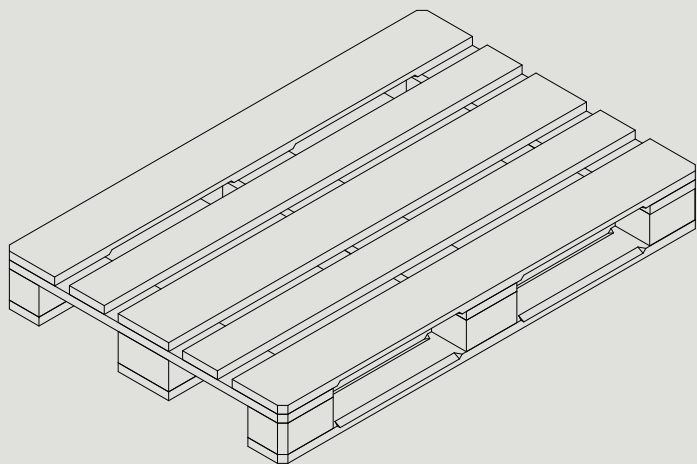
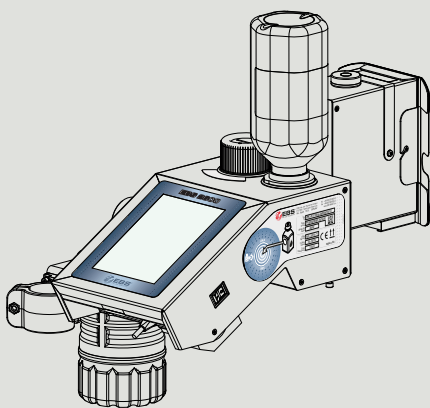


Hi-Res

EBS-2600 USER MANUAL

Industrial DROP ON DEMAND Printers
Original Instructions



Part 1 of 3

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CHAPTER 1

GENERAL INFORMATION

Dear User,



Before using the **Hi-Res** EBS-2600 printer, please read carefully the documents attached to the printer, especially the Safety Manual and the material safety data sheets (MSDSs) of consumables in use.



This User Manual should be easily accessible and ready to use whenever the need to do so arises.

This version of the document includes most of the modifications implemented to the **EBS** printers (manufactured by **EBS Ink Jet Systeme GmbH**) up to version **1.03.21** of the system and the descriptions contained herein correspond to the printers on which the system in this version is installed.

The scope of delivery depends on the order, therefore it may happen that the actual equipment and functions of your printing system differ slightly from some descriptions or illustrations. As we need to keep pace with continual technical advancement and our customers' individual requirements we have to reserve the right to introduce changes in the design, system version and technical solutions. Therefore, no data, illustrations and descriptions contained in this User Manual shall make grounds for any claims. Should your printer be provided with the details of the equipment or software that are not illustrated or described in this User Manual or should you have additional queries after having read this Manual, please contact an authorized representative of **EBS Ink Jet Systeme GmbH** for more information.

The manufacturer shall not be liable for any damage caused to the printer by improper handling or operation, that is the failure to follow this User Manual, and by the consequences of editorial or publishing errors in the Manual.

The application and use of products are beyond our control and thus you apply and use the products exclusively on your own responsibility.

Original Instructions.

The User Manual in the Polish and English languages are the original instructions. In case of disputes, these language versions shall prevail. The instructions in other languages are translation of the original instructions.

1. GENERAL INFORMATION

The following symbols are used in the manual:



Additional information on a given subject. A supplement or a reference to the text where more details can be found.



*An important note, tip, piece of information on safety.
It is advisable to strictly follow the tips.*





A list of tools, accessories and spare parts necessary for carrying out a given maintenance or service procedure.

This User Manual applies to the **Hi-Res** EBS-2600 printer.

Regardless of the language version of the Manual, examples of printer screen dumps are presented in English.

Additional characteristics (bold face, italics, changed color) are applied to the document to highlight such items as:

- the printer name, access level or any other important information (e.g. **Hi-Res** EBS-2600),
- a part number in drawings (e.g. **3**),
- a message available in the printer interface (e.g. **an error message**),
- a reference to another section or drawing (e.g. see "**1.1. Application**"),
-  - to press an icon or a function key,
-  - to wait before a successive operation can be carried out.

1.1. APPLICATION

The **Hi-Res** EBS-2600 printers make firm and clear prints on:

- paper and cardboard,
- plastics,
- fabric,
- leather and leatherette,
- wood and wood-like products, e.g. Euro-pallets,
- glass and ceramic products,
- metal surfaces of any type.

The **Hi-Res** EBS-2600 printers print in black oil-based ink.

CHAPTER 2

DESCRIPTION

2. DESCRIPTION

2.1. OVERVIEW

The **Hi-Res** EBS-2600 printer is an industrial ink-jet **DOD** (Drop-on-Demand) printer for touchless labeling of objects moving (traveling, rotating) in front of stationary printhead **2** (see [Fig. 1 on page 14](#)).

The printhead is equipped with **510 nozzles**, which generate **32** or **80 pl** drops, depending on the variant.

The distance between the centers of neighboring nozzles is **0.1411 mm (1/180 inch)**. Owing to that, print resolution in the vertical direction is **180 dpi (180 dot/inch)**, that is **about 7086 dot/m**.

The distance between the centers of the outermost nozzles is **71.82 mm (2.83 inch)**. Owing to that, a maximum print height is about **71.8 mm (2.83 inch)**.

2.2. PRINTER STRUCTURE

This printer is designed to be user-friendly and to provide the user with easy access to the parts that are needed for daily use and routine maintenance. The other parts, to which access is necessary for carrying out maintenance operations, are protected and are accessible only by **instructed** or **skilled persons**.

2.2.1. FRONT VIEW

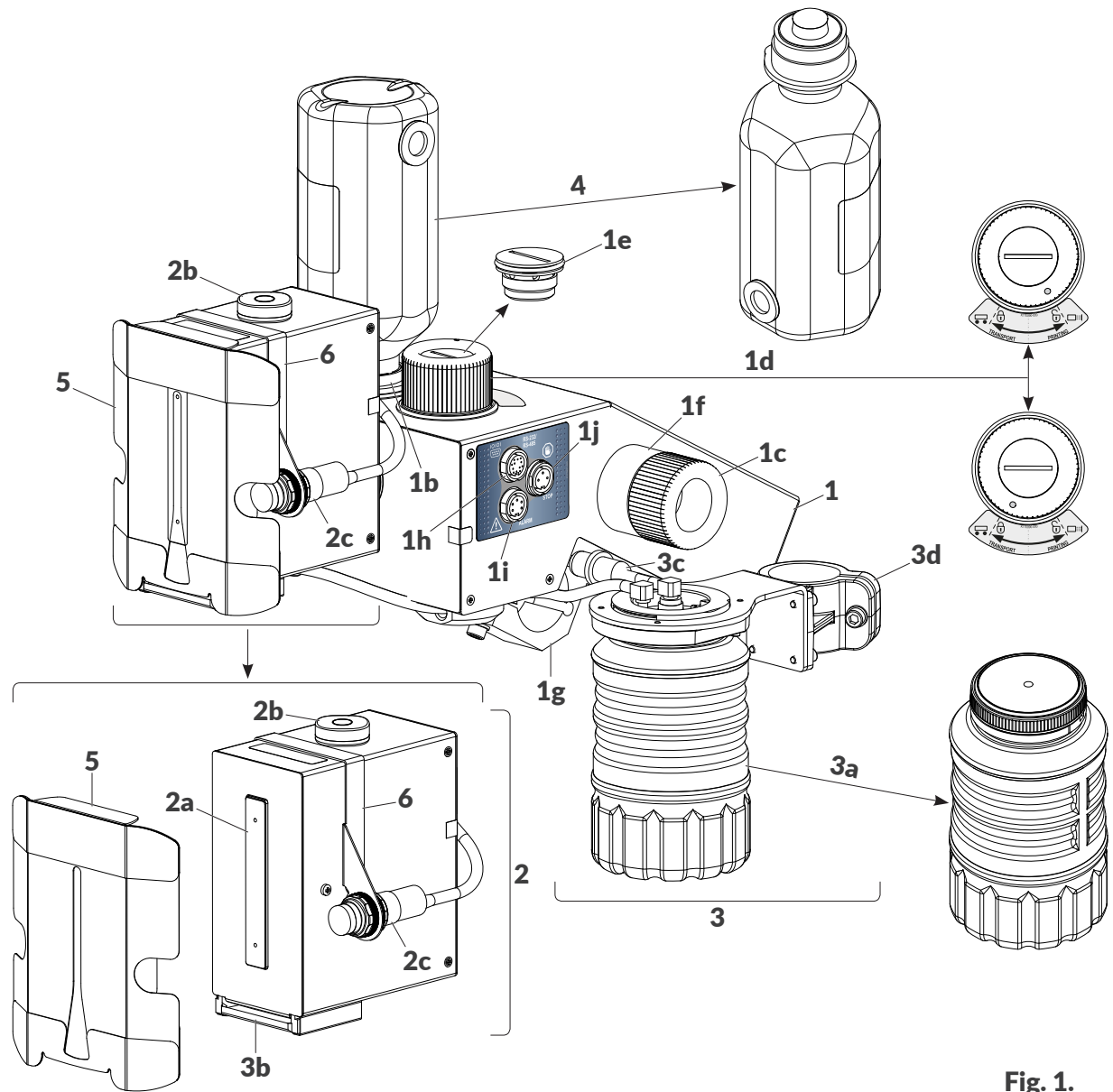


Fig. 1.

1 Printer control unit with ink system.

1b Socket for fitting bottle **4**.

1c Plug for securing bottle socket.

1d Ink system valve with air filter **1e**.

1e Air filter upstream of ink system.

