



Mühlbauer
High Tech International

ePASSPORT PERSONALIZATION TECHNOLOGY

PRODUCT OVERVIEW



MÜHLBAUER GROUP

State-of-the-Art Technologies and Solutions

Cutting-Edge Technologies and Solutions

The Mühlbauer Group is the only single-source technology partner for the production and personalization of cards, passports and RFID applications worldwide. With around 3,500 employees, technology centers in Germany, Malaysia, Slovakia, the USA and Serbia, and a global sales and service network, we are the world's market leader in innovative systems and software solutions, supporting our customers in project planning, technology transfer including system integration and production support.

Exclusive Manufacturer Service

35 production and service facilities on five continents, worldwide spare parts repositories and individual service and financing concepts enable us to provide a unique service quality, allowing us to react and bring solutions within two hours.

Seeing is Believing

In our global technology centers, for example in Germany, Malaysia, South Africa and the USA, we exhibit our complete range of smart card and ePassport production and personalization products, as well as RFID inlay production and converting processes. Almost every system is available and ready for demonstrations. Additionally, the company's know-how can be experienced in the TECURITY EXPRESS show truck, an unrivaled mobile high-security production center on wheels. Convince yourself of the superiority of Mühlbauer technologies.

Technology and Market Leadership

To ensure and expand the technology and market leadership, Mühlbauer continuously invests in innovative products and processes. Our research and development centers with over 400 highly-qualified engineers and technicians collaborate closely with customers and research institutions in order to efficiently launch reliable solutions in increasingly shorter development and production cycles.

Open Communication

While aiming to extend our current leading market position in the emerging areas of government security and biometric applications, we ensure strict privacy in all projects and serve as a reliable partner for sophisticated industries. We are committed to provide the highest speed, best quality and strict customer-oriented services.

Business Unit TECURITY®



Mühlbauer specializes in innovative one-stop solutions encompassing the production, personalization and issuance of ePassports, ID cards and other card-related security documents and fully automatic border control systems. The business unit TECURITY® bundles the extensive know-how of the development of tailor-made security solutions. In the last 30 years, we have been intensively involved in over 300 government related ID projects across the globe.

Business Unit Automation



More than 100 different standard and customized products and intelligent software solutions for data enrollment, border control, as well as personalization and production management are the core of the business unit Automation. The division is responsible for the development and manufacturing of Mühlbauer technologies. In addition to systems used for high-quality document production and personalization in high-end security products, we manufacture one-stop turnkey solutions for industrial image processing of cards, coins and bank notes, tubes and other products. Moreover we develop and produce innovative systems such as micro-chip die sorting, flexible solar cells or carrier tape equipment for specific niche applications in the semiconductor back-end area (semiconductor related products), as well as labeling and marking systems for traceability of electronic components (traceability).

Business Unit Parts & Systems



Mühlbauer's Parts & Systems segment produces high-precision components – both for the manufacturing of Mühlbauer products and as a supplier to security-sensitive industries such as aerospace, motorsports, semiconductor and medical engineering.

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The Möhlbauer Group does not guarantee that the information contained in this catalogue is up-to-date, complete and accurate. The contents are subject to changes. Provided system-information is binding only when submitted project-related in the form of official offers and/or official technical data sheets.

One Stop Shop Technology Partner

Comprehensive Competence in End-to-End Systems

Mühlbauer Group is the only global acting single-source provider for end-to-end production of solutions and systems for the smart card, ePassport and semiconductor industry. We incorporate significant competence in providing optimized and state-of-the-art technology as well as customized equipment.

Our products merge the main three factors for our customers' success story:

- In-house development and research
- In-house production and assembly
- In-house training and technology transfer





