

mabeg





Tirelessly innovative in sheet transport.

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MABEG MSP-Series

Sheet transport lines for inspection & sorting, coding & printing, track & trace

As the world's recognised specialist in sheet handling, MABEG's MSP series offers the ideal platform for coding, printing, inspection and sorting tasks. Highest precision is combined with the reliability MABEG is known for. Reliability for tough everyday industrial use. Our worldwide and highly specialised customers confirm this.

The quality criterion for coding, printing and inspection systems, regardless of the camera or printing system used, is high-precision sheet transport. Any inaccurate or even uncontrolled movement of the sheet leads to distortions in printing or image capture. The result is that the available resolution potential cannot be fully exploited. During sheet inspection this can lead to good sheets being mistakenly identified as bad sheets due to insufficient precision in sheet transport, which causes avoidable costs. This is why the MSP series features outstanding sheet transport precision thanks to unique belt guidance and drive technology.

There is a choice of the MSP 54 for medium format up to 54 x 76 cm sheet size and the MSP 106. The MSP 106 allows sheets up to 106 cm wide to be conveyed, with maximum sheet lengths ranging from 76 to 145 cm, depending on the model. This means that not only can 3B sheets be conveyed in portrait and landscape format, but format 6 can also be covered. Both models have modular configuration options, allowing them to be optimally adapted to the task at hand.



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MABEG MSP 54

The flexible platform for small and medium sheet sizes

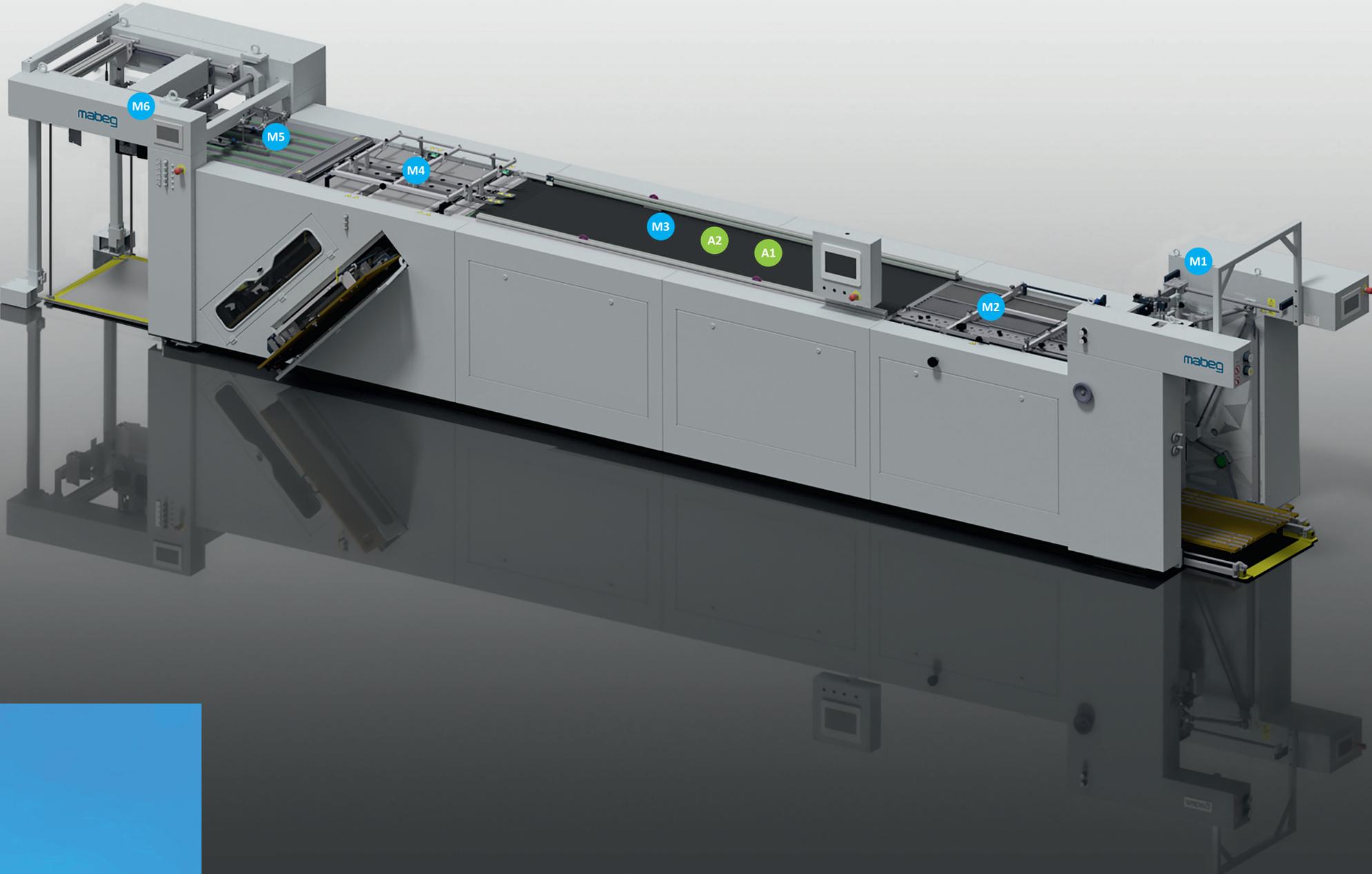
The MABEG MSP 54 has been developed for medium sheet sizes up to 54 x 76 cm and is the ideal platform for inspection and sorting tasks and coding by inkjet or laser. An F-format version with sheet sizes up to 60.5 x 76 cm is also available as an option.

