

Configuration/Transfer

■ Importing jobs

1. Press  ►  ►  ►  ► .
2. Select jobs to be imported to the printer.
3. Press  to confirm.

The selected jobs are imported to the printer.



If the printer contains a job whose name is the same as that of a job imported, additional confirmation is required.

■ Exporting jobs

1. Press  ►  ►  ►  ► .
2. Select jobs to be exported to a USB memory device.
3. Press  to confirm.

The selected jobs are exported to the USB memory device.

▣ Importing/exporting printer settings

A printer settings file contains:

- printer settings that are available in the  menus
- the user database



*Printer setting files are in *.exs format. Files in other formats are not visible.*

By default, printer settings are stored in the exports_MI4500/settings folder on a USB memory device.

■ Importing printer settings

1. Press  ►  ►  ►  ► .
2. Select settings file to be imported to the printer.
3. Press  to confirm.

The printer settings, together with the user database, are imported to the printer.

■ Exporting printer settings

1. Press  ►  ►  ►  ► .
2. Press  to confirm.

The printer settings, together with the user database, are exported to a USB memory device.

■ Importing/exporting a user database

The user database is automatically saved together with the printer settings and is a part of the settings file.

To import or export a user database, follow procedure in the section entitled “Importing printer settings” or “Exporting printer settings”.



After importing the printer settings, the user database in the imported settings file replaces the existing user database.

□ Importing/exporting other files

The following files can be imported/exported:

-  /  fonts in *.ttf, *.bdf formats
-  /  images in *.png, *.bmp formats
-  /  text files in *.txt format
-  /  global variables in *.ecn (counter), *.esc (shiftcode), *.eca (calendar) formats
-  printer history in *.exh format



Printer history can only be exported to a USB memory device. Printer history cannot be imported to the printer.



By default, files are stored in the following folders on a USB memory device:

- fonts in the exports_MI4500/fonts folder
- images in the exports_MI4500/images folder
- text files in the exports_MI4500/texts folder
- global variables in the exports_MI4500/variables folder
- history in the exports_MI4500/history folder

Files in other formats than those listed above are not visible.

Configuration/Transfer

■ Importing other files

1. Press  ►  ►  ►  ► .

2. Select the type of file you wish to import:



fonts



images



text files



global variables

3. Select the files that contain data that you wish to import to the printer

4. Press  to confirm.

The selected files are imported to the printer.



If the printer contains the same file as the file imported, then an additional confirmation is required.

■ Exporting other files

1. Press  ►  ►  ►  ► .

2. Select the type of file you wish to export:



fonts



images



text files



global variables



printer history

3. Select the files that contain data that you wish to export to the USB memory device.

4. Press  to confirm.

The selected files are exported to the USB memory device.



■ Importing/exporting all printer data

This function is used to make a full backup copy of all printer data, consisting of:

- jobs
- printer settings, including the user database
- fonts
- images
- text files
- global variables
- printer history



*The files that contain all printer data are in *.exa format. Files in other formats are not visible.*

By default, printer data files are stored in the exports_MI4500/all folder on a USB memory device.

■ Importing all printer data

1. Press  ►  ►  ►  ► .
2. Select a printer data file that you wish to import to the printer.
3. Press  to confirm.

A full copy of all printer data is imported to the printer.



The imported printer data file replaces all existing printer data.

■ Exporting all printer data

1. Press  ►  ►  ►  ► .
2. Press  to confirm.

A full backup copy of all printer data is exported to a USB memory device.

Configuration/Transfer

■ Updating software

This function is used to update the system software to a newer version.



To determine the current version of the system software:

Press  ►  ►  ► .

It is necessary to obtain from Markem-Imaje a software update package, which must be loaded on an approved USB memory device.



Before loading the update package, make a backup copy of all printer data, which includes jobs, fonts, settings, etc.

The updating procedure must not be interrupted. Otherwise the printer may get damaged.

1. Make a backup copy of all printer data following the procedure described in the section entitled "Exporting all printer data" above.
2. Press  ►  ►  ►  or  ► .

Update package files have the extension *.miu.



The function is active when a memory device containing an update package is connected to the USB connector. The update package file must be stored in the main folder. It must not be stored in any of the subfolders.