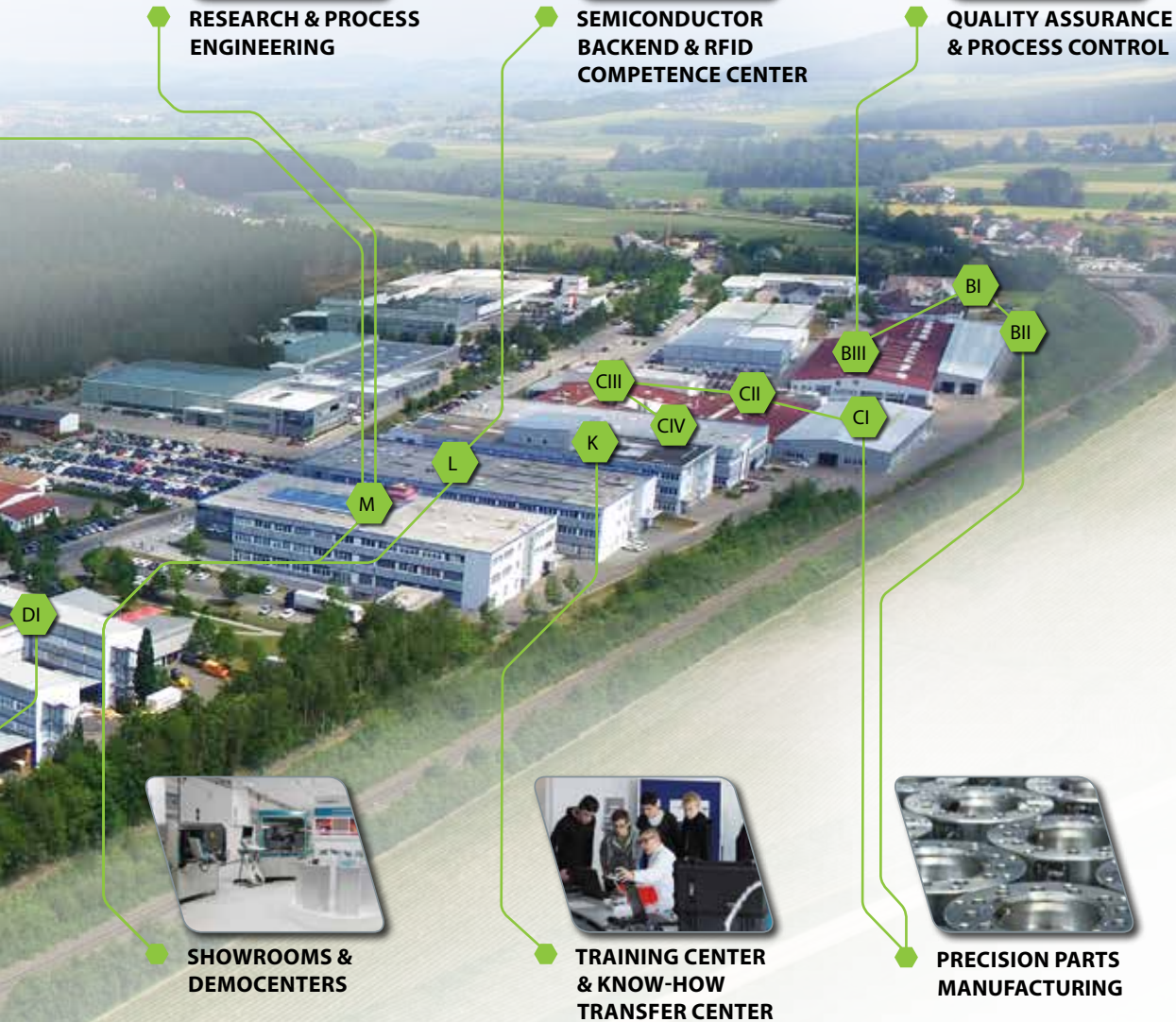
**RESEARCH & PROCESS
ENGINEERING**



**SEMICONDUCTOR
BACKEND & RFID
COMPETENCE CENTER**



**QUALITY ASSURANCE
& PROCESS CONTROL**



**SHOWROOMS &
DEMOCENTERS**



**TRAINING CENTER
& KNOW-HOW
TRANSFER CENTER**



**PRECISION PARTS
MANUFACTURING**

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

The Mühlbauer Group's core competences in delivering perfected machine products are the manufacturing of the precision parts, the development and constant enhancement of mechanics and electronics, the process and the software solutions. Due to constant investments

and a well-trained R&D team, Mühlbauer has grown to be the most innovative technology partner that guarantees optimized systems. We excel in perfectly coordinating every single step of the process, thus ensuring the most efficient and reliable products for our customers.

IDENTIFIER 6 INK

Desktop Passport Personalization System



KEY MODULES



Booklet input / output
(single slot front in / front out)



Security foil lamination
(external)



Contactless chip encoding
(external)



Inkjet printing
(pigmented ink)



Number detection



Alignment vision

UPH



FEATURES & ADVANTAGES



Key Features

- Most compact desktop passport personalization system
- Front-loading / front-receiving
- Full pigmented ink
- Passport thickness with 24, 32, 48 and 96 pages - others on request
- Identical printer core like in IDENTIFIER 60 and IDENTIFIER 6000 for forensically identical results
- Online support
- MCES / INCAPE ready



Productivity / Process Units

- Manual passport input
- External RFID / chip personalization system optionally available
- Vision system for optical print alignment optionally available
- 4 color inkjet printing technology
- 400 ml high-capacity ink tanks (100 ml for each color)
- Print area holder page and visa page opposite holder page
- TCP/IP interface
- Environment conditions: Room temperature: 23°C; +/-5°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Print resolution: Up to 720 dpi
- Interface: USB 2.0 optional
TCP/IP protocol
- IC Module types: Contactless: ISO 14443 / 15693
- Throughput: Up to 80 passports / hour;
depending on process and chip coding time
- Printing text format: OCR-B fonts MRZ - others on request
- Picture format: Able to print and use format BMP, GIF, JPEG, PNG or TIFF - others on request

The IDENTIFIER 6 INK is a semiautomatic system for the personalization of the latest generation passports, processed by inkjet technology. The passport booklet is manually fed into the machine. The machine aligns the booklet (optionally) and personalizes

it by using inkjet technology. To enable a full personalization of the passport several options like RFID, serial number detection and alignment vision are available. After personalization, the passport is returned to the operator through the front slot of the system.

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

IDENTIFIER 60

Desktop Passport Personalization System



KEY MODULES



Booklet input
(input slot or input magazine)



Contactless chip encoding



Laser engraving



Inkjet printing
(pigmented ink)



Security foil lamination



Vision inspection / QA

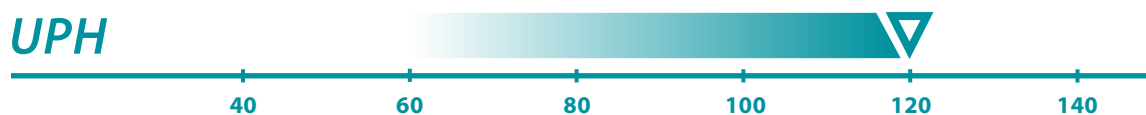


Booklet output
(output slot or output stacker)