1f Holder for removed socket plug **1c**.

1g Control unit holder.

1h RS-232/RS-485 connector.



1i Status beacon output.



1j Conveyor stoppage output.



2 Printhead.

2a Plate with nozzles - face of printhead (ink outlet).

2b Level.

2c Internal photodetector.

3 Waste system.

- 3a Transparent waste bottle.
- 3b Drip rail.
- 3c Air filter.
- 3d Drip system holder.
- 4 Bottle of ink (the printer comes with a 0.25 l starter bottle).
- 5 Printhead slide¹⁾.
- 6 Photodetector holder²⁾.



¹⁾ - the use of a slide is mandatory; the slide should be selected for the user's application; the slide shown in **Fig. 1 on page 14** is designed to label "soft" objects such as cardboard packages; for more information about slides see "**2.3.1. Additional Information**".

²⁾ - the photodetector holder should be selected for the slide applied; the holder shown in **Fig. 1 on page 14** is intended for one photodetector and for labeling objects moving in front of the printhead face from the left; for more information about photodetector holders see "**2.3.1. Additional Information**".

For information about customized accessories contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

2.2.2. BACK VIEW

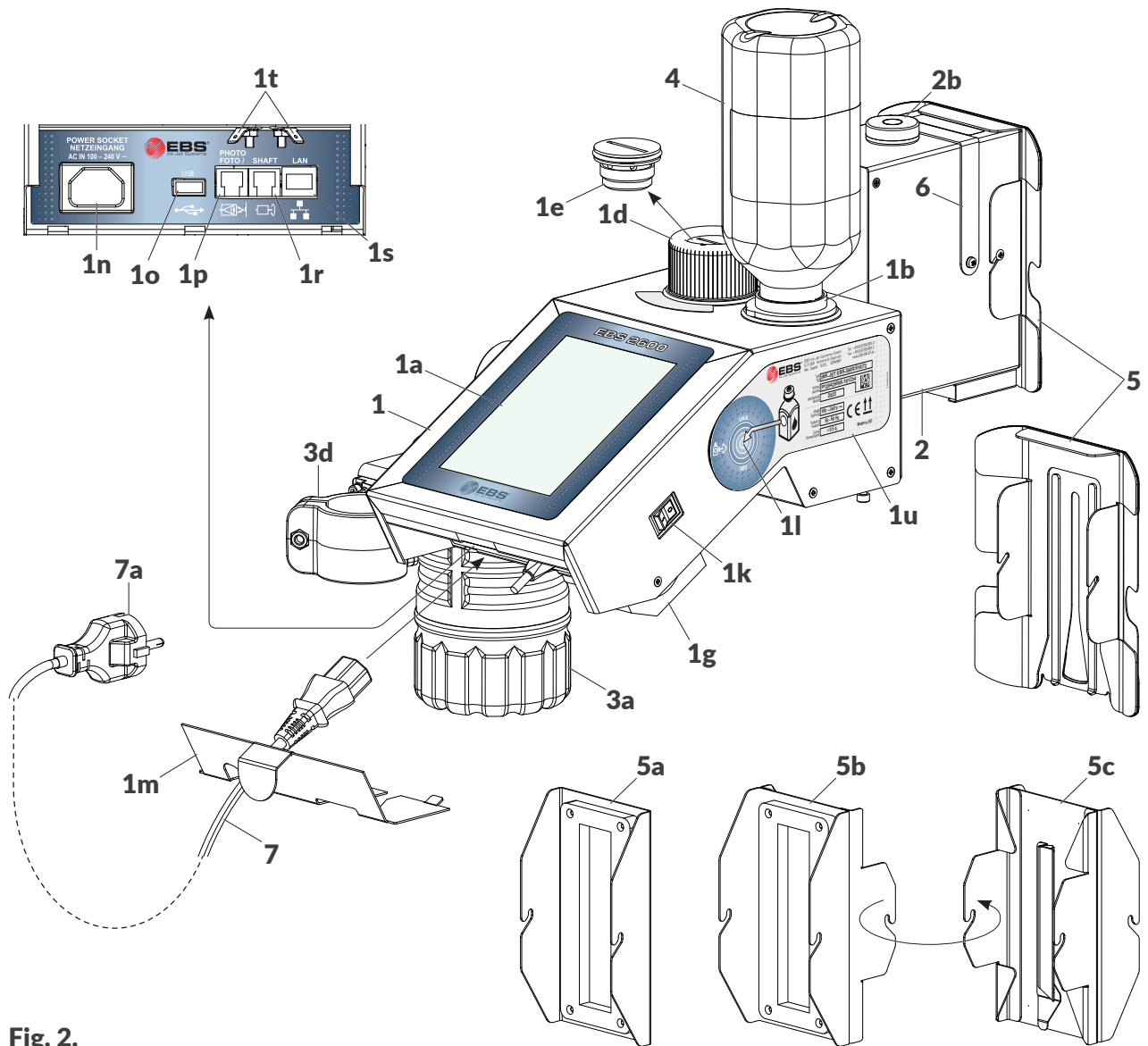






Fig. 2.

1	Printer control unit with ink system.	
1a	LCD control panel - 5.7"/144.8 mm LCD display.	
1b	Socket for fitting bottle 4 .	
1d	Ink system valve with air filter 1e .	
1e	Air filter upstream of ink system.	
1g	Control unit holder.	
1k	Printer ON/OFF button.	
1l	Transponder reader for ink bottles.	
1m	Connector socket guard on back panel.	
1n	Power socket (inlet) to connect power cord 7 .	
1o	USB connector.	
1p	Connector for external photodetector.	
1r	Input for rotational speed sensor (encoder).	
1s	Ethernet connector.	
1t	Shield connections for encoder and external photodetector.	
1u	Nameplate.	

2	Printhead.	
2b	Level.	
3a	Transparent waste bottle.	
3d	Drip system holder.	
4	Bottle of ink (the printer comes with a 0.25 l starter bottle).	
5	Printhead slide ¹⁾ .	
5a	Standard sealing cover (one-sided item).	
5b	Optional sealing cover (accessory; double-sided item).	
5c	Optional drip molding (accessory; double-sided item).	
6	Photodetector holder ²⁾ .	
7	Disconnectable power cord with plug 7a ³⁾ .	



¹⁾ - the use of a slide is mandatory; the slide should be selected for the user's application; the slide shown in **Fig. 2 on page 16** is designed to label "soft" objects such as cardboard packages; for more information about slides see "**2.3.1. Additional Information**".

²⁾ - the photodetector holder should be selected for the slide applied; the holder shown in **Fig. 2 on page 16** is intended for one photodetector and for labeling objects moving in front of the printhead face from the left; for more information about photodetector holders see "**2.3.1. Additional Information**".

³⁾ - depending on a given country, power plug **7a** may differ from that shown in **Fig. 2 on page 16**.

For information about customized accessories contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

2.2.3. EXTERNAL CONNECTIONS

USB connector

An appropriate **USB** memory device connected to the **USB** port (**1o**; see **Fig. 2 on page 16**) can be used to:

- Import/export data to/from the printer,
- Update the printer software.



For more information see "**7.7. Exchanging Data via a USB Port**".

The current efficiency of the **USB** connector is **500 mA**. The printer may not recognize a **USB** memory device whose power consumption is higher.

A **USB** memory device connected to the **USB** port will be recognized by the printer if the memory is formatted with the **FAT** or **FAT32** file system.

External photodetector input

The photodetector is intended for detecting an object to be labeled and thereby for triggering printing at an appropriate moment.

The **Hi-Res** EBS-2600 printers are provided with internal photodetector **2c** (see **Fig. 1 on page 14**), as standard. If such a photodetector cannot be applied (e.g. when the user's photodetector is used or a photodetector with a longer cable is needed), an external photodetector can be applied.

The external photodetector is connected to input **1p** (see [Fig. 3](#)).

Two photodetectors can be used at the same time. The function can be used for synchronizing printouts while Euro-pallets are labeled, for example.



For more information see “[2.3.4.3. External photodetector](#)” and “[2.3.5. Labeling Euro-pallets](#)”.

A description of 6-pin female connector **1p** (see [Fig. 3](#)) of the photodetector is given in the following table.

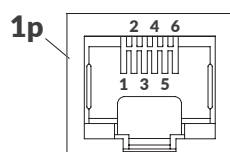


Fig. 3.

1	Not used.
2	GND (ground).
3	Input for photodetector pulses.
4	+24 VDC (power supply).
5	Not used.
6	Not used.



[Fig. 3](#) shows a view of the connector from the outside of the printer.

The **Hi-Res** EBS-2600 printer is provided with the following by default: NPN N/C (N/C Normally Closed) photodetectors with an **RJ12** connector, a separate shield lead and two cables whose lengths are:

- 1 m / 39.4 inch (Part No. **P390094**),
- 5 m / 196.8 inch (Part No. **P390058**).

Photodetectors of other types can also be applied.



NOTE: Shielding must be connected!

The separate shield lead that the above-mentioned photodetectors are provided with must be connected to one out of two connections **1t** (see [Fig. 2 on page 16](#)) on the printer.



Set triggering parameters of your project for correct operation of the photodetector; for more details see “[5.4.1. Project Parameters](#)”.

Rotational speed sensor (encoder) input

A rotational speed sensor (encoder) is designed to measure the speed at which objects to be labeled move on a factory conveyor. With it, the printing speed can be adjusted to a variable speed of objects on the conveyor belt. The encoder is connected to input **1r** (see [Fig. 4 on page 19](#)).

If the conveyor belt travels at a constant speed, there is no need for using an encoder.

A description of 6-pin female connector **1r** (see [Fig. 4](#)) of the rotational speed sensor is given in the following table.

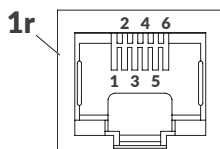


Fig. 4.