The MSP 54 is modular and can be freely configured:

- For applications from above and below
- With ejection into double cassettes, e.g. for waste sheets or for job separation
- For direct connection to other presses, e.g. digital presses
- With special equipment for perforated stamp sheets



MABEG MSP 54 - 2C1S - 1100



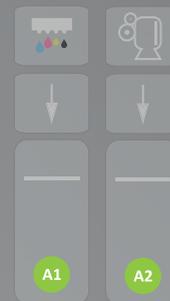
Application example #1: Line for single-sided inspection and coding tasks

Base: MSP 54 - 2C1S - 1100

- M1** Sheet feeder with original MABEG suction head ClassicFeed
- M2** Alignment table
- M3** Precision application table
- M4** Double diverter gate in two cassettes (2C)
- M5** Transfer table
- M6** Sheet stacker for accepted sheets (1S)

Applications (example typical application):

- A1** Inkjet from above (apply codes)
- A2** Inspection by camera-system from above



Brief specification

Material weight: 60 to 300 g/m² paper and light cardboard
(other values project-specific on request)

Sheet format: min. 225 x 150 mm (w x l) *(other values project-specific on request)*
max. sheet width: 540 mm *(optional F-format 605 mm)*
max. sheet length: 760 mm

Sheet run height: 1.100 mm
Stack height: 900 mm incl. palette

Speed / Capacity max. 120 m/min or max. 12.000 sheets per hour

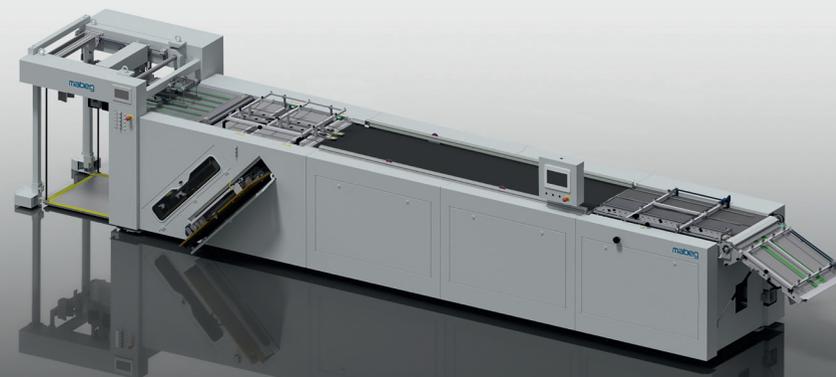
The production capacity depends on application, material, sheet size, grammage, climatic conditions, general surrounding conditions.

Technical changes reserved!

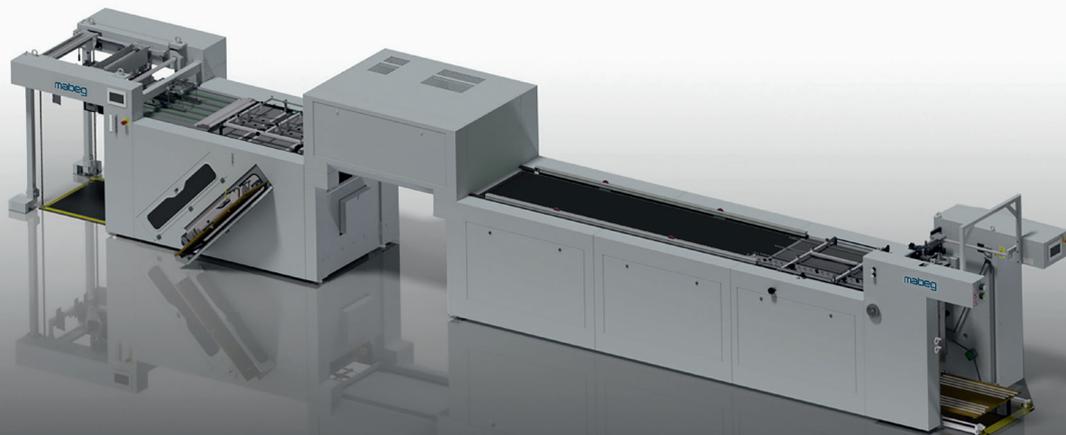




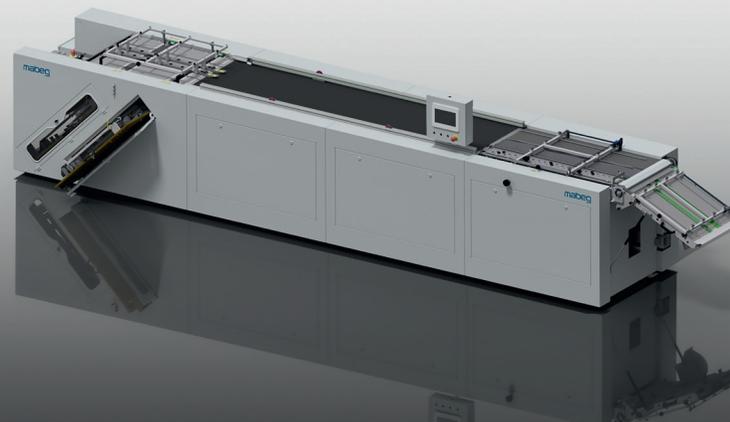
MABEG MSP 54 - 2C - 1100 M1



MABEG MSP 54 - 2C1S - 1100 - with direct linking M3



MABEG MSP 54 - TR - 2C1S - 1100 M2



MABEG MSP 54 - 2C - 1100 - with direct linking M4

Configuration examples MSP 54

As stand-alone Linie

- M1** **MSP 54 - 2C - 1100**
Short and cost-efficient line with 2 cassette compartments for sheet sorting. A sheet stacker can be retrofitted.
- M2** **MSP 54 - TR - 2C1S - 1100**
Line with optional overhead table, e.g. for double-sided sheet inspection in just one pass.

For direct linking

- M3** **MSP 54 - 2C1S - 1100 with direct linking**
The sheets are transferred directly from a preceding press machine. For example, sheets can be taken over from a digital press and verified.
- M4** **MSP 54 - 2C - 1100 with direct linking**
Naturally, all other configuration options are also available for direct connection.



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MABEG MSP 106

The universal platform for sheets of 300 up to 1060 mm width

The MSP 106 has a modular design with many configuration options for sheet alignment, precision tables, ejectors and sheet stackers. Each line is configured individually according to requirements.