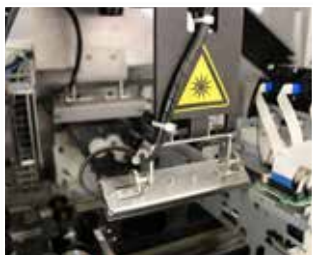


Page turning

UPH



FEATURES & ADVANTAGES



Key Features

- Modular office passport personalization system - upgradeable even on site
- Industrial design
- Manual or automatic passport feeding
- Color inkjet personalization technology available
- Laser personalization technology available
- Identical printer core like in IDENTIFIER 6 and IDENTIFIER 6000 for forensically identical results
- In-line lamination module available
- Inside verification available
- Online support
- MCES / INCAPE ready



Productivity / Process Units

- Manual or automatic passport feeding
- Passport magazine for up to 30 passports optionally available
- In-line RFID / chip coding system
- Color inkjet printing system for paper based holderpages; full pigmented ink
- 400 ml high-capacity ink tanks (100 ml for each color)
- Laser system available for PC based data pages
- Vision system for precise print alignment
- Optical inspection systems for input / output verification
- Data matching between optical and electronical personalization
- In-line lamination system for security overlay optionally available
- USB or TCP/IP interface
- Environment conditions: Room temperature: 23°C; +/-3°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Print resolution inkjet: 720 dpi
- Print resolution laser: Up to 1,200 dpi
- Interface: TCP/IP
- IC Module types: Contactless: ISO 14443 / 15693
- Throughput: Up to 120 passports / hour; depending on process and chip coding time

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

The IDENTIFIER 60 is a modular desktop system for the personalization of passports of the latest generation processed either by inkjet technology or by laser engraving or combinations of both. The passbook is fed into the input slot or an input magazine of the machine system. The modular system allows for the com-

bination of all necessary modules to fulfill a complete personalization of the booklet. Inkjet and / or laser systems, lamination modules and optical / electrical verification can be integrated in the system. The system can be enhanced with magazine input and output stacker.

ID 60 PLUS



Passport Personalization System



KEY MODULES



Booklet input
(input slot, input magazine, input stacker for closed booklets)



Contactless chip encoding
(single or parallel)



Inkjet printing
(different solutions available)



Page turning



Security foil lamination



Laser engraving
(single or parallel)



Alignment vision



Vision inspection / QA



Booklet Output
(for opened or closed booklets)

UPH



FEATURES & ADVANTAGES



Key Features

- Modular Office Passport Personalization System - upgradeable even on site
- Industrial Design
- Manual or Automatic Passport Feeding
- Different Kind of Inkjet Technologies
- Alfresco Technology with Liquid Coating
- Laser Personalization with different Laser Systems
- In-Line Lamination Module
- Identical optical personalization core with IDENTIFIER 60, IDENTIFIER 6000 and IDENTIFIER 6000-S for forensic identical results
- In-line Optical and Chip Verification
- Online Support
- Ready for MCES / INCAPE and PALAMAX



Productivity / Process Units

- Manual passport feeding
- In-line RFID / chip coding system available
- Laser system for PC based data pages
- Vision system for precise print alignment available
- Optical inspection systems for input / output verification available
- Data matching between optical and electronical personalization available
- TCP/IP interface
- Environment conditions: Room temperature: 23°C; +/-3°C
- Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Print resolution Inkjet: Up to 720 dpi
- Laser Print resolution Laser: Up to 1.200 dpi
- Interface: TCP/IP
- IC Module types: Contactless: ISO 14443 / 15693
- Throughput: Up to 200 passports / hour; depending on process and chip coding time

The IDENTIFIER 60 PLUS is a modular industrial office system for the personalization of passports of the latest generation, processed either by inkjet technology or by laser engraving or combinations of both. Laser and inkjet technologies are merged into an amazing photo personalization process named MB Alfresco, protected with liquid coating. The passport is fed into the machine system's input slot. The modular system allows

for the combination of all necessary modules to fulfil a complete personalization of the booklet. Optionally, multiple chip encoding, inkjet and/or laser systems, lamination modules and optical/electrical verification can be integrated into the system. The personalized passports will be fed out to a slot. The system can be enhanced with a large magazine input and output stacker.

Inkjet Systems

Laser Systems

Lamination

Mailing



















Software

IDENTIFIER 6000

Passport Personalization System



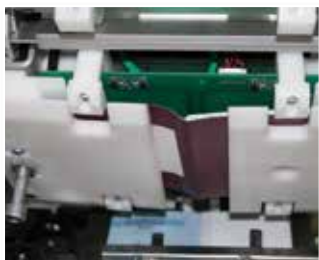
KEY MODULES

 Multi booklet input (stacker or magazine)	 Inkjet printing (impact printing possible)	 Booklet closing
 Booklet opening	 Security foil lamination	 Labeling module
 Passport identification module (e.g. serial number detection)	 Laser perforation	 In-line reject module
 Cleaning module	 Laser engraving	 Packaging module
 Contactless chip encoding	 Page turning modules	 Sorting module
 Numbering station (optionally with unique matrix unit)	 Quality assurance and data verification	 Multi booklet output (tray)

UPH



FEATURES & ADVANTAGES



Key Features

- Fully automatic high-speed passport personalization system
- Highly modular system design - upgradeable even on-site
- Parallel process tracks to achieve max. speed and availability
- Multiple RFID / chip coding stations
- Inkjet and / or laser printing technologies
- In-line lamination unit for security overlays
- Optical inspection systems for input / output verification
- Data matching between optical and electronic personalization
- In-line lamination system for security-overlay available as option
- Identical printer core like in IDENTIFIER 6 and IDENTIFIER 60 for forensically similar results
- Online support
- MCES / INCAPE ready / PALAMAX