- | | |
|----------|--|
| 1 | Encoder pulse input (printing direction signal). |
| 2 | GND (ground). |
| 3 | Not used. |
| 4 | +24 VDC (power supply). |
| 5 | Not used. |
| 6 | Encoder pulse input (timing signal). |



Fig. 4 shows a view of the connector from the outside of the printer.

The **Hi-Res** EBS-2600 printer is provided with a programmable encoder with an **RJ12** 5 m / 196.8 inch cable (Part No. **P320437**) and a separate shield lead by default. The encoder is pre-programmed to generate **63779 pulses/rotation**; if the circumference of the roll is **250 mm**, the encoder constant is **255116 pulses/meter**.

Encoders of other types can also be applied.

Moreover, if one encoder is to support two printers, the encoder signal can be distributed with an appropriate signal splitter.



NOTE: Shielding must be connected!


The separate shield lead that the above-mentioned encoder is provided with must be connected to one out of two connections **1t** (see [Fig. 2 on page 16](#)) on the printer.



The encoder constant and an external source of timing pulses need to be set for correct operation of the encoder. For more details see [“7.1. General Settings”](#) and [“5.4.1. Project Parameters”](#).

An example of an application with two printers and an encoder signal splitter is shown in [“2.3.5. Labeling Euro-pallets”](#).

Ethernet connector

The **Ethernet** standard is used for linking the printer into an **Ethernet** network or direct to a computer. Owing to that, the printer or a network of printers can be controlled remotely. **Ethernet** can also be used for transferring data that can be printed using a **Communications port**-type object . The **Ethernet** connector (**1s**) is an **RJ45** connector (see [Fig. 5](#)).

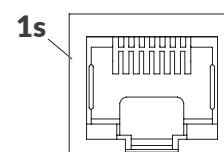


Fig. 5.



For the description of how to configure **Ethernet** see [“7.4.1. Ethernet”](#).

The **Hi-Res** EBS-2600 printer is designed to be connected to a computer via an **Ethernet** 5 meter / 196.8 inch crossover cable (Part No. **2870005**) by default. The cable is part of the installation


kit.



NOTE: The power cord must be disconnected!

An **Ethernet** cable can be connected to connector **1s** in control unit **1** only when the control unit is detached from mains electricity!

RS-232/RS-485 connector

The **RS-232** standard is designed to transfer data to the printer from external devices such as a bar/matrix code reader, scales. The data can be printed using a **Communications port**-type object .

An external device can be connected to connector **1h** (see [Fig. 6](#)).

A description of 12-pin female connector **1h** (see [Fig. 6](#)) of the **RS-232/RS-485** is given in the following table.

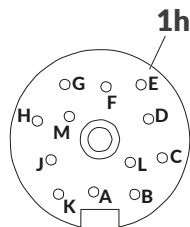


Fig. 6.

A	RXD (Received Data) input.
B	UART+.
C	TXD (Transmitted Data) output.
D	Not used.
E	RTS (Request to Send) output.
F	Not used.
G	CTS (Clear to Send) input.
H	Interface switch (between RS-232 and RS-485).
J	GND (ground).
K	UART-.
L	Not used.
M	Not used.

[Fig. 6](#) shows a view of the connector from the outside of the printer.



The **RS-232** interface is activated on connector **1h** by default. To activate the **RS-485** interface, you need to connect pin **H**, that is the interface switch, to ground.

For the description of how to configure the **RS-232** see [“7.4.2. RS-232/RS-485”](#).

Status beacon output

The status beacon is an external signaler of printer status that can be seen from a greater distance.

The status beacon is connected to output **1i** (see [Fig. 7 on page 21](#)).

A description of 5-pin female connector **1i** (see [Fig. 7 on page 21](#)) of the status beacon is given in

the following table.

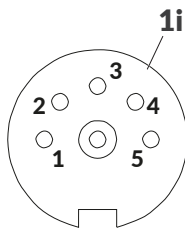


Fig. 7.

1	Error; open collector, max. 45 mA.
2	Warning; open collector, max. 45 mA.
3	Printing; open collector, max. 45 mA.
4	+24 VDC (power supply).
5	GND (ground).



Fig. 7 shows a view of the connector from the outside of the printer.

Conveyor stoppage output

The **Hi-Res** EBS-2600 printer offers an option of stopping the factory conveyor if an error that makes printing impossible occurs. If the option is used, the factory conveyor is connected to output **1j** (see Fig. 8).



NOTE: Functional output!

The conveyor stoppage output does not serve a safety function. This is a functional output.

A description of 3-pin female connector **1j** (see Fig. 8) for stopping a factory conveyor is given in the following table.

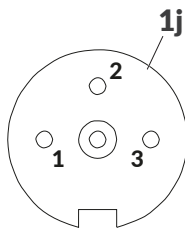


Fig. 8.

1	NO - Normally Open contact.
2	COM - COMmon contact.
3	NC - Normally Closed contact.



Fig. 8 shows a view of the connector from the outside of the printer.

The conveyor halt connector is provided with the following relay contacts:

- Normally Open (**NO - COM**), the contacts close when an alarm signal occurs,
- Normally Closed (**NC - COM**), the contacts open when an alarm signal occurs.



Current-carrying capacity of the relay contacts:

- 0.5 A for 125 VAC,
- 0.3 A for 110 VDC,
- 2 A for 30 VDC.

2.2.4. INK BOTTLE CONNECTION

Socket **1b** (see [Fig. 2 on page 16](#)) is used to fit ink bottle **4** in the printer. Owing to its construction, the connection ensures easy replacement of the bottle, while the **IMS** (Ink Monitoring System) with antenna **1l** situated on the side wall of control unit **1** prevents a bottle of ink that is incorrect or has passed its expiration date from being fitted in the printer.

2.2.5. CONSUMABLES

2.2.5.1. INK BOTTLE

The **Hi-Res** EBS-2600 printers are fed with the ink from bottle **4** (see [Fig. 9](#)) whose capacity is 0.25 liter (a 0.25 l starter bottle is part of the installation kit) or 0.5 liter.

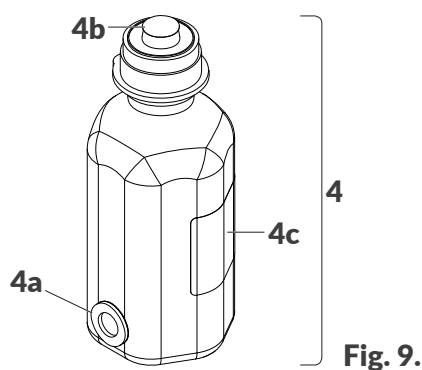


Fig. 9.

- | | |
|-----------|---------------------------|
| 4 | Ink bottle. |
| 4a | Transponder. |
| 4b | Aluminum protective film. |
| 4c | Label. |

Each bottle is secured with aluminum protective film **4b**. The film must be removed before the bottle is installed in the printer.

Weight of a 0.25 l ink bottle: **about 0.25 kg (0.55 lb)**.

Weight of a 0.5 l ink bottle: **about 0.5 kg (1.10 lb)**.

2.3. INSTALLING THE PRINTER



The printer can be basically installed or relocated by an **instructed person** in accordance with the recommendations given in **The User Manual**.

Installation of advanced features (to use special types of ink, integrate the printer with a production line, work with external devices, etc.) can only be done by a **skilled person**, who will bear the full responsibility for the job.

A typical installation kit for the **Hi-Res** EBS-2600 printer consists of:

Component part	Quantity
1 Printer control unit with ink system.	
2 Printhead with internal photodetector.	Printer.
3 Drip system with transparent waste bottle.	
4 0.25 l starter bottle of ink.	1
5a Standard sealing cover (one-sided item).	1
7 Disconnectable power cord, its version depends on the country the printer is destined for.	1
Ethernet crossover cable, 5 m .	1
Disposable foam cleaner for nozzle plate.	10
Foam cleaner handle.	1
A USB memory device containing user documentation in electronic format.	1
Safety instructions in paper format.	1

The installation kit also includes all necessary screws, washers, nuts, etc.

Extra accessories (included in the description of an example of installation further in this chapter) depending on user application:

Component	Quantity
5 Printhead slide. Designed to label "soft" objects such as cardboard packages. Photodetector holder.	1
6 Designed to hold one photodetector and used for labeling objects moving in front of the printhead face from the left.	1
8 Support beam (450 mm in length) with clamp holders 8a .	1
9 Printer beam (185 mm in length) with articulated holder 9a .	1

Important hints on how to install the **Hi-Res** EBS-2600 printer:

- Objects to be labeled must move in front of the face of the printhead from the slide and the photodetector.
- The printer must be leveled (use level **2b** located on printhead **2**),
- The printer must be positioned in a place that is free from vibration, shocks, excessive dust, smoke, dirt and aggressive or flammable vapors and gases.

There are many potential configurations of the **Hi-Res** EBS-2600 printer on a factory conveyor, therefore the description given in this chapter applies to the configuration given in the following example. Actual or optional components may differ from those depicted in illustrations. For information about optional accessories contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

Before you start installing your printer, read carefully the information that is given at the beginning of this chapter and in **The Safety Instructions**.



To install the printer:



Tools required:

- a #5 angle hex (Allen) key,
- a #3 hex (Allen) key with a ball tip,
- a #7 open ended spanner (optionally; for changing the position of articulated holder **9a**),
- a cross head screwdriver,
- a drilling machine.

1. Prepare appropriate mounting holes in the conveyor frame (see **Fig. 10**).



NOTE: Firm fastening is required!

Adjust the installation to the existing technical conditions to ensure that the printer is steadily fastened to the conveyor.

Never tilt the printer away from the vertical direction (to any side) through an angle greater than 30° while performing all installation operations and while using the printer.