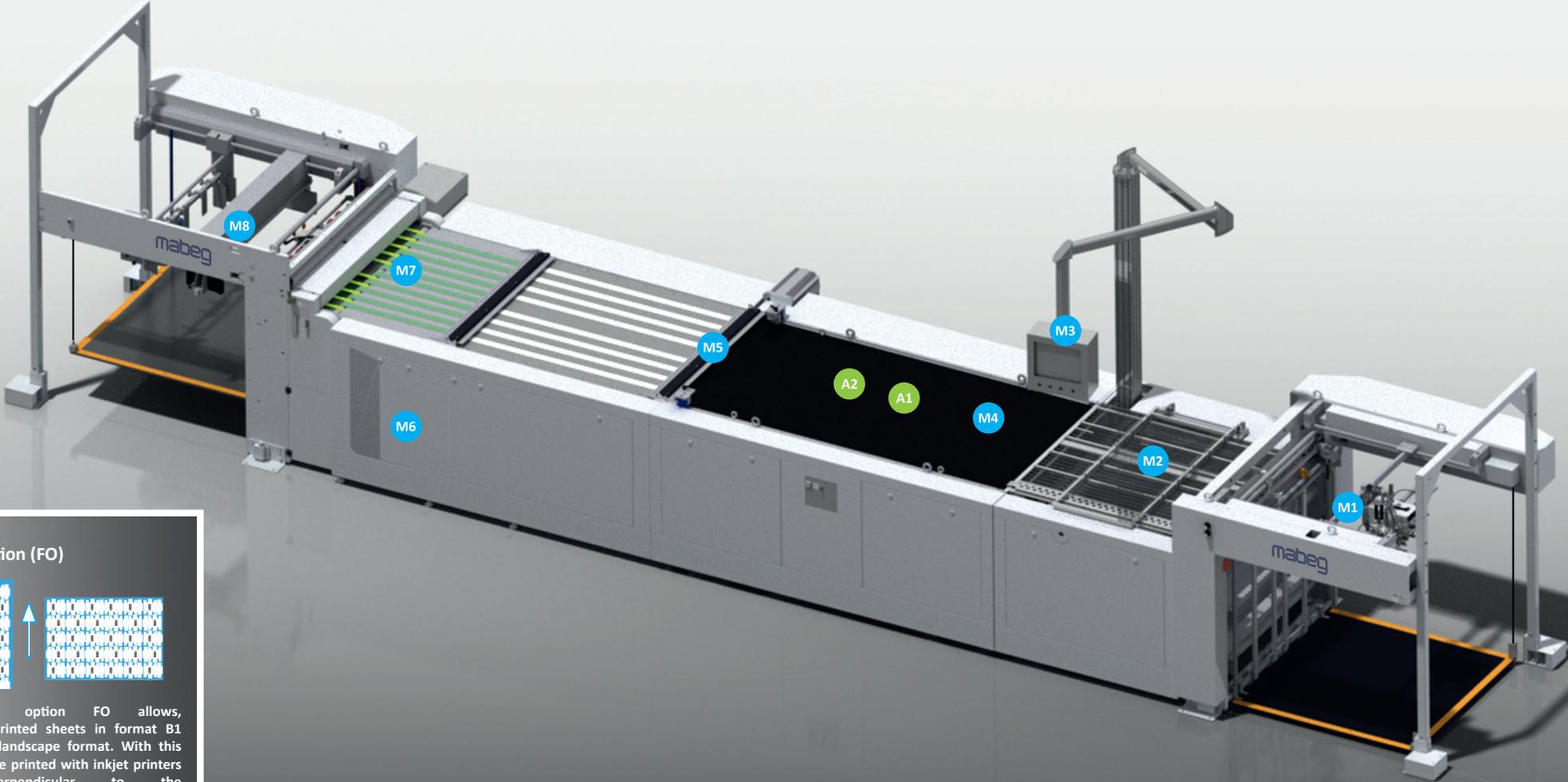
In addition to automation and NONSTOP functions, several precision tables can be integrated for a wide range of applications and several sheet stackers for sorting. High-resolution inspection and coding tasks can thus be combined as desired: for example, inspection tasks in different wavelength ranges on the top side of the sheet, the bottom side of the sheet and in transmitted light combined with ink-jet coding.

The heart of the MABEG MSP 106 is the precision application table. This has been developed and optimised for perfect sheet travel. The result is an application table of unique precision, particularly suitable for all inspection tasks as well as for coding, printing with ink jets and for fingerprint technologies.

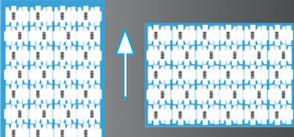
On the following pages, some typical configurations are presented. Of course, other configurations are possible - please contact us.



MABEG MSP 106 - FO106 - 1B1S - 1100



Format Option (FO)



The format option FO allows, to transport printed sheets in format B1 in portrait or landscape format. With this barcodes can be printed with inkjet printers perpendicular to the to the direction of transport. The high-precision alignment table with sheet orientation monitoring ensures precise positioning of the coding on the sheet. the exact positioning of the coding on the sheet.

Application example #1: Coding

Base: MSP 106 - FO106 - 1B1S - 1100

The configuration example shows an MSP 106 - FO106 - 1B1S - 1100 for single-sided coding with verification and ejection into a reject box. Typical application is the application of codes with directly following verification by camera systems and the ejection of sheets with faulty codes. This configuration is used, for example, for tax stamps, visa documents and other special documents.

The MSP 106 - FO106 - 1B1S - 1100 shown here has a maximum stack height of 900 mm (incl. pallet) and is configured as a line for short to medium runs. Of course, other versions of the MSP 106, e.g. with stack heights of 1,500 mm (incl. pallet), can also be used for coding.

The FO format option allows printed sheets in 3B format to be transported on edge or in landscape format. This means that barcodes can always be printed optimally perpendicular to the transport direction with inkjet printers. The high-precision alignment section with sheet orientation monitoring ensures the exact positioning of the coding on the sheet.