Productivity / Process Units

- Automatic passport feeding and stacking from / to passport buffers, up to 1,200 booklets capacity
- Automatic page turning units
- Up to 12 RFID / chip coding units in parallel
- Up to 8 laser printing units
- Up to 8 parallel inkjet printing and lamination units
- High-speed DOD printing technology with UV curing ink available
- Vision system for input quality control and precise print alignment
- Electrical and / or optical output quality control
- In-Line Lamination System for Security Overlay (optionally available)
- Environment conditions: Room temperature: 23°C; +/-3°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Print resolution inkjet: Up to 720 dpi
- Print resolution laser: Up to 1,200 dpi
- Interface: TCP/IP
- IC Module types: Contactless: ISO 14443 / 15693
- Throughput: up to 1200 passports / hour

Mühlbauer's IDENTIFIER 6000 is a breakthrough in the development of high-class solutions for state-of-the-art passport / ePassport personalization according to format ID-3 (others upon request). The IDENTIFIER 6000 is designed to meet highest industrial demands regarding modularity, integration of parallel process modules as well as latest electronics and software technology. The machine covers all the passport personalization processes. The machine

ergonomic design in conjunction with the intuitive graphical user interface (GUI) provides a user friendly experience, thus reducing the operator fatigue, at the same time maximizing productivity. Due to its highly flexible design, Mühlbauer's IDENTIFIER 6000 can be easily configured according to customer and project demands. The machine can be adapted to the changing requirements even on-site, thus proving its versatility and reliability.

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

PLS 50P

Passport Lamination Systems



KEY MODULES



Passport lamination

UPH

40

60

80

100

120

140

FEATURES & ADVANTAGES



Key Features

- Compact desktop passport lamination system
- Easy to operate and maintain
- Closed booklet with sewn-in laminate



Productivity / Process Units

- Manual passport feeding
- Adjustable lamination temperature, speed
- Environment conditions: Room temperature: 23°C; +/-3°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Foils; max. size: ID-3 format
- Throughput: Up to 60 passports / hour; depending on process parameters

Enhanced setup for PLS 50P

- Lamination speed: 1 - 12 mm / s
- Lamination temperature: 40 - 200 °C
- Passport thickness: 3 - 5 mm

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

The PLS 50P is designed for the lamination of booklets with sewn-in laminate. The booklet is processed in closed way through the laminator. Together with

the IDENTIFIER 6 it creates the optimal solution for the personalization of smallest amounts of booklets.

IDENTIFIER 6 LAM

Desktop Passport Lamination System



KEY MODULES

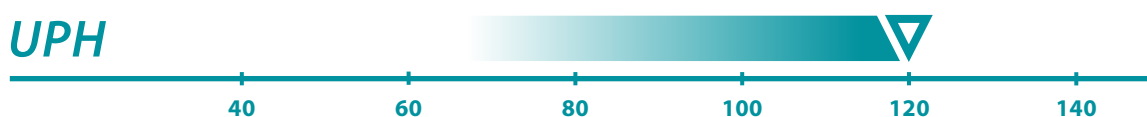


Manual booklet input / output



Security foil lamination
(reel-to-reel for patches or endless laminate)

UPH



FEATURES & ADVANTAGES



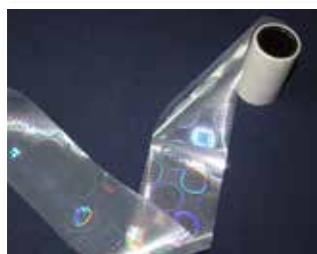
Key Features

- Compact desktop passport lamination system
- Reel-to-reel overlay foil processing
- Manual passport feeding
- Identical lamination system like in IDENTIFIER 60 and IDENTIFIER 6000 for forensically identical results



Productivity / Process Units

- Manual passport feeding
- Processing of secure overlay laminates based on reel-to-reel
- Alignment of laminate by print mark registration
- Holographic print mark registration optional
- Programmable lamination parameters (temperature and speed)
- Environment conditions: Room temperature: 23°C; +/-3°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Lamination speed: 1 - 30 mm / s
- Lamination temperature: 40 - 200 °C
- Foils on reels, max. width: 88 mm
- Foils on reels, max. diameter: 160 mm
- Throughput: Up to 120 passports / hour;
depending on process parameters

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

The IDENTIFIER 6 LAM is a semiautomatic solution for the lamination of secure overlay films to passports. Overlay films are processed on reel-to-reel basis.

To ensure accurate overlay positioning, the system uses printed registration marks (or holographic print marks) on the overlay film.

SPLS 100

Roll-off Lamination System



KEY MODULES



Lamination unit
(reel-to-reel for patches or endless laminate)



Manual booklet input
(input slot front in / front out)

UPH

120 140 160 180 200 220



FEATURES & ADVANTAGES



Key Features

- High-speed desktop passport lamination system
- Reel-to-reel overlay foil processing
- Suitable for special process parameter requirements
- Suitable for overlay film and overlay patches
- Manual passport feeding



Productivity / Process Units

- Manual passport feeding
- Processing of secure overlay laminates based on reel-to-reel
- Alignment of laminate by print mark registration
- Holographic print mark registration optional
- Programmable lamination parameters (temperature and speed)
- Adjustable lamination force
- Environment conditions: Room temperature: 23°C; +/-3°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Lamination speed: 1 - 30 mm / s
- Lamination temperature: 40 - 220 °C
- Foils on reels, max. width: 88 mm
- Foils on reels, max. diameter: 120 mm
- Throughput: Up to 200 passports / hour;
depending on process parameters

The SMLS 100 is a semiautomatic system for the lamination of secure overlay films to passports. The system is especially suitable for the processing of overlay films with extended process parameter

requirements. To ensure accurate overlay positioning, the system uses printed registration marks (or holographic print marks) on the overlay film.

