological expertise or project delivery methods.
Moreover, there has been an increased separation of the 'design' architect
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ECO RESPONSIBILITY
TO REDUCE YOUR ENVIRONMENTAL IMPACT

The AlphaJET has been developed to meet the most demanding expectations in terms of environmental responsibility

The 4th Industrial Revolution presents a unique opportunity for manufacturing companies to pursue the transition of their production towards sustainable energy and eco responsibility. Factory 4.0 means a high degree of automation, consuming fewer resources and the integration of effective recycling into all production routines.

Developed with this in mind, the AlphaJET requires fewer resources for its construction than conventional printing technology, and consumes less energy on a daily basis, per sheet produced. Its printing and finishing technologies have been developed from the outset to meet the expectations of the most demanding clients in terms of eco responsibility. With the AlphaJET, you will make the transition towards sustainable energy use a daily reality.

Deinkable and recyclable prints

Nowadays, the first and foremost concern of your customers will be to enter the market with packaging and printed matter that is commercially effective while respecting the environment. Attentive to the substrates that you propose, your customers' concern is likely to focus on the life cycle of their packaging and other print products regarding deinkability and recycling. With the introduction of the AlphaJET, MGI Digital Technology has doubled its innovation power in this field, concerning the deinkability of aqueous inkjet printing, of its UV varnishes and hot foil stamping, but also with regard to the recycling of hot foil stamping waste.

- The AlphaJET stands out in the market by offering high-definition aqueous inkjet printing that adheres to the Ingede 11 standard, thanks to the use of MGI Inks Eco-Coating, which facilitates both the deposition of ink on all types of media (uncoated, coated), and ensures its deinkability at the end of the life cycle of the prints. In parallel, MGI Inks UV Varnishes and MGI Green Foil also meet the Ingede11 deinkability standard, allowing printed paper to be recycled in the interest of a circular economy.
- Finally, the MGI Inks Hot Foil Stamping waste generated during packaging and printing/finishing benefits from a recycling channel set up by MGI Digital Technology. This consists of two steps: first, the deinking and grinding, then the recycling of the PET obtained as a high-quality raw material.

A production line that will reduce your environmental impact

Imagined, conceived, and developed to reduce your company's carbon footprint with perfect complementary service, the AlphaJET saves resources, energy, space, times, personnel, generates little waste, excels with impressive mechanical reliability, and offers a high OEE. Its versatility enables you to produce print products from prototyping to extensive print runs, of course including serialisation and variable data. As such, already today the AlphaJET stands for eco responsible industrial printing of tomorrow.

60% reduction of the equipment's carbon footprint

Due to its architecture and technology, the AlphaJET has a total weight of 20 tons, made up of 70% steel, 17.5% granite, 4% plastic, and 8.5% cables and electrical cabinets. The AlphaJET thus requires 70% less raw material than a conventional printing solution (e.g. 5-unit offset press + gilding + silk-screen press + tunnel = 64 tons), reducing the environmental impact of its construction cycle by 60%, which is the equivalent of generating 236 tons of CO_2 less!

Power consumption reduced by one third

The AlphaJET's consumption of electricity per sheet is 33% lower than that required in a conventional printing/finishing cycle, considerably improving your carbon footprint (0.05 kW per sheet vs. 0.069 kW).

2 to 3 sheets of waste per makeready

Thanks to its single-pass process driven by artificial intelligence, the AlphaJET reduces the waste prints created during machine setup virtually to zero, where during the conventional process of printing/finishing 3 successive wedges are generated, that is to say around 1,000 wasted prints. For an average print run of 3,000 sheets, 1/3 of the conventional production goes directly to waste.

A footprint reduced by half

The AlphaJET requires a ground surface of 150 sqm, against a ground surface of nearly 300 sqm for a conventional solution, resulting in a space requirement that is reduced by half. This 50% reduction in required floor space again reduces the carbon footprint of your production equipment with regard to downtime, maintenance, and heating.

Elimination of solvents, tools, and disposable consumables

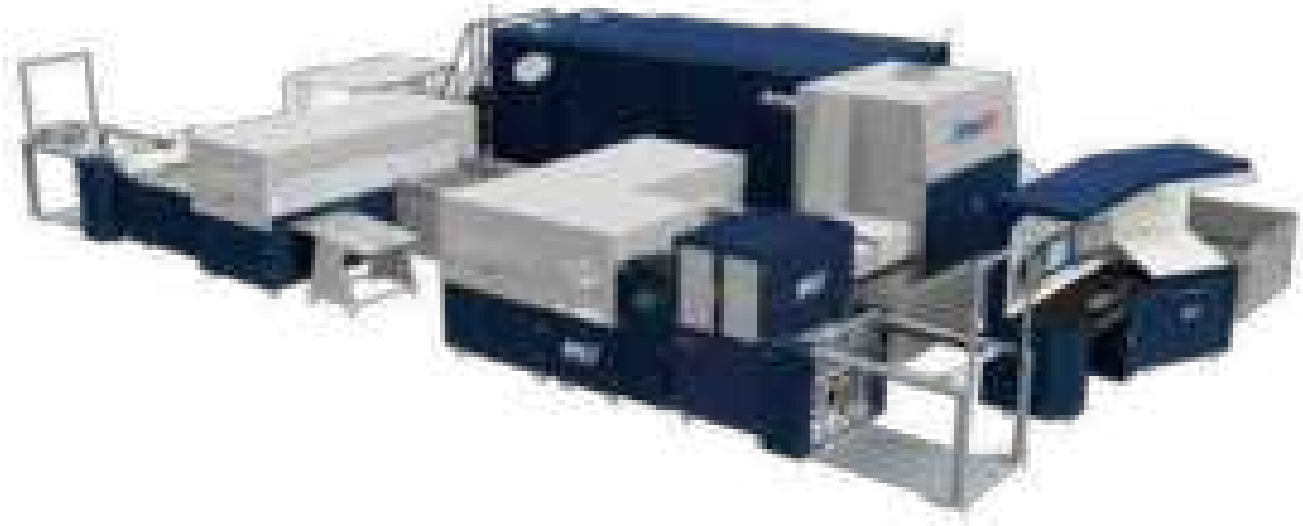
The entirely digital technology of the AlphaJET, in printing as well as in finishing, allows to eliminate all tools (clichés, plates and jobs) and consumables (solvents, powders) required in a conventional process. You thus contribute daily to the preservation of the environment while reducing the cost of each of your jobs by thousands of euros.

Attractive savings on personnel costs

The implementation of the AlphaJET requires one full-time operator – against 4 to 6 highly qualified people, full time, for a conventional solution. Considering the pyramid of ages (related to the eventual retirement of qualified personnel) and the difficulty of finding competent employees, the AlphaJET again helps improve the conditions in your production facility while reducing your overall running costs. Also, a lower number of operators is again instrumental in the reduction of your company's overall carbon footprint.

KONICA MINOLTA

ALPHAJET VIDEO



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