- M1** Sheet feeder with MABEG ClassicFeed suction head
- M2** Alignment table
- M3** HMI Touch Screen control panel
- M4** MABEG precision application table
- M5** Highly dynamic diverter gate (rejection of defective sheets)
- M6** Reject box for rejected sheets
- M7** Transfer table
- M8** Sheet stacker for good sheets (pile height: 900 mm incl. pallet)

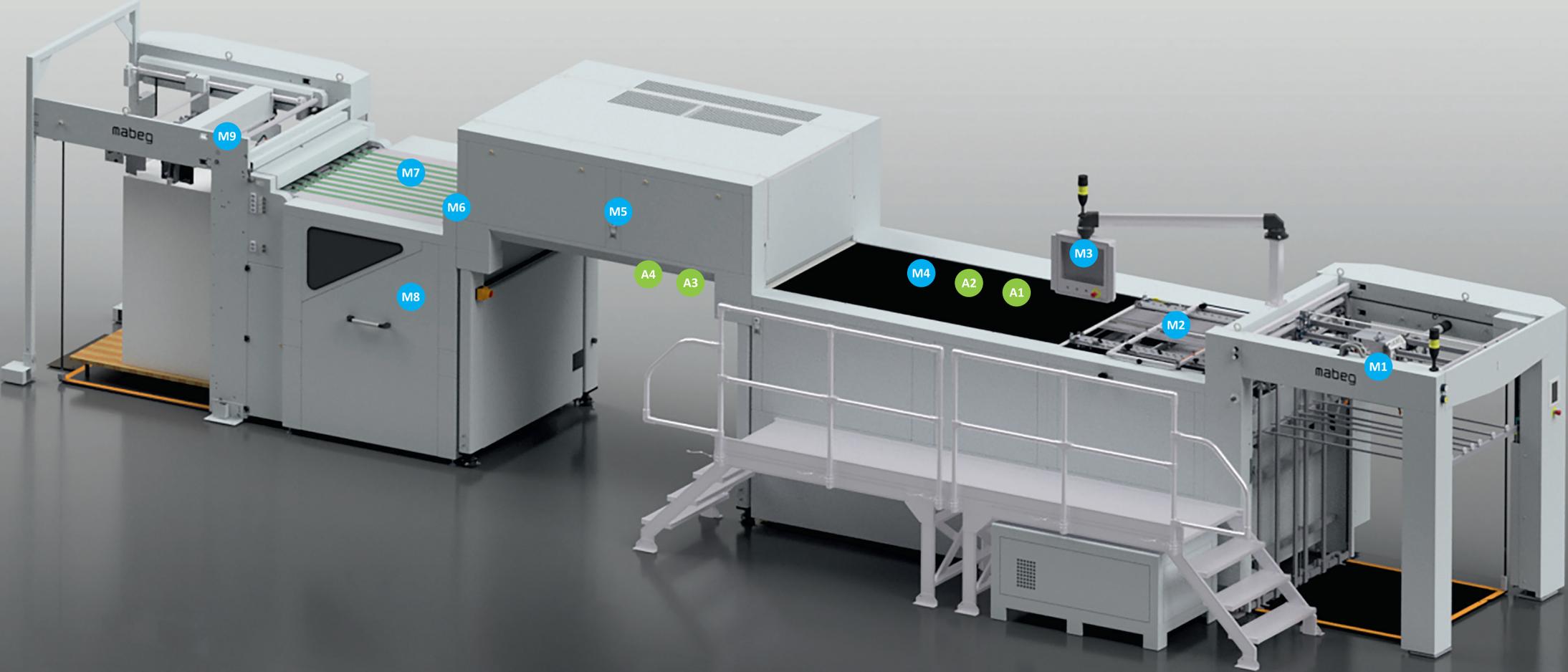


Applications (example):

- A1** Inkjet from above (apply codes)
- A2** Inspection und verification by camera systems



MABEG MSP 106 - FO106 - T24R24 - 1B1S - 1700



Application example #2: Track & Trace and serialisation

Base: MSP 106 - FO106 - T24R24 - 1B1S - 1700

This configuration is frequently used in track & trace and serialisation of luxury packaging.

Coding can be applied to the top and bottom of the sheet in just one sheet pass without turning the sheets.

The M5 module is the so-called overhead table. At this table the sheets are transported by a continuous precision belt with perfect vacuum and completely free access. This ensures easy access even to the underside of the sheet and eliminates the need to move retaining tapes when positioning the print heads.

The FO format option allows sheets in 3B format to be transported in portrait or landscape format. This means that barcodes can always be printed optimally vertical to the transport direction with inkjet printers. The high-precision alignment section with sheet orientation monitoring ensures the exact positioning of the coding on the sheet.

Today, modern fingerprint or track & trace systems are often used for further product security. Due to its high transport precision, the MSP series is the ideal platform for fingerprint and track & trace systems. These achieve the highest read rates on the MSP, so that no unnecessary waste is produced.

- M1** Sheet feeder with original MABEG suction head ClassicFeed
- M2** Alignment table
- M3** Touch screen operation panel
- M4** MABEG precision application table (T)
- M5** Second MABEG precision application table for reverse side applications (R)
- M6** Diverter gate (ejection of faulty codes)
- M7** Transfer table
- M8** Waste box for rejected sheets (1B)
- M9** Sheet stacker for accepted sheets (stack height: 1.500 mm including palette) (1S)



Applications (example):

- A1** Inkjet from above (apply codes)
- A2** Inspection by camera systems from above
- A3** Inkjet from below (apply codes)
- A4** Inspection by camera systems from below



MABEG MSP RS 106 - TLI - T24R24 - L15 - 3S - 1700



Application example #3: Sorting line for banknote printing sheets

Basis: MSP 106 - TLI - T24R24 - L15 - 3S - 1700

The tasks of a sorting line for banknote print sheets are diverse and complex. The configuration shows an implemented example of an MSP with sheet feeder with manual non-stop, with inspection options for transmitted light inspection, sheet top and bottom, and with 3 sheet stackers.

Sheet alignment is followed by the TLI transmitted light inspection module. Here watermarks are typically inspected in the UV wavelength range. Next comes the inspection table for checking sheets from above, followed by the overhead table for checking the reverse side of the sheet. At the overhead table the printed sheets are fully accessible so that no area needs to be excluded from inspection. The camera systems, typically for the visible and infra-red wavelength ranges, are mounted directly on the inspection tables.

The 3 sheet stackers can either be used for sorting according to different criteria, or 2 sheet stackers can be used for non-stop operation and the third for rejecting defective sheets. The belt guide to all sheet stackers is designed in such a way that code readers can be installed which record the sheet number and thus enable a seamless track & trace.