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

PASSMAIL 1500

Passport Mailing System



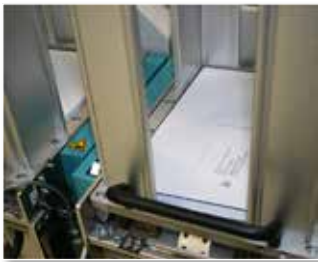
KEY MODULES

 Carrier printer	 Passport input and verification (barcode reader, vision inspection)	 Address label application
 Carrier buffer, sheet separation and alignment	 Passport affixing	 Envelope inspection
 Barcode reader 1D, 2D for online carrier-card-matching	 Passport-on-carrier verification (sensoric system or vision inspection)	 Check weigher
 Label application (hot melt process optionally available)	 Turning stations	 Output conveyor
 Carrier pre- and post-folding	 Enclosure stations	 Job separation
 Carrier sheet collecting	 Reject bin	 Envelope sorting
 Input and verification (option for stand-alone-version: magstripe, chip readers, vision inspection)	 Envelope inserting, humidification & closing	

UPH

500 750 1,000 1,250 1,500 1,750

FEATURES & ADVANTAGES



Key Features

- Fully automatic, industrial designed high-speed passport mailing system
- Highly modular system design - upgradeable even on-site
- Matching of letter and passport by optical and / or electronical identification of the documents
- Automatic feeding of enclosures and attachments
- Output sorting system, modular extendable
- Online support
- MCES / INCAPE ready



Productivity / Process Units

- Automatic passport feeding from passport buffers, up to 1,200 booklets capacity
- In-line letter printer; matching by RFID and / or optical document identification
- Up to 4 enclosure feeding units
- Supporting various letter and envelope formats
- Check-weigher unit as option
- Security locks on all module doors
- Electrical and / or optical output quality control
- Environment conditions: Room temperature: 23°C; +/-3°C
Humidity: 50%; +/-10%



Technical Data

- Passport types and formats: ID-3 MRPs; ePassports according to ICAO 9303
- Letter formats: A4; US Letter
- Envelope formats: C5
- Folding types: C - / Z- V
- Throughput: Up to 1,500 passports / hour; depending on process

Inkjet Systems

Laser Systems

Lamination

Mailing

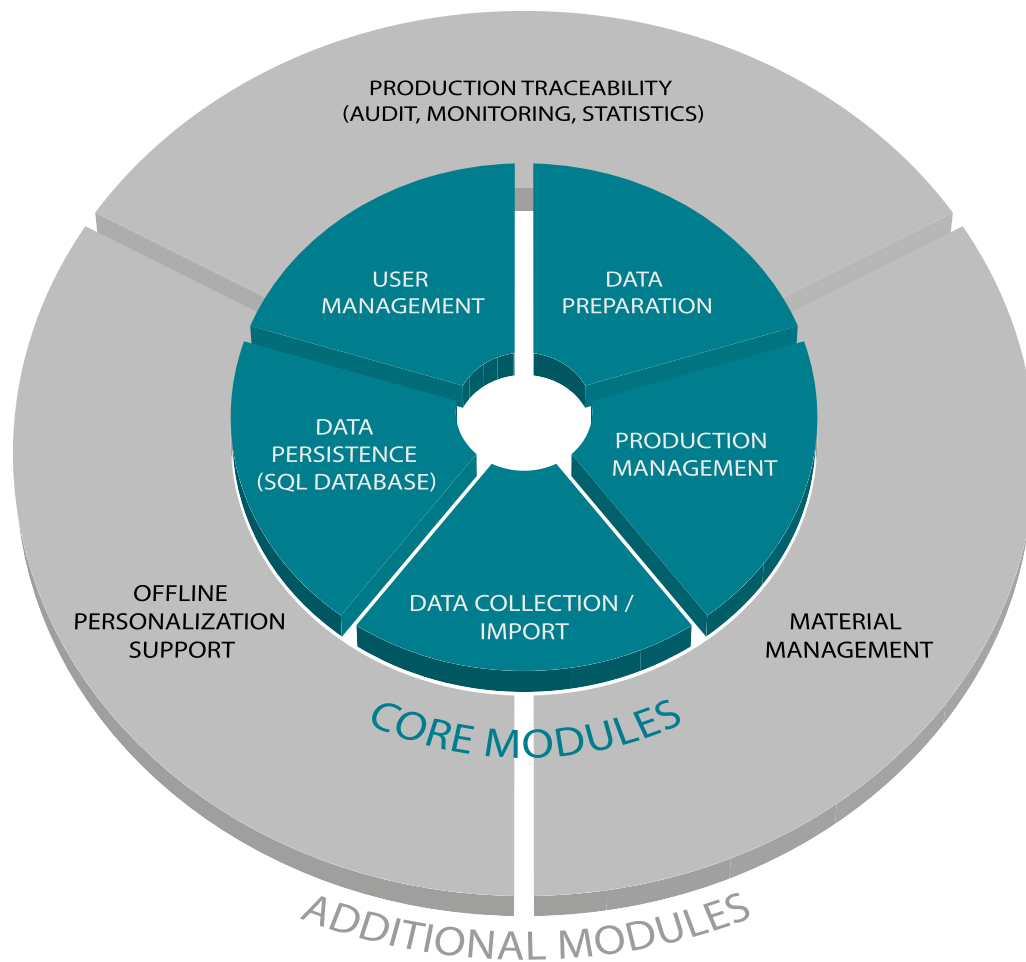
Software

Mühlbauer's PASSMAIL 1500 is a high-speed passport mailing system of modular design, which is easily configurable to all market demands in the security industry. PASSMAIL addresses the growing demand in the passport industry and enables a direct mailing of the passport to the citizens. All necessary functionalities for the high-secure