Assort distance **L** (see **Fig. 10**) depending on the amount of free space available on the conveyor and on the layout of printer components on printer support beam **8**.

2. Fasten clamp holders **8a** to the belt conveyor and position them according to **Fig. 10**. Tighten the screws in holders **8a** with the #3 hex key with a ball tip.

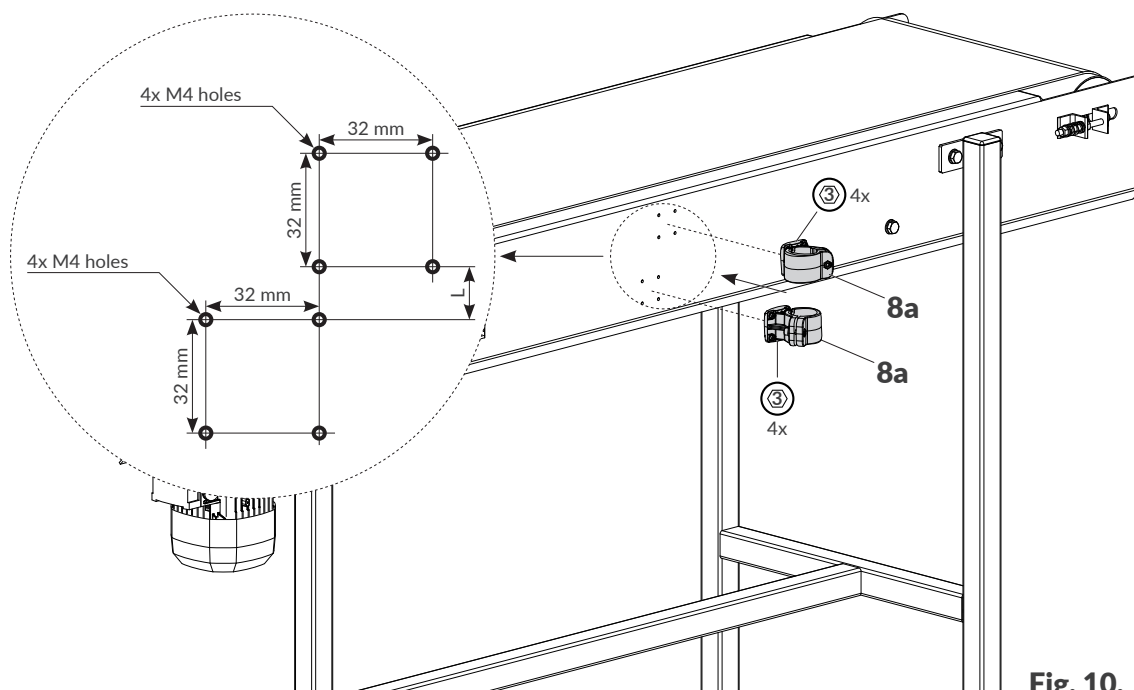


Fig. 10.

3. Make drip system **3** and waste bottle **3a** ready for fastening to support beam **8**.



Before drip system **3** is installed, you must remove the plugs from the tubes that are part of the system.

While positioning the drip system, you should take into consideration the length of the tubes that are part of drip system **3**.

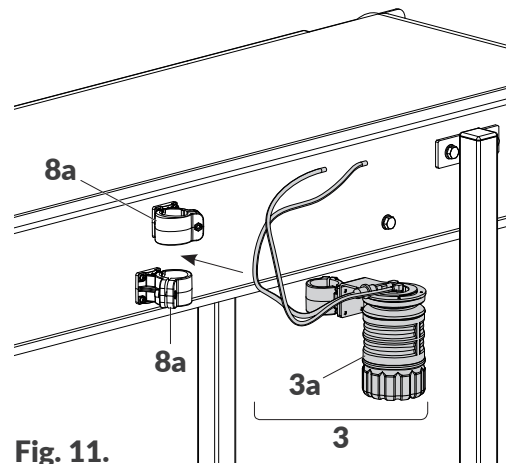


Fig. 11.

4. Put support beam **8** in clamp holders **8a** and in the holder of drip system **3d**, inserting it according to Fig. 12. Use the #5 angle hex key to tighten the appropriate screws that are part of clamp holders **8a** and **3d**, clamping the holders to support beam **8**.

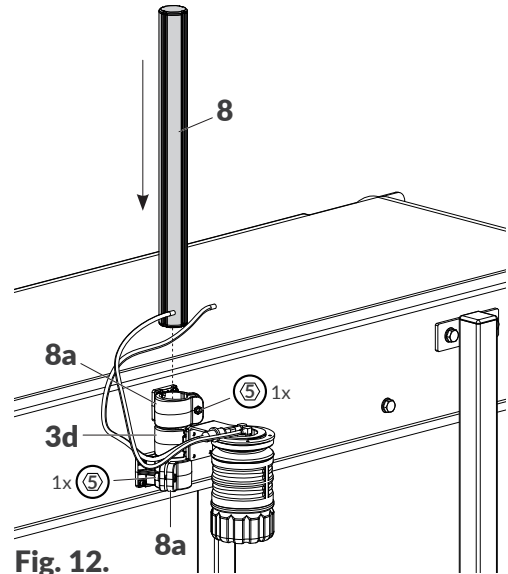


Fig. 12.

5. Fasten printer beam **9** and articulated holder **9a** to support beam **8** (see Fig. 13). Use #5 angle hex key to tighten the appropriate screw that is part of holder **9a**, clamping the holder to support beam **8**.



Articulated holder **9a** can be configured in 3 ways. For more details see "2.3. Installing the Printer" ► "2.3.1. Additional Information".

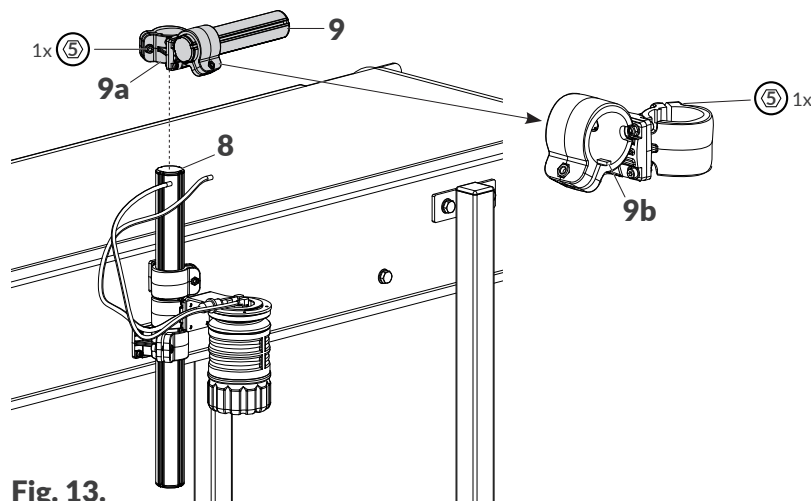


Fig. 13.

While installing the printer make sure that holder fins **9b** (see Fig. 13) are properly put into the vertical grooves on the beams.

6. Use the cross head screwdriver to loosen two screws (see [Fig. 14](#)) that fasten sealing cover **5a**.
7. Remove sealing cover **5a**.

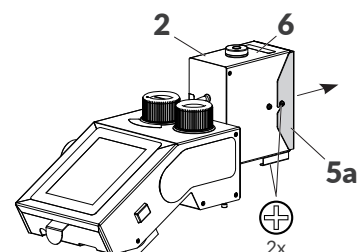


Fig. 14.

8. Select slide **5** for the user's application and a holder of photodetector **6** for the selected slide (**5**) and for the direction in which objects move in front of the face of printhead **2**. [Fig. 15](#) shows an example of slide **5** dedicated to "soft" objects such as cardboard packages.
9. Fasten slide **5** and photodetector holder **6** to printhead **2**. Use the cross head screwdriver to tighten two screws that fasten slide **5** and two screws that fasten holder **6** to printhead **2**.

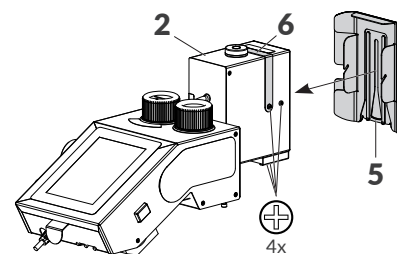


Fig. 15.

**NOTE: A slide must be used!**

The **Hi-Res** EBS-2600 printer must be provided with slide **5** to protect the printhead against mechanical exposure. For more details about the accessories available see ["2.3.1. Additional Information"](#).

10. Put internal photodetector **2c** in holder **6** (see [Fig. 16](#)).
11. Fasten the printer (control unit **1** with printhead **2**) to beam **9** (see [Fig. 16](#)). Use the #5 angle hex key to tighten the screw that is part of holder **1g**, clamping the holder to printer beam **9**.

**NOTE: The printer must be leveled!**

The **Hi-Res** EBS-2600 printer must be leveled at the workstation. Use level **2b** situated on printhead **2** to ensure a correct working position for the printer.