- M1** Sheet feeder with original MABEG suction head ClassicFeed
- M2** Alignment table
- M3** Touch screen operation panel
- M4** Transmitting light unit (TLI)
- M5** MABEG precision application table (T)
- M6** Second MABEG precision application table for reverse side applications (R)
- M7** Additional transfer table (L)
- M8** Two diverter gates (ejection of faulty sheets)
- M9** Transfer table
- M10** Two sheet stackers for rejected sheets (stack height: 1.100 mm including palette) (3S)
- M11** Sheet stacker for accepted sheets (stack height: 1.500 mm including palette)

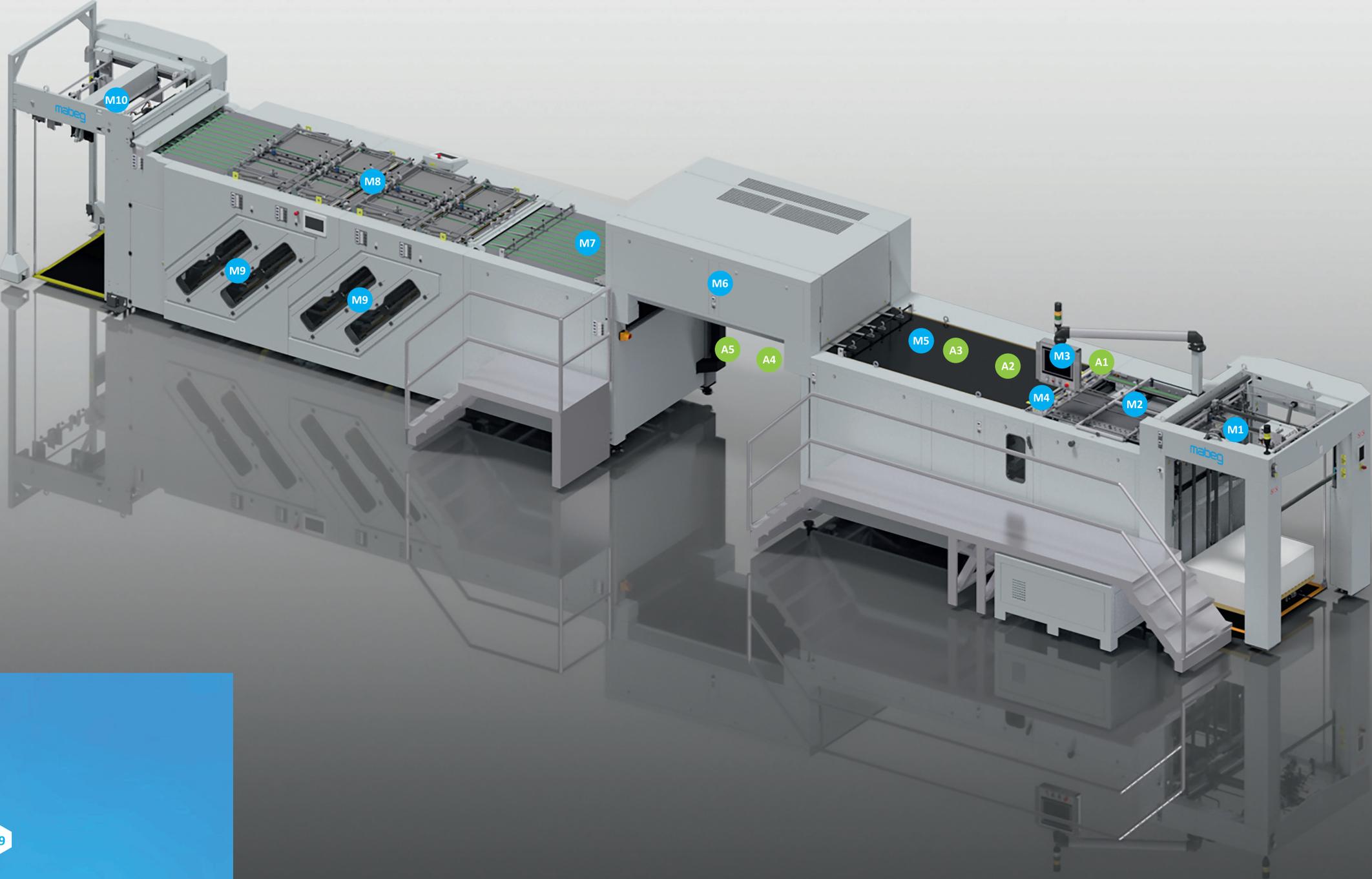


Application (example):

- A1** Transmitted light inspection (e.g. water mark)
- A2** Inkjet from above (apply codes)
- A3** Inspection by camera systems from above
- A4** Inkjet from below (apply codes)
- A5** Inspection by camera systems from below



MABEG MSP 106 - TLI - T24R24 - L15 - 4C1S - 1700



Application example #4: Banknote with different sorting criteria

Base: MSP 106 - TLI - T24R24 - L15 - 4C1S - 1700

Double cassette modules can be used for sorting according to different criteria. This allows (bad) sheets to be sorted and ejected according to different characteristics. Due to the modularity, different numbers of double cassette modules can be used. Up to 8 cassettes can be designed as standard.

Like the sheet stackers, the cassette modules are equipped with sheet profiling and sheet brakes, making them ideal for high sorting speeds.

Of course, the line can also be equipped with a second sheet stacker to enable optional non-stop operation.

- M1** Sheet feeder with original MABEG suction head ClassicFeed
- M2** Alignment table
- M3** Touch screen operation panel
- M4** Transmitting light unit (TLI)
- M5** MABEG precision application table (T)
- M6** Second MABEG precision application table for reverse side applications (R)
- M7** Transfer table
- M8** Highly dynamic diverter gates
- M9** Double cassette modules (4C)
- M10** Sheet stacker for accepted sheets (stack height: 1.500 mm including palette) (1S)