processing are integrated in this mailing system, e.g. flexible matching features, attachment of enclosures and advertisements, output quality control by optical, mechanical or electrical means. Mühlbauer's PASSMAIL 1500 can be adapted even on-site to the changing requirements, thus proving its versatility and reliability.

MB INCAPE/BASIC

Integrated Production & Personalization Management Software

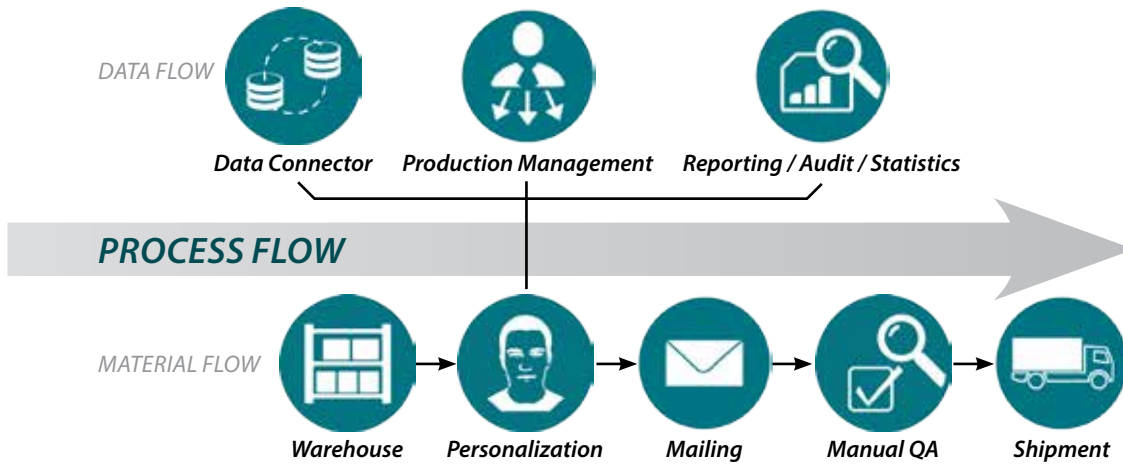


KEY FEATURES

- Streamlined web-based user interfaces with easy localization / internationalization support
- Out-of-the-box support of current Microsoft® operating systems
- Highly automated workflows with less operator interaction
- The only software solution in the world for combined data management, complete production control and material management
- Modular solution to organize the complete production of premium high-secure documents
- Covers the full production control requirements (security industry and EMV standards)

FEATURES

MB INCAPE/BASIC is Mühlbauer's PMS Solution (Production Management Software) for the personalization of electronic cards and documents (e.g. ID cards, ePassports, driver's licenses, EMV or GSM cards).



Inkjet Systems

Laser Systems

Lamination

Mailing

Software

Main Functions

- Production management
- Data management
- Seamless integration of Mühlbauer materials management

MB INCAPE/BASIC is targeting

- Cost-effective and scalable data, workflow and material management for card and document personalization
- Configurable workflow steps (personalization, quality assurance, mailing)
- Main focus on automated processing (minimum operator intervention except for personalization on machines and manual quality checking)
- Web-based operator clients:
UI is customizable (localization, internationalization, branding)
- ICAO compliant data preparation
- Scalability regarding:
 - Document types
 - Connected machines (up to 20 desktop machines)
 - Personalization offices (up to 10 sites)
- Seamless tracking of document life-cycle inside the personalization with integration of Mühlbauer materials management (MB Warehouse)
- Connection to card or document management systems (e.g. civil register): Via web service, database or file-based interface
- Direct interface to MB personalization machines (integration of 3rd party machines possible)
- Integration of MB User Management