3. Select an update package file.
4. Press  to confirm.
5. Follow the prompts on the screen.

The printer restarts as part of the updating procedure.

The software version window is displayed on the screen when the procedure is completed.

6. Press  to complete the procedure and resume regular operation.



After the update, the interface language is set to English.

The interface language can be changed by pressing:



■ Recovering the system (Factory default)

The recovery function sets all printer settings to the default values.



This function is available to **Administrator**-type users .

Recovering the default settings also deletes all jobs, the user database, user fonts, printer history, and imported files such as images and text files



It is recommended that a backup copy of all printer data be made before following the system recovery procedure, which can be found in the section entitled "Exporting all printer data" above.

The recovery procedure must not be interrupted. Otherwise the printer may get damaged.

1. Press  ►  ► .
2. Press  to confirm.

The default settings of the printer are restored.

The interface language is switched over to English.



If a backup copy of all printer data was made before the system recovery procedure was followed, import the printer data to the printer according to the description given in the section entitled "Importing all printer data".

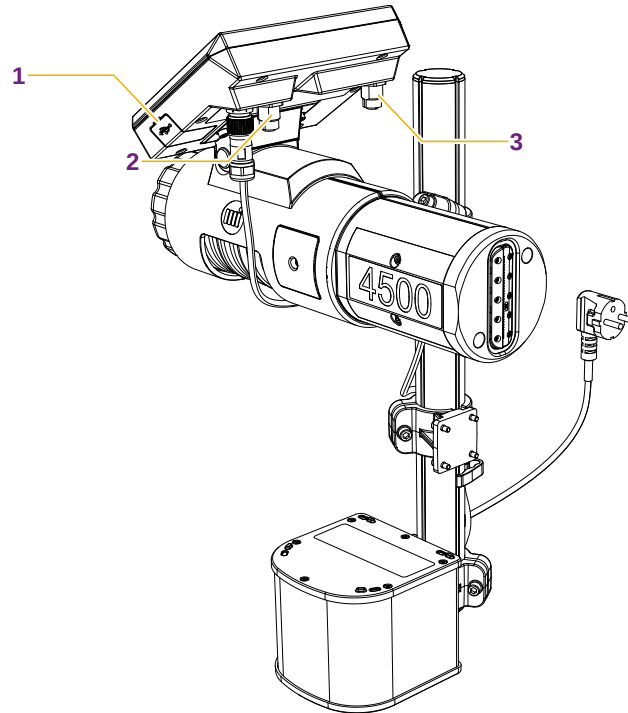
The other import procedures are described in the sections entitled "Importing jobs", "Importing printer settings" and "Importing other files".

External connections

External connections

■ Overview of external connectors

The printer can be configured to communicate with outputs via an external interface and connectors at the back of the control unit.



- USB connector for USB memory device to transfer data (1)
- black M12 connector for status beacon (2)
- red M12 connector for conveyor stoppage output (3)

Immediately after connecting these outputs to the control unit, the devices are active and operational. No further configuration is needed.

■ USB memory device

Data can be imported to or exported from the printer via an approved USB memory device connected to the USB connector (1) on the side of the control unit.



Details about importing and exporting data can be found in the section entitled "Importing/exporting data".

■ Description of the USB connector

The USB connector supplies 200 mA of current. The printer may not recognize USB memory devices that draw higher current.

To be recognized by the printer, a USB memory device connected to the USB connector must be formatted to FAT or FAT32.

■ Status beacon

The status beacon is an external signaler of printer status connected to the black M12 connector (2) on the back of the control unit.

The beacon uses color-coded lights representing the printer status indicated on the main screen, which allows the printer status to be monitored from a greater distance.