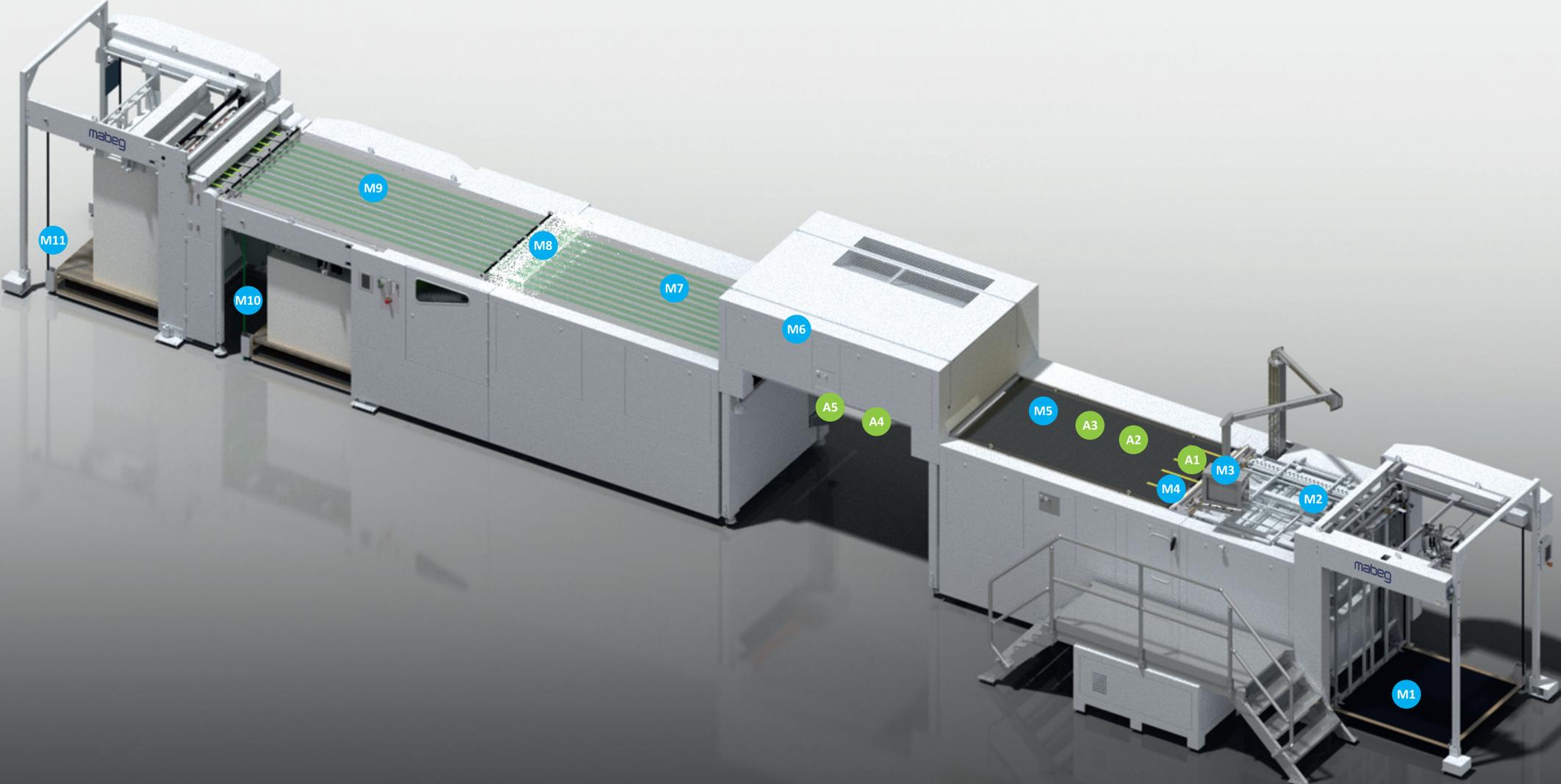


Applications (example):

- A1** Transmitted light inspection (e.g. water mark)
- A2** Inkjet from above (apply codes)
- A3** Inspection by camera systems from above
- A4** Inkjet from below (apply codes)
- A5** Inspection by camera systems from below



MABEG MSP 106 - FO106 - TLI - T24R24 - L15 - 2S - 1700



Application example #5: Sorting line for paper mills

Base: MSP 106 - FO120 - T24R24 - L25- 2S - 1700

This MSP 106 was specially designed for resorting in paper mills. The MSP 106 allows the inspection of turned corners and watermarks in the so-called transmitted light module TLI. The top and bottom sides of the sheet are then inspected in a single pass without sheet reversal. Depending on the camera systems installed, security features can also be inspected in the UV or IR wavelength range.

An additional transfer table is integrated after the overhead table. This increases the distance between the last camera and the sheet diverter, to allow the inspection system sufficient time to analyse the sheet.

The FO format option allows sheet sizes of up to 1,060 x 1,200 mm (w x l) to be processed.

- M1** Sheet feeder with original MABEG suction head ClassicFeed
- M2** Alignment table
- M3** Touch screen operation panel
- M4** Transmitting light unit (TLI)
- M5** MABEG precision application table (T)
- M6** Second MABEG precision application table for reverse side applications (R)
- M7** Additional transfer table (L)
- M8** Diverter gate (ejection of faulty sheets)
- M9** Transfer table
- M10** Sheet stacker for rejected sheets (stack height: 1.100 mm including palette) (2S)
- M11** Sheet stacker for accepted sheets (stack height: 1.500 mm including palette)