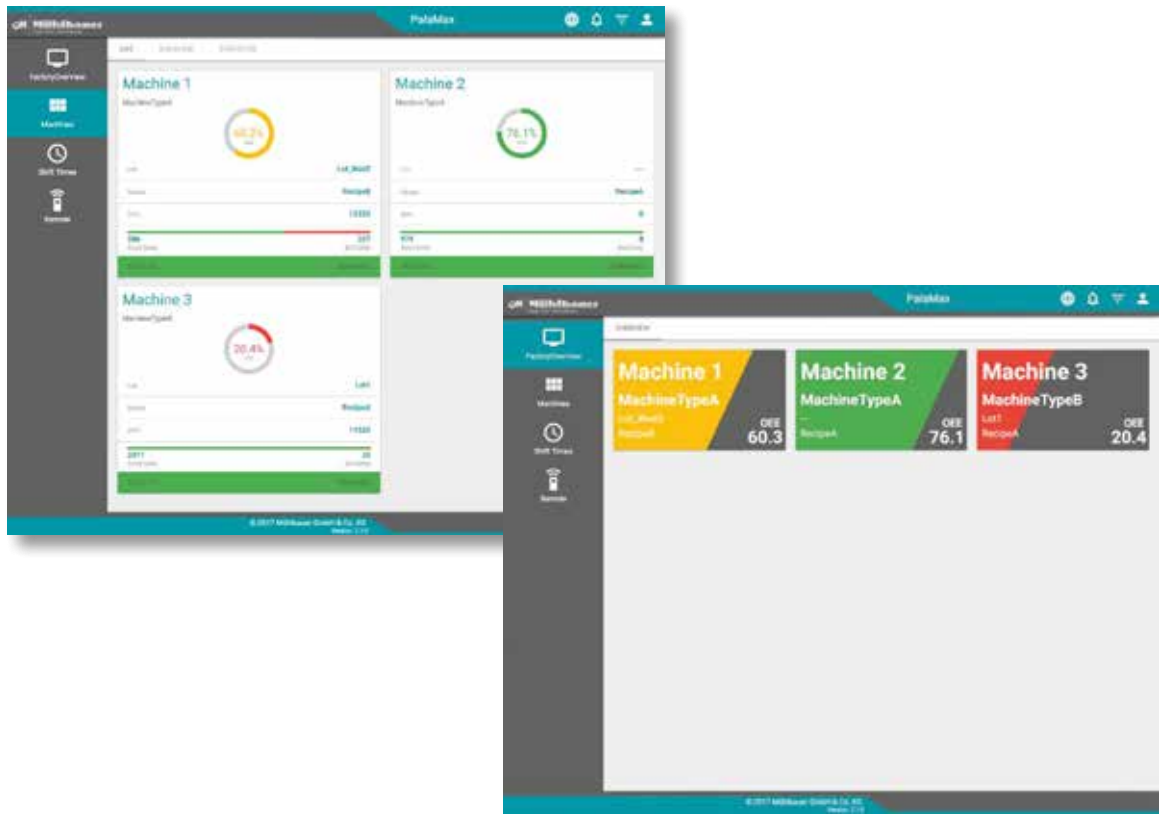
The MB INCAPE architecture consists of a modular concept to fulfil the needed scalability in all kinds of document body production steps as well as in all types of personalization characteristics (e.g. centralized and decentralized processes, various types of personalization machines, application specific data preparation scenarios etc.).

Concerning hardware and software components the scalability applies to the implementation of all kinds of ID documents, fulfils performance requirements and allows to process customer and application specific production, personalization, quality control and document delivery scenarios with highest solution flexibility.



PalaMax

Total Process Transparency



- Monitor your production in real time and generate real production statistics with your preferred KPIs
- Improve cost transparency
- Gain better data to investigate, understand and portray process flows and relationships
- Run your production with fewer staff and improved security
- Intuitive and easy to use web interface
- Responsive user interface design allows optimal presentation on any chosen device
- Data collection from the shop floor of Mühlbauer equipment and also third party equipment
- State-of-the-art big data software architecture ensures future reliability

CORE MODULES



PalaMax.Monitor

Monitors the real time performance monitoring of your machines on the shop floor, e.g. state of machine or metrics in order to react efficiently in time.



PalaMax.Stats

Statistical tool to easily analyze historical data. Select your desired time interval and get customized statistics, e.g. OEE, yield, performance and availability.

FURTHER MODULES

Palamax can be extended according to your needs.



PalaMax.Remote

Operate machines on the shop floor remotely from a control centre, allowing enormous time savings. This first step shop floor automation reduces staff requirements on the shop floor. Thus improves staff effectiveness and security due to fewer personnel.



PalaMax.Trace

Trace your product through the entire production process. This allows the comparison of manufacturing runs between each other and to determine the possible reason for a production fault.



PalaMax.Maintain

Manages the maintenance tasks on the shop floor. The aim is to switch a process from random stoppages to scheduled and preventive maintenance in order to be able to plan production down times in a deterministic manner.



PalaMax.Cost

Collects process timings and allocates machine cost to generate unit cost. Profit from a tighter cost control and make your production more profitable.



PalaMax.Recipe

Manages recipes and their versions, enables production engineering to prepare and test a repeatable factory set up. Factories can switch between products within a matter of minutes. PalaMax.Recipe can set up verification systems in a repeatable manner, providing comparable quality performance indicators.

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

PalaMax is Mühlbauer's SmartFactory implementation developed for card, tag or booklet productions, personalization factories and semiconductor backend shop floors. It is designed to set and collect process data to and from the shop floor. The collected process data is stored in a big data sets for the later processing

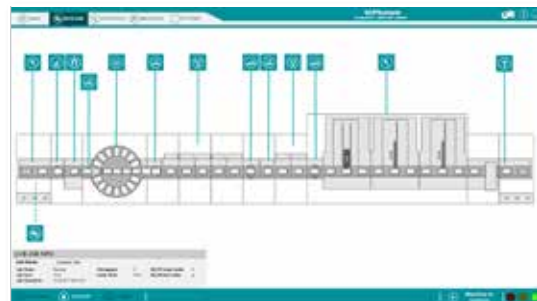
and statistical analysis. Consisting of an NOSQL database, PalaMax collects data and several modules for processing and visualization.