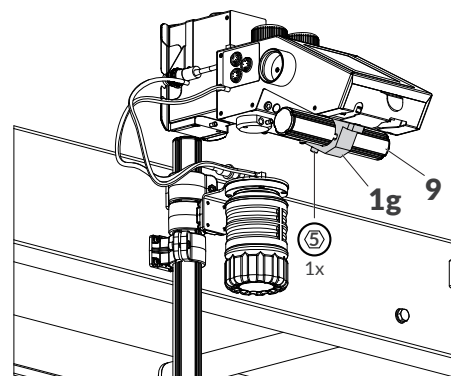
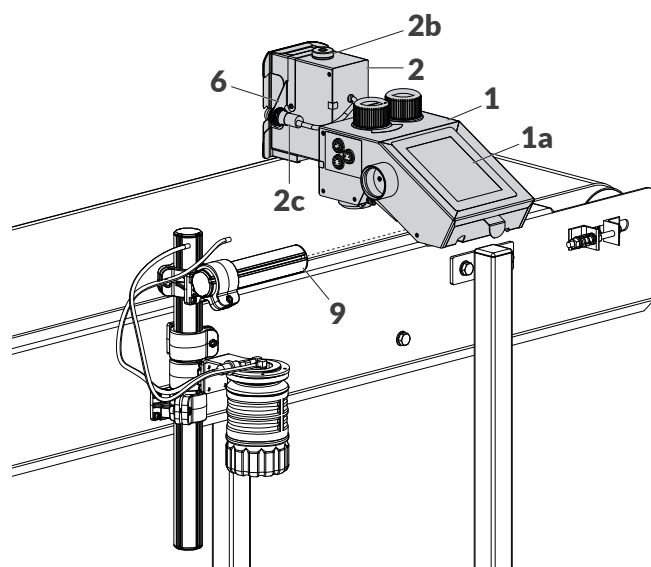


Fig. 16.

12. Remove protective film from LCD control panel **1a**.
13. Pull ink tube **3e** of the drip system through the strain relief in through element **1w**. Pull the tube

through towards printhead **2**.

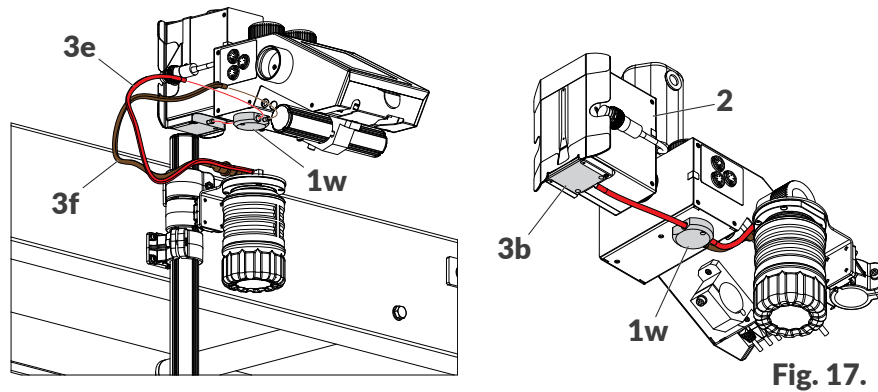


Fig. 17.

14. Attach the following tubes within the drip system:

- Air tube **3f** to the stub pipe in through element **1w** on the bottom side of control unit **1**,
- Ink tube **3e** (that has previously been pulled through the strain relief in through element **1w** to the stub pipe in drip mold **3b**).

15. Remove guard **1m**, which protects connection sockets on the back panel (see [Fig. 18](#)).

16. Plug power cord **7** into connector **1n** in control unit **1** and into an electric outlet with the earth pin (see [Fig. 18](#)).



The requirements for the electrical mains and location of the mains socket are given in [The Safety Instructions](#).

17. Install guard **1m**.

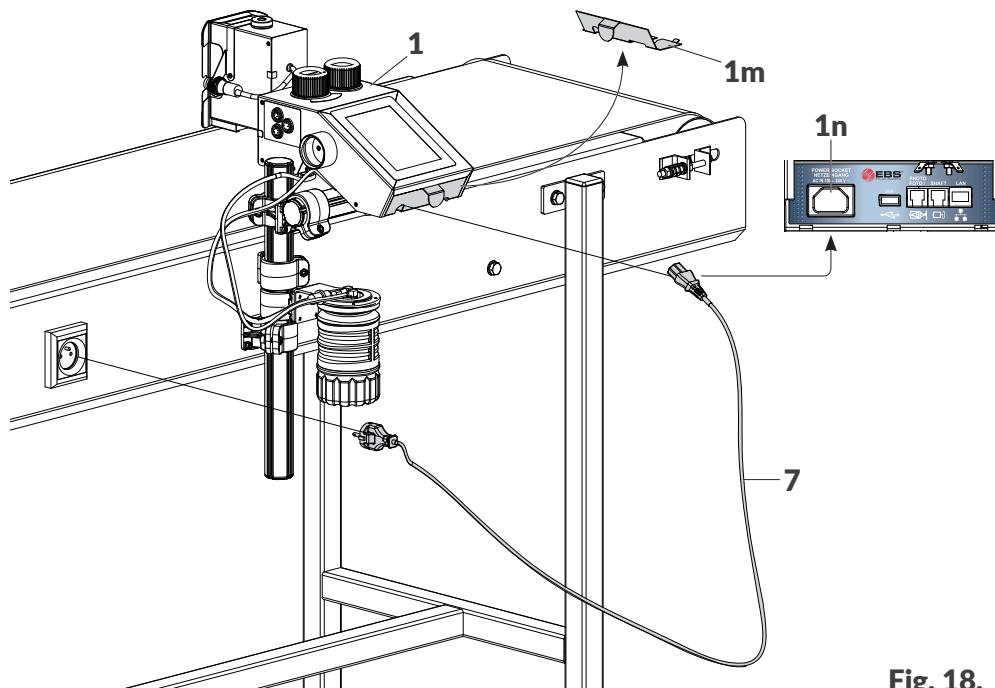


Fig. 18.

18. Set ink system valve **1d** (see [Fig. 19 on page 28](#)) at the **PRINTING** position.

19. Press button **1k** situated on the side wall of the printer's control unit **1** to start the printer up.



For more details about printer startup see [“4.1. Starting the Printer up”](#).

20. Unscrew plug **1c** that secures bottle socket **1b**.

Place the unscrewed plug **1c** into holder **1f** on the side wall of the printer's control unit **1**.

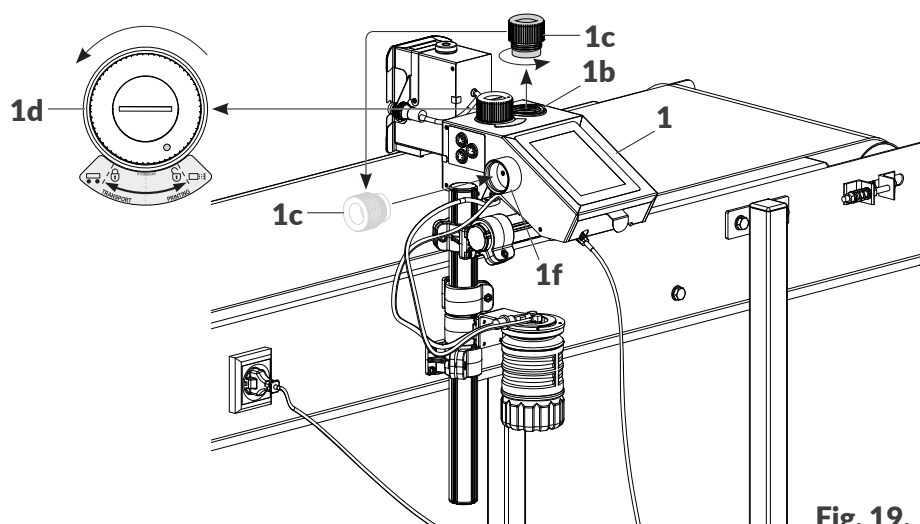


Fig. 19.

21. Put transponder **4a** of starter ink bottle **4** (see Fig. 20) to reader **1l** on the side wall of the printer's control unit **1**.
22. Acknowledge the message saying that ink bottle **4** has been accepted.
23. Tear aluminum protective film **4b** out of starter ink bottle **4**.
24. Install starter ink bottle **4** screwing it into socket **1b**.



The turning of a new bottle of ink upside down will not cause the ink to spill out because the bottle is equipped with a protective valve.

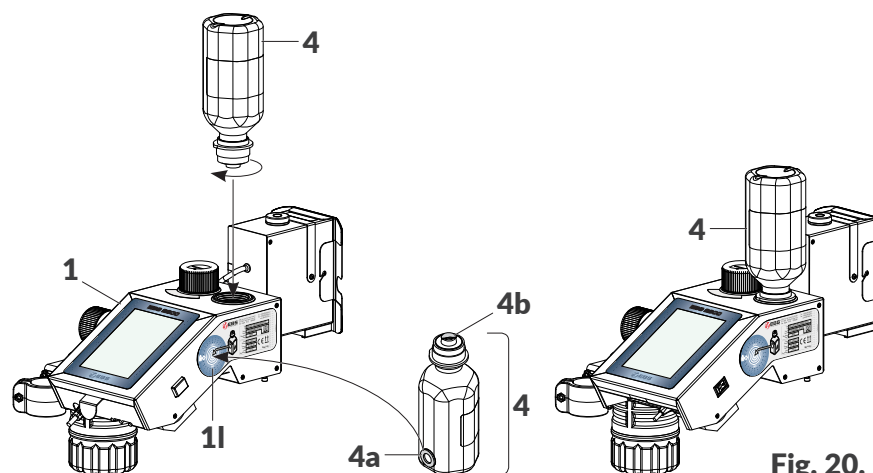


Fig. 20.

25. Carry out the long purging procedure until the ink starts flowing out of nozzles.



For more details about purging procedures see ["8.1. Purging/Venting the Printhead"](#).

26. Make a test print and assess print quality.



For more details about test prints see ["2.4.1. Test Prints"](#).

27. If print quality is not satisfactory, carry out the long or short purging procedure.



The amount of ink in starter ink bottle **4** is sufficient to start the printer up for the first time. When the printer signals no ink in the starter bottle, the ink bottle needs to be replaced with a new one. For more details about the bottle replacement procedure see ["4.5.1. Replacing the Ink Bottle"](#).

The printer is installed in its standard working position and ready for startup.