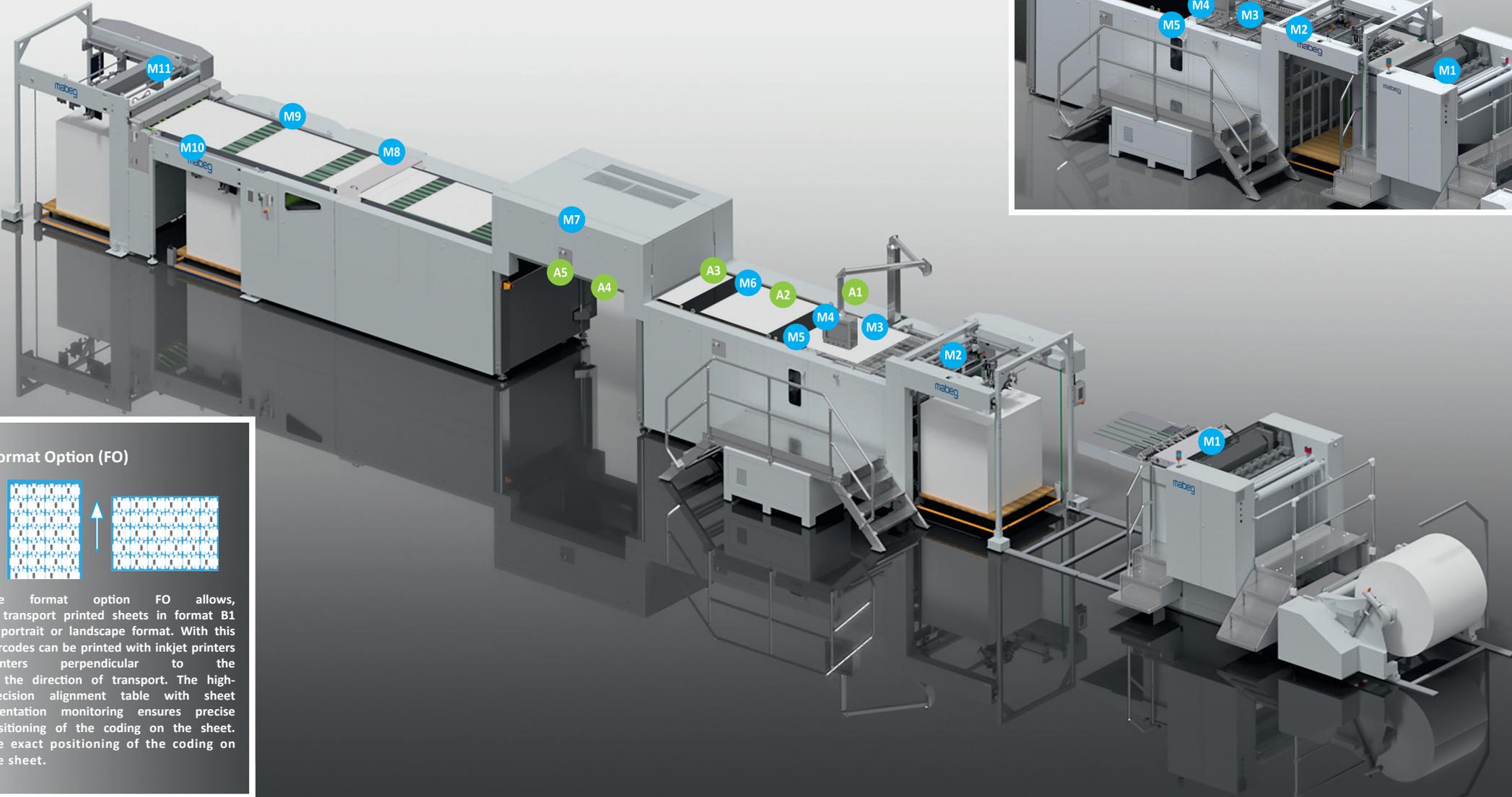


Applications (example):

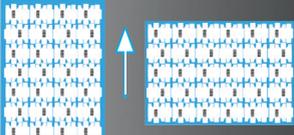
- A1** Transmitted light inspection (e.g. water mark)
- A2** Inkjet from above (apply codes)
- A3** Inspection by camera systems from above
- A4** Inkjet from below (apply codes)
- A5** Inspection by camera systems from below



MABEG MSP RS 106 - FO106 - T24R24 - L25 - 2S - 1700



Format Option (FO)



The format option FO allows, to transport printed sheets in format B1 in portrait or landscape format. With this barcodes can be printed with inkjet printers perpendicular to the to the direction of transport. The high-precision alignment table with sheet orientation monitoring ensures precise positioning of the coding on the sheet. the exact positioning of the coding on the sheet.

Application example #6: Sorting line for paper mills with ReelSheeter RS

Base: MSP 106 - FO106 - T24R24 - L25 - 2S - 1700

Another configuration option for the MSP 106 is to combine it with the MABEG RS 106 ReelSheeter to create a unique combination of a proven reel sheeter with a sheet transport system specially developed for high-resolution inspection.

The ReelSheeter can be moved out of the sheet feeder on a rail system embedded in the floor.

The line can then be used to inspect sheetfed products.

A typical changeover from processing reel stock to sheet stock takes about 6 - 10 minutes.

This means that the entire line is characterised not only by the simplest adjustability and best accessibility, but also by the highest flexibility.

The ReelSheeter can be optionally equipped with a camera-based register cutting system.

This allows sheets to be cut in register not only according to optical crop marks but also according to watermarks.

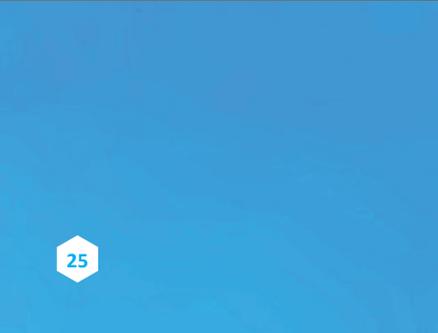
- M1** ReelSheeter RS 106 with register cut option
- M2** Sheet feeder with original MABEG suction head ClassicFeed
- M3** Alignment table
- M4** Touch screen operation panel
- M5** Transmitting light unit (TLI)
- M6** MABEG precision application table (T)
- M7** Second MABEG precision application table for reverse side applications (R)
- M8** Diverter gate (ejection of faulty sheets)
- M9** Transfer table
- M10** Sheet stacker for rejected sheets (stack height: 1.100 mm including palette) (2S)
- M11** Sheet stacker for accepted sheets (stack height: 1.500 mm including palette)



Applications (example):

- A1** Transmitted light inspection (e.g. water mark)
- A2** Inkjet from above (apply codes)
- A3** Inspection by camera-systems from above
- A4** Inkjet from below (apply codes)
- A5** Inspection by camera-systems from below





The MSP series for OEM applications

You have a high-tech application with its own sheet transport, but the sheet feeder and the sheet stacker are missing?