■ Lights colors

Markem-Imaje offers two types of status beacons, differing in lights colors:

- **RYG:** red, yellow, green
- **BYG:** blue, yellow, green

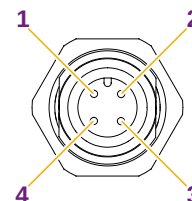
Lights colors have the following meaning:

- **Red:** a fault has occurred that makes printing impossible
- **Blue:** a fault has occurred that makes printing impossible
- **Yellow:** a warning has occurred that does not pause printing but may require user intervention
- **Green:** the printer is printing

External connections

■ Description of the black female M12 connector

- 1 Printer is printing; open collector, max. 40 mA
- 2 Fault; open collector, max. 40 mA
- 3 +24V DC (power supply)
- 4 Warning; open collector, max. 40 mA

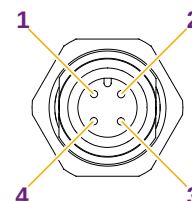


■ Conveyor stoppage output

A factory conveyor can be connected to the red M12 connector (3) on the back of the control unit. If a fault occurs that makes printing impossible, an output signal stops the factory conveyor.

■ Description of the red female M12 connector

- 1 unused
- 2 +24V DC (power supply)
- 3 Conveyor stoppage; open collector, max. 100 mA
- 4 unused



*The coil of an appropriate relay that controls operation of the factory conveyor should be connected between pins 2 and 3 of the **M12** connector.*

Technical **Specifications**

Technical Specifications

■ Physical description

Dimensions	□ Printer in working position (with no holder and power pack): 176.1 (W) x 337.4 (D) x 225 (H) (mm) □ Ink bottle: 0.5 or 1 liter □ Control unit: 176.1 (W) x 55 (D) x 132.1 (H) (mm) LCD Display: 5.7"/144.8 mm diagonal □ Nozzle diameter: 150 µm or 170 µm depending on head
Weight	□ Complete printer without ink bottle: approx. 4.5 kg (9,92 lbs) □ Ink bottle: approx. 0.5 kg (0.5 liter) or approx. 1.0 kg (1 liter)

■ Performance specification

Printing	□ On porous substrates □ Up to 100 characters per print □ 1 line of text for 7N heads; 1 or 2 lines of text for 16N heads □ Maximum print height: - 13 mm (for 7N/13 heads) - 24 mm (for 7N/24 heads) - 29 mm (for 16N/29 heads) - 56 mm (for 16N/56 heads) □ 7, 16 dots high fonts can be chosen □ Many TrueType fonts can be chosen □ Many types of field (characters, graphics, the date, time, counters) can be printed
Maximum speed	□ 60 m/min (2362 inch/min)
Number of heads	□ 1 head with 7 or 16 nozzles
Types of head	□ 7 nozzles, with the diameter of 150 µm each, spaced at 1.8 mm (7N/13) □ 7 nozzles, with the diameter of 170 µm each, spaced at 3.6 mm (7N/24) □ 16 nozzles, with the diameter of 150 µm each, spaced at 1.8 mm (16N/29) □ 16 nozzles, with the diameter of 170 µm each, spaced at 3.6 mm (16N/56)
Position during printing	□ any, except for "from the bottom"

Technical Specifications

■ Connectivity

- ☐ USB; max. current 200 mA
- ☐ status beacon output
- ☐ conveyor stoppage output

Advanced Consumable Management (ACM) system parameters

- ☐ Operating Frequency: 13.56 MHz
- ☐ RF Output Power: -65.7dBm +/-1dBm

■ Various functions

Modes of operation available

- ☐ Printing can start automatically

Operating parameters

- ☐ Automating setting up of a new head

■ Power supply

- ☐ 100-240 VAC, 50-60 Hz, 0,54-0,26 A

■ Inks

- ☐ water-based
- ☐ for more details see the data sheets for the inks available

■ Working conditions

Working temperature

- ☐ from 5 to 45°C (41° to 113°F)

Humidity

- ☐ from 10 to 90% without condensation

Ingress protection class

- ☐ IP54

Maximum altitude (above sea level)

- ☐ 2000 m

Technical Specifications

■ Installation conditions

Working position ☐ any, except for "from the bottom"

■ Specifications

Fonts ☐ Latin, Arabic, Cyrillic, Chinese, Japanese, Thai, etc
☐ additional fonts can be installed; in *.ttf, *.bdf formats

Time markers ☐ Hour, minute, second
☐ Day, month, year, the day of week
☐ Calendar, shiftcode

Counters ☐ Incremental, decremental
☐ Local, global

Distance from an object to the head ☐ 2 - 20 mm

■ 4500 - User Manual - Revision

. The index A in the document reference number corresponds to the first version of the manual.

. The document index changes each time the document is updated.

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