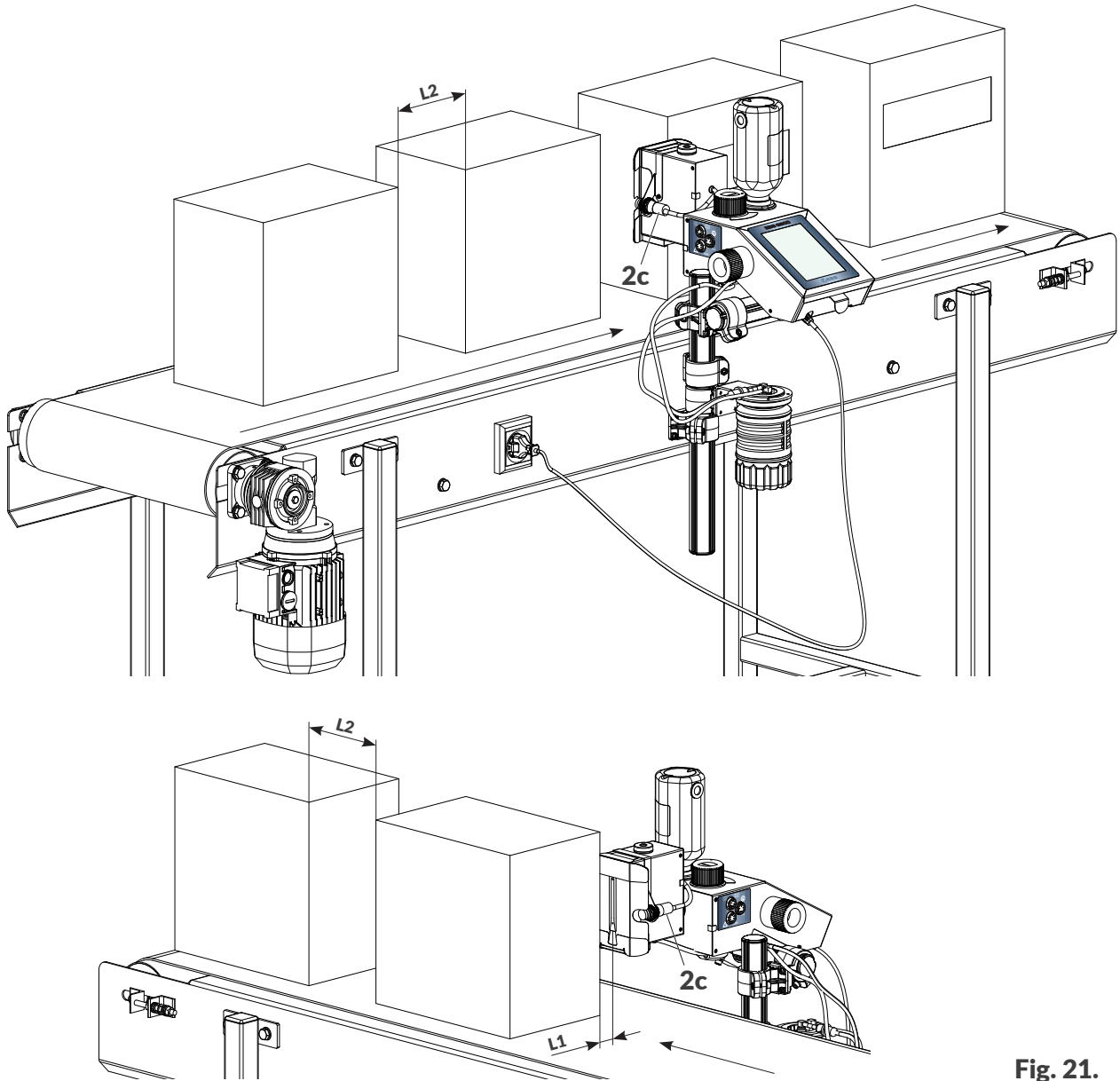


Fig. 21.

Objects to be labeled must be within the reach of a photodetector selected as the source of the trigger signal:

- internal photodetector **2c** (standard),
- external photodetector; connected to connector **1p** in control unit **1** (option),
- two photodetectors; when printouts should be synchronized with objects (e.g. to label Euro-pallets).

Distance **L1** from the face of the printhead to objects to be labeled: **max. 4 mm (max. 0.16 inch)**.

Minimum distance **L2** between consecutive objects on a factory conveyor: **50 mm (1.97 inch)**.

2.3.1. ADDITIONAL INFORMATION

Articulated holder

Articulated holder **9a** (see [Fig. 22](#)), part of the installation kit, offers 3 positions. Owing to that, the printer can be fastened to a factory conveyor and thereby customized in a variety of ways.

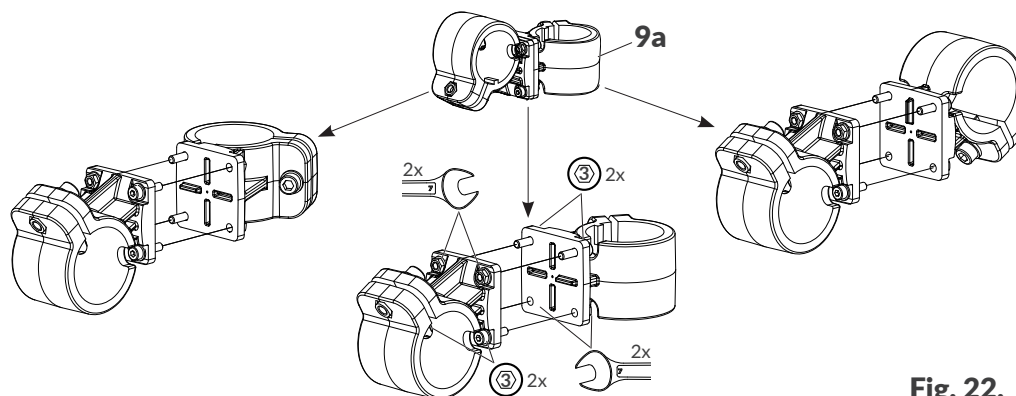


Fig. 22.



A #7 open ended spanner and a #3 hex (Allen) key are necessary for changing the position of articulated holder **9a**.

Slide, photodetector holder

The use of slide **5** for protecting the printhead against mechanical exposure is mandatory. The slide must be selected for the user's application.

It is also necessary to select an appropriate photodetector holder **6**. The selection of a photodetector holder depends on the following:

- Selected slide **5**; it must not veil a photodetector,
- The number of photodetectors in the given application; one or two photodetectors can be used,
- The direction in which objects to be labeled move in front of the printhead face.

Below there is a list of selected slides **5** and photodetector holders **6**.

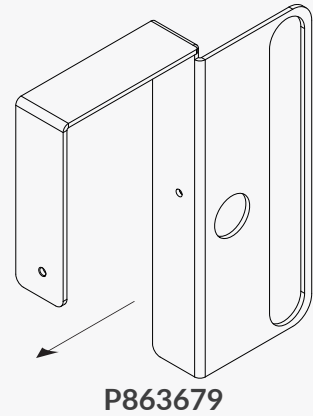
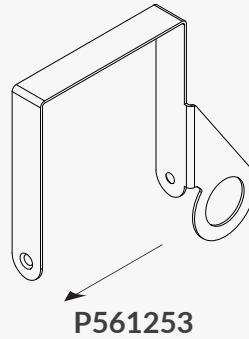
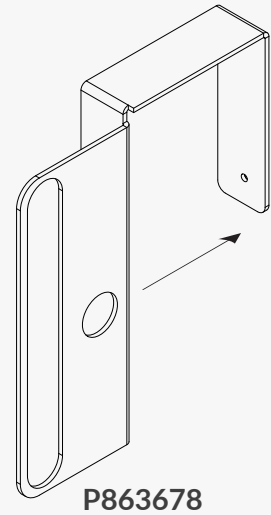
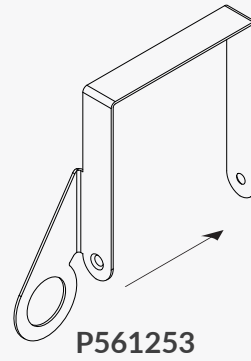
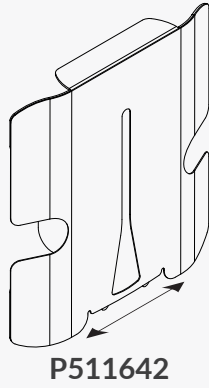
Recommended applica-
tion

Slide **5**

Recommended photodetector holder **6**

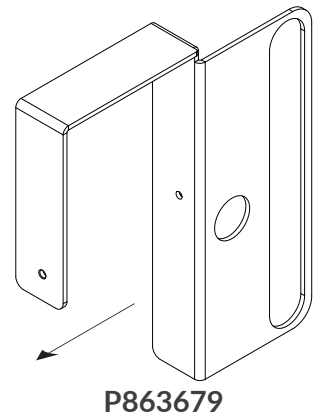
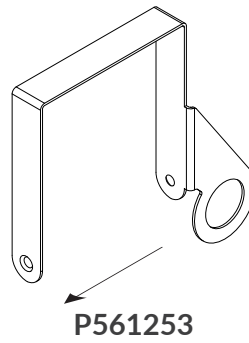
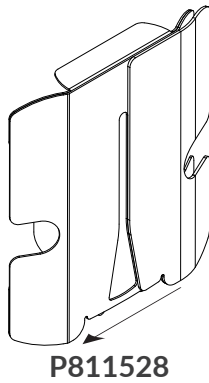
Labeling “soft” objects
such as cardboard pack-
ages.

Direction: any (leftward/
rightward).