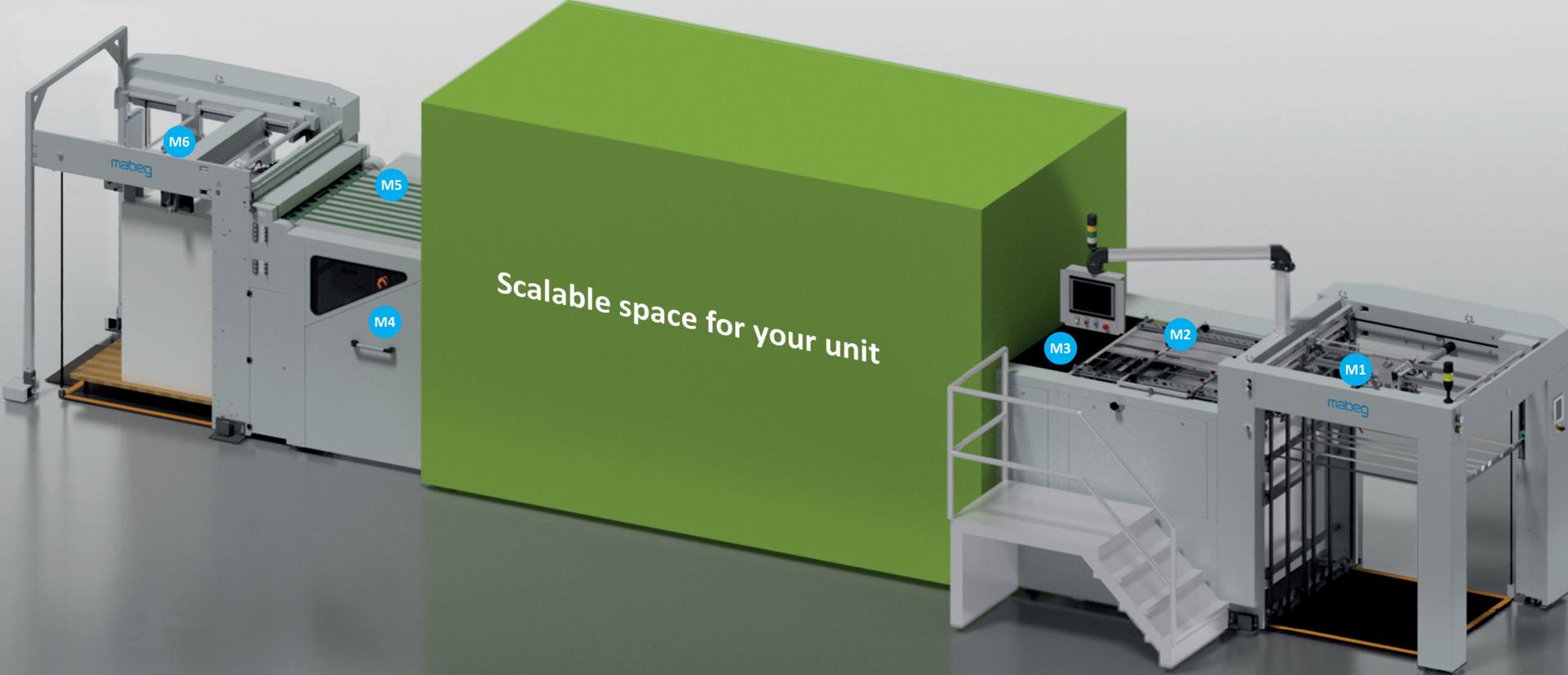
The MABEG MSP series is also the industry-standard series solution for OEM applications, e.g. for new industrial digital presses. The OEM customer can concentrate fully on his innovative printing technology and the development of the printing module, while the proven and established MSP series takes over the sheet transport. The customer's own module - shown in green - can be based on a MABEG precision table or include a sheet transport developed by the customer. In the case of a customised sheet transport system, the MSP series takes care of precise sheet separation and infeed, sheet alignment and sheet stacking, with sorting if required. The open and flexible interfaces mean that only a small amount of integration work is required.

Another advantage of this concept is the globally recognised brand name MABEG, which stands for reliability and robustness. This can facilitate the market introduction of new systems in a conservative industry and accelerate acceptance by end customers.

Shown on the left is an example based on an MSP 54

- M1** Sheet feeder with original MABEG suction head ClassicFeed
- M2** Alignment table
- M3** MABEG precision application table (**T**)
- M4** Double diverter gate into two cassettes (**2C**)
- M5** Transfer table
- M6** Sheet stacker for accepted sheets (**1S**)





The MSP series for OEM applications

Lines for the integration of customer-specific modules

Of course, the entire modularity of the MSP lines is available: sheet feeders are available in various automation levels and, if necessary, with Non-stop equipment. The sheets can be deposited in several stackers or cassette modules so that direct sorting by job can be carried out. The integration of a ReelSheeter is also possible. This allows reel stock to be processed on the sheetfed press, thus delivering a sheet stack that can be further processed in a single process step.

The example on the left shows an MSP 106 for a max. sheet size of 1060 x 1060 mm with a simple ejector, e.g. in the event that an inline sheet detection is used in the printing module.

The MSP 106 can be supplied for sheet sizes of 1060 x 760 mm, 1060 x 830 mm, 1060 x 1060 mm, 1060 x 1200 mm; 1060 x 1450 mm.

- M1 Sheet feeder with original MABEG suction head ClassicFeed
- M2 Alignment table
- M3 MABEG precision application table (T)
- M4 Wastebox for rejected sheets (1B)
- M5 Transfer table
- M6 Sheet stacker for accepted sheets (1S)



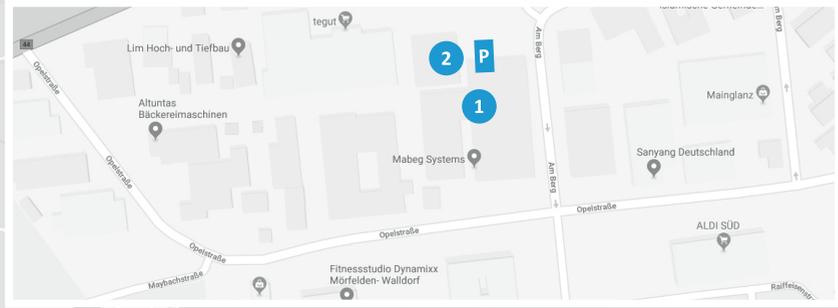
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How to find us

Our company location Mörfelden-Walldorf / Germany (industrial area South / district Mörfelden) is located near Frankfurt am Main in the immediate vicinity of Frankfurt International Airport.

You will reach us

- via the A5, exit Langen / Mörfelden
- via the A67 from the north, exit Rüsselsheim Ost
- via the A67 from the south, exit Groß Gerau



Finances
Management
Construction
Human Resources
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Purchasing
Assembly
Service
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