Job Page



To do, in Progress and Finished Queues

Machine Page



Documents in their Locations

Help Page



Documentation Display

Service Page



Chip Coding Stations

KEY FEATURES

- Intuitive and secure user interface
- Open interfaces
- Adaptable for all purposes
 - Identification documents
 - Telecommunication
 - Payment
 - Others
- Multiple data input formats
- Chip OS specific coding applications
- Configurable payment application scripts
- High-secure document and data processing
- In-line card data testing
 - Data pre-test
 - Sample post-test
 - Full test
- Customizable reporting
- Vendor independent extensions through powerful SDK with system simulator
- Highly scalable system
- Runs on all machine sizes

FEATURES & ADVANTAGES

Message Page



Info and Error Messages

ProductDesigner



Emboss Character Mappings

The User

has an intuitive and easy to use front-end interface, therefore achieving an effortless and productive control of personalization jobs, processes and reports.

The Administrator

finds an environment allowing the fine-tuning of the security and a system that fully complies with the requirements for secure document production in the ID, tele communication or the banking areas. The MCES is ideally suited to run within the restrictions established by PCI, the best practices as conventional for EMV personalization, or the regulations prescribed by credit card companies.

The Supervisor

can obtain in-depth reporting that allows the management to make informed decisions.

The Management

gains a tried and proven system, as the MCES has been in use since 1999. MCES can be adapted easily and cost-effective to new card productions. Where required this can even be done independently of Mühlbauer, the machine vendor. Therefore Mühlbauer provides its clients with the speed and price advantage over users of other equipment, as well as it empowers its clients to be able to take advantage of new opportunities in the market.

The MCES is able to support different interface methods. The Mühlbauer data acquisition handles the option of input files with a variety of different formats ranging from classic formats like Tag Length Value (TLV) coded files, through Comma Separated Lists (CSV) flat files, to XML files. The data required for the personalization process is merged with the product information within the MCES.

All personalization data can be buffered in encrypted form and deleted after use. The backend of the MCES are the Mühlbauer master system and various processing units. After the personalization finishes all stored personalization data is deleted. These processing units operate the individual personalization actions during which a large amount of logging data is generated, allowing the generating of reporting information in XML. The generated report can be transformed into any required format.

The personalization management system integrates incoming data with product definitions in a similar way as a mail merge process. Additionally the MCES is a personalization management system controlling the associated physical and electrical personalization processes. The MCES handles personalization data from a variety of different input methods, formats and applies them to the cards, regardless whether magnetic stripe, chip encoding, or one or more of the various optical

personalization processes, such as thermo-transfer printing, laser engraving, embossing or indent printing. The MCES manages all personalization processes within one software system. All this technology has to serve the purpose of helping the customer to make the best use of his investment. Therefore the system has been optimized to give every stakeholder the best value for his money.

Inkjet Systems

Laser Systems

Lamination

Mailing

Software

MB STEEL READER

Passreading Tool

MB Steel Reader is a software solution for examining electronic identification documents in combination with a full-page document reader. Use cases include:

- Inspection of travel documents
- Quality checks after personalization
- Testing of security mechanisms

MB Steel Reader uses secure communication channels to read the chip data via BAC/BAP, SAC or EAC. It supports ICAO Doc. 9303-compliant travel documents, international Driver's Licenses (IDL based on ISO/IEC 18013) and electronic Vehicle Registration Cards (eVRC), including verification of the chip data.

DOCUMENT EXAMINATION

- Verification of physical security features: visible image, IR image, UV image
- Verification of electronic security features:
 - Passive Authentication, Active Authentication and Chip Authentication
- Management of CSCA certificates and revocation lists for verification
- Comparison of holder-page information (MRZ, photo) and chip data
- Comparison of document data and corresponding record in a database (Option)

USER INTERFACE

- Visualization of information on a split screen:
 - Reading Results overview
 - Detail View of data-group content & check results
 - Document Images
- 3 forms of data representation
 - Interpreted data
 - Hexadecimal
 - Type-Length-Value (TLV)
- Possibility to store document information for future examination
- Responsive design for display on different screen formats
- Customer-specific language and design upon request

SUPPORTED DOCUMENT READERS

- Full-page document readers from Regula, Crossmatch and ARH
- PC/SC Reader

MAIN BENEFITS

- Quick document inspection
- Complete verification, including chip authentication
- Overview of visual data, MRZ and chip data

QUALITY ASSURANCE

Testing Equipment according to ICAO 9303 Requirements



PRODUCT PORTFOLIO

Your One-Stop-Shop Technology Partner

Automation

Cards & ePassports

- IC Module Production
- Card Body & Smart Card Production
- Holderpage & Booklet Production
- Card & ePassport Personalization
- Packaging & Mailing

RFID / Smart Label

- Antenna Production & Inlay Assembly
- Converting
- Personalization

Semiconductor Backend

- IC Module Production
- Carrier Tape Production
- Die Sorting

Industrial Inspection Systems

- Packaging
- Metal Working
- Special Solutions

Future Technologies

- Concentrator Solar Technology
- Flexible Solar Cell Technology
- Solar Panel Technology
- eSIM PERSONALIZATION
- LED Technology

TECURITY®

- ID Card Solution
- ePassport Solution
- IDVERSO Border Management Solution
- Driver's License & Vehicle Registration Solution
- Production Facilities

Parts & Systems

- Precision Parts
- Surface Engineering

Consulting

- Identification of Customer Requirements
- Planning & Design
- Implementation
- Ongoing Operations

Service

- Worldwide Locations for Service & Support
- Worldwide Spare Parts Supply
- Reaction Time & Full Service Contracts
- Service & Maintenance Management
- Updates / Upgrades
- Teleservice, Remote Access & Hotline (24 Hours)
- Training & Support on Different Levels
- Production & Administration Support



Mühlbauer
High Tech International

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