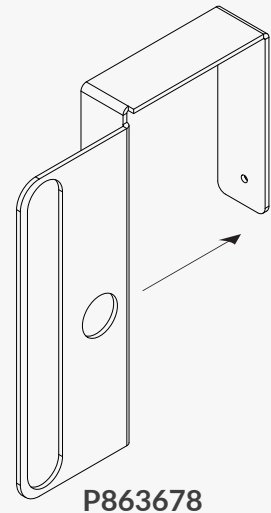
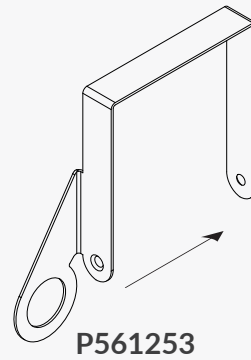
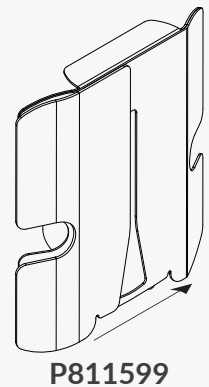
Labeling Euro-pallet
brackets.

Direction: leftward.



Labeling Euro-pallet
brackets.

Direction: rightward.



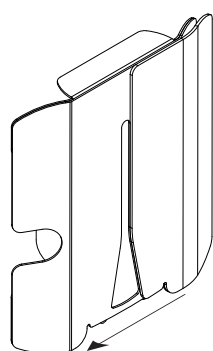
Recommended applica-
tion

Slide **5**

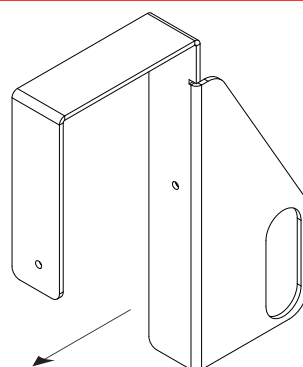
Recommended photodetector holder **6**

Labeling entire Euro-
pallets.

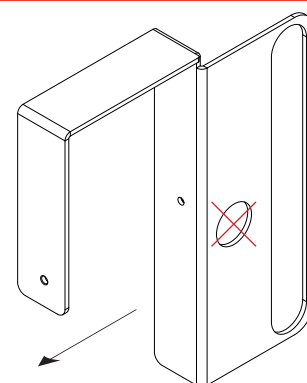
Direction: leftward.



P811680



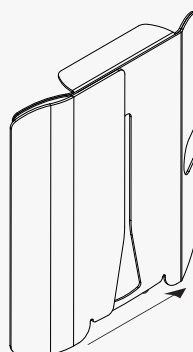
P863421



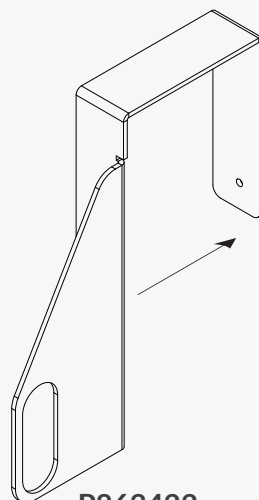
P863679

Labeling entire Euro-
pallets.

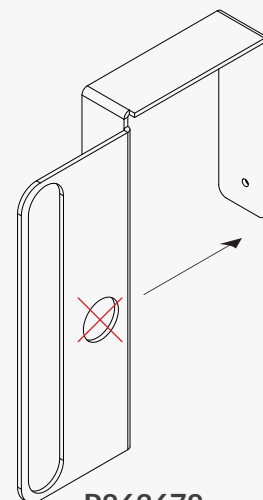
Direction: rightward.



P811681



P863422



P863678



A cross head screwdriver is required to attach/detach slide **5** and photodetector holder **6** to/from the printhead.

Additional Information:

- The direction in which objects to be labeled move in front of the printhead face is marked with arrows in the above list,
- Holder **P561253** is a general application item, that is it can be used for labeling objects moving in both the leftward and rightward directions in front of the printhead face,
- Holders **P863678** and **P863679** can be used for fastening one or two photodetectors; the other holders are intended for fastening only one photodetector,
- Combinations of slide **5** and photodetector holder **6** different than those listed above are permissible; in each case you should take the direction in which objects to be labeled move in front of the printhead face into consideration and make sure that the selected slide does not veil the photodetector(s).

Drip molding/sealing cover

The face of the printhead must be secured with an appropriately selected slide during printing.

For the time required to carry out selected service/maintenance procedures, the slide should be removed and replaced with:

- standard sealing cover **5a** (one-sided item; see [Fig. 23](#)),

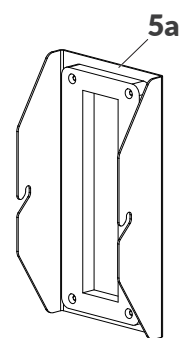


Fig. 23.

or

- a double-sided accessory* (see [Fig. 24](#)), which is used as sealing cover **5b** or drip molding **5c**, depending on the direction in which it is installed on the printhead.



* The double-sided accessory (Part No. **P513324**) is not supplied with the printer.

For information about customized accessories contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

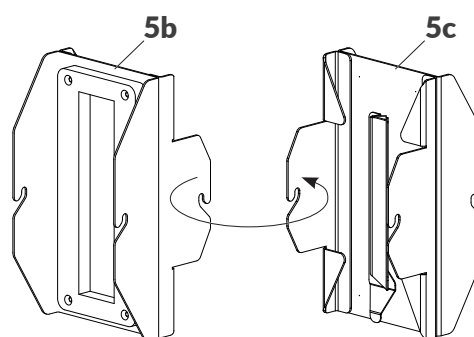


Fig. 24.

A sealing cover, either standard (**5a**) or optional (**5b**) should be used:

- if the printer is to remain unused for at least 1 week,
- each time idle time or downtime occurs if the printer operates in an environment where dirt or contamination could deposit on printhead nozzles,
- if it is to be transported.



For more details see "[8.3.1.1. Installing a Sealing Cover](#)".

Optional drip molding **5c** should be used while the short or long purging/venting procedures are conducted in the printhead.



For more details see "[8.1. Purging/Venting the Printhead](#)".

Dedicated stands

Section “2.3. Installing the Printer” shows an example of how to install the **Hi-Res** EBS-2600 printer on a factory conveyor. In fact, the printer can be installed in many ways, also by means of dedicated stands such as:

- a legged stand (Part No. P910214; see [Fig. 25](#)),
- a wheel stand (Part No. P910208; see [Fig. 26](#)).

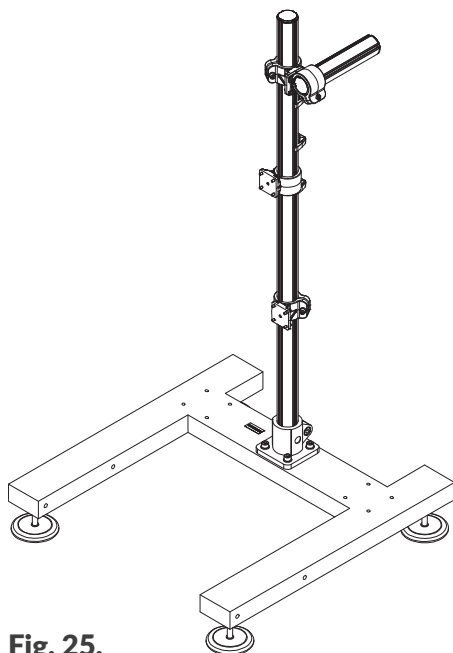


Fig. 25.

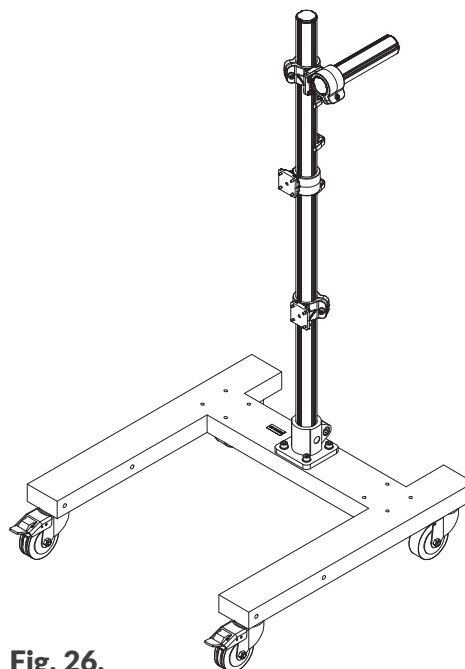


Fig. 26.

NOTE: The system must be checked for stability!

The stability of the system where the printer is installed using the stands shown in [Fig. 25](#) and [Fig. 26](#) has been tested in the worst foreseeable scenario. However, due to the fact that the printer can be configured in many ways, it is required that system stability be confirmed each time the installation is complete. The stand with the printer fastened to it must not tilt or overturn.



The stand with the printer fastened to it should be secured against shifting. If the printer is installed on a wheel stand, the brakes at the stand wheels must be put on.

The use of stands other than the dedicated ones depicted in [Fig. 25](#) and [Fig. 26](#) does not guarantee required stability of the system, which may lead to personal injuries when the stand with the printer on it tilts or overturns.

2.3.2. ELECTRICAL CONNECTIONS

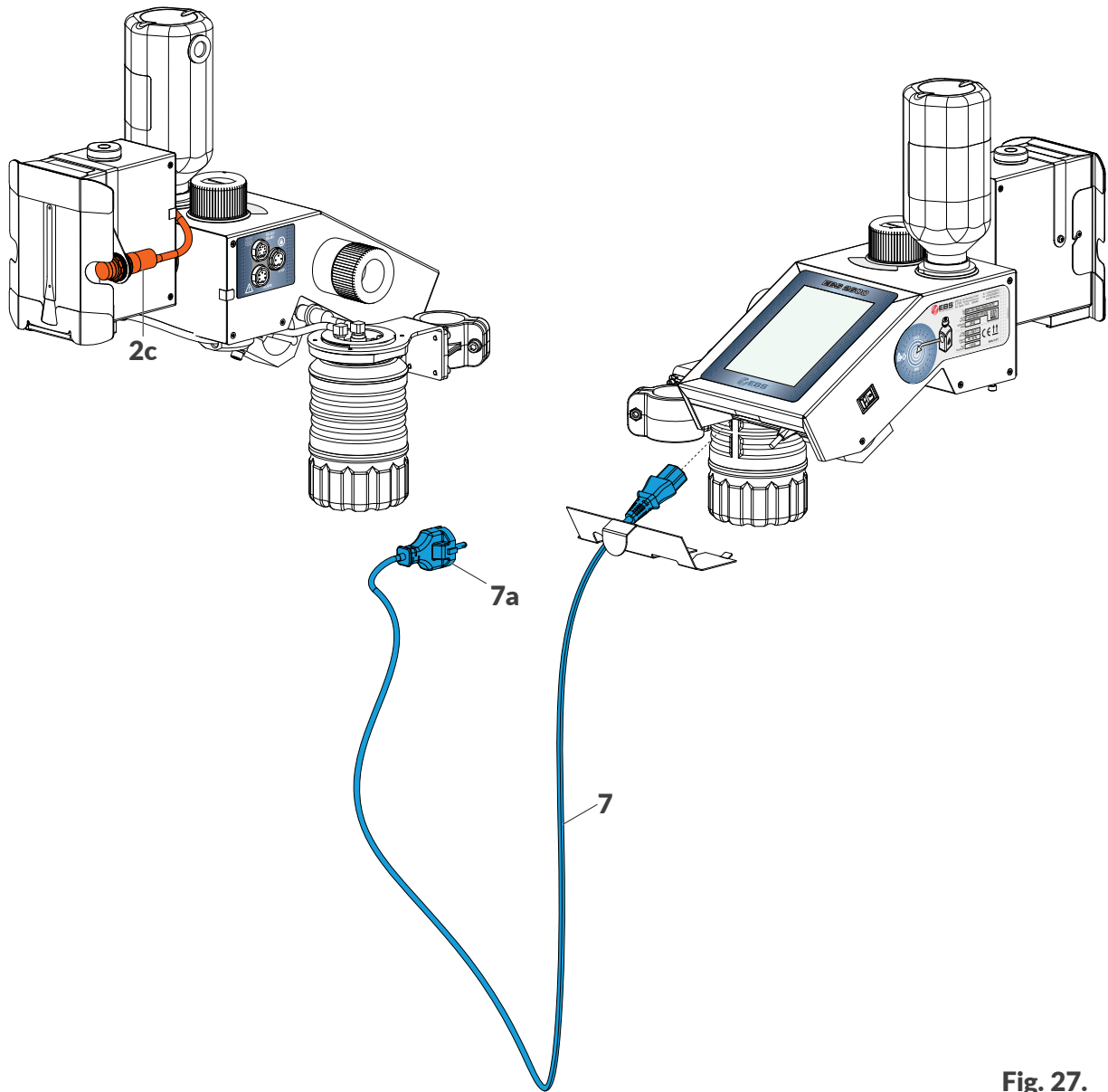


Fig. 27.

Cable/Component

Color

2c Internal photodetector.

orange

7 Disconnectable power cord with plug 7a.

blue

2.3.3. HYDRAULIC CONNECTIONS

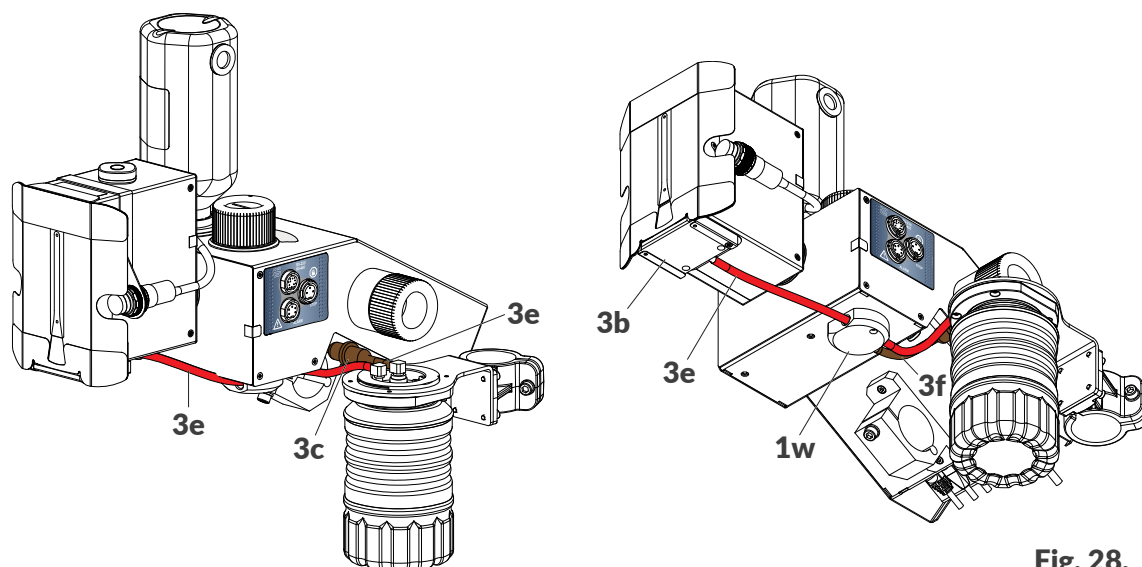


Fig. 28.

Tube




Color

Tube	Color
3e Ink tube. Drip rail 3b ► Drip system.	red
3f Air tube with filter 3c . Through element 1w ► Drip system.	brown

2.3.4. INSTALLING ACCESSORIES

2.3.4.1. STATUS BEACON

The **Hi-Res** EBS-2600 printer can be optionally equipped with external status beacon **10** (see **Fig. 29**). The beacon uses colors to signal the printer statuses displayed on the screen:

Beacon color code		Meaning
Solid yellow.		A warning that does not pause printing but may require user intervention.
Solid red.		An error/fault that makes printing impossible.
Solid green.		The printer is printing.

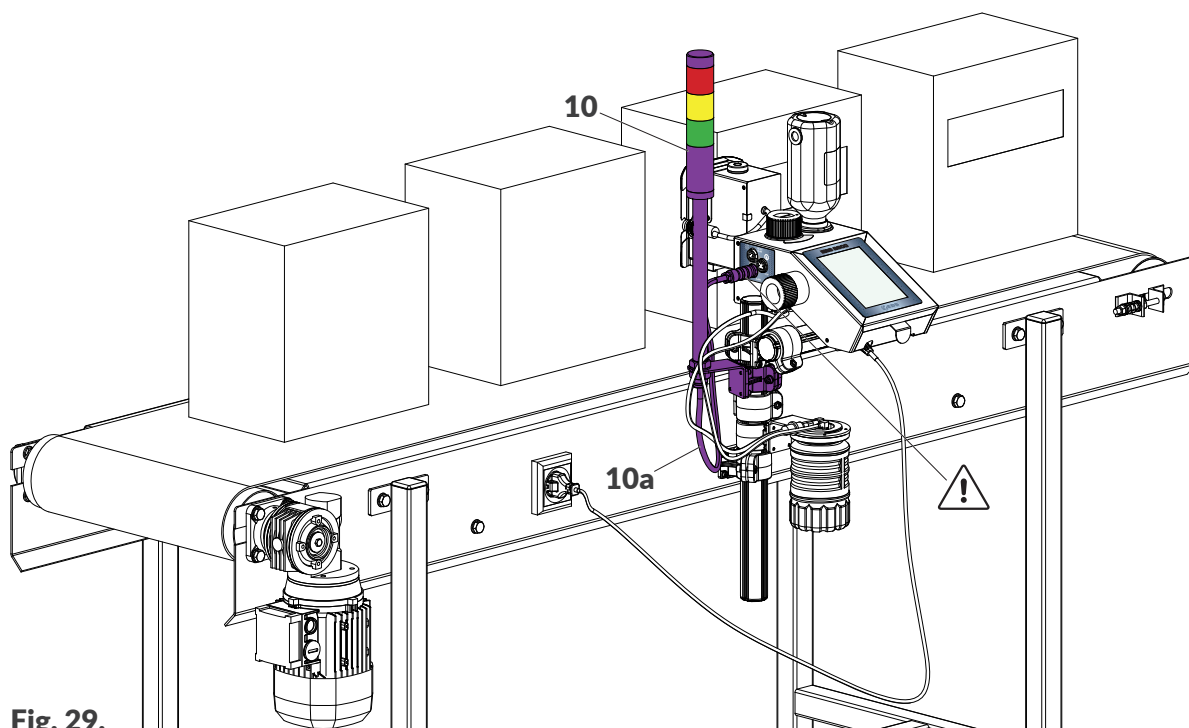



Fig. 29.

Component	Color
10 Status beacon.	
10a Cable: Status beacon ► Control unit.	

External status beacon **10** requires no additional setup. It operates properly immediately after it has been connected to the printer.



A status beacon equipped with an alarm buzzer is also available. If such a beacon is used, the sound alarm is heard when an error occurs, that is when the beacon glows red. For more information about options available contact an authorized representative of EBS Ink Jet Systeme GmbH.

2.3.4.2. ENCODER

The **Hi-Res** EBS-2600 printer may be provided with rotational speed sensor (encoder) **11** (see **Fig. 30**) that is designed to adjust printing speed to a variable speed at which objects to be labeled move on a factory conveyor. If the conveyor belt moves at a stable speed, no encoder is needed. Printing can be timed by an internal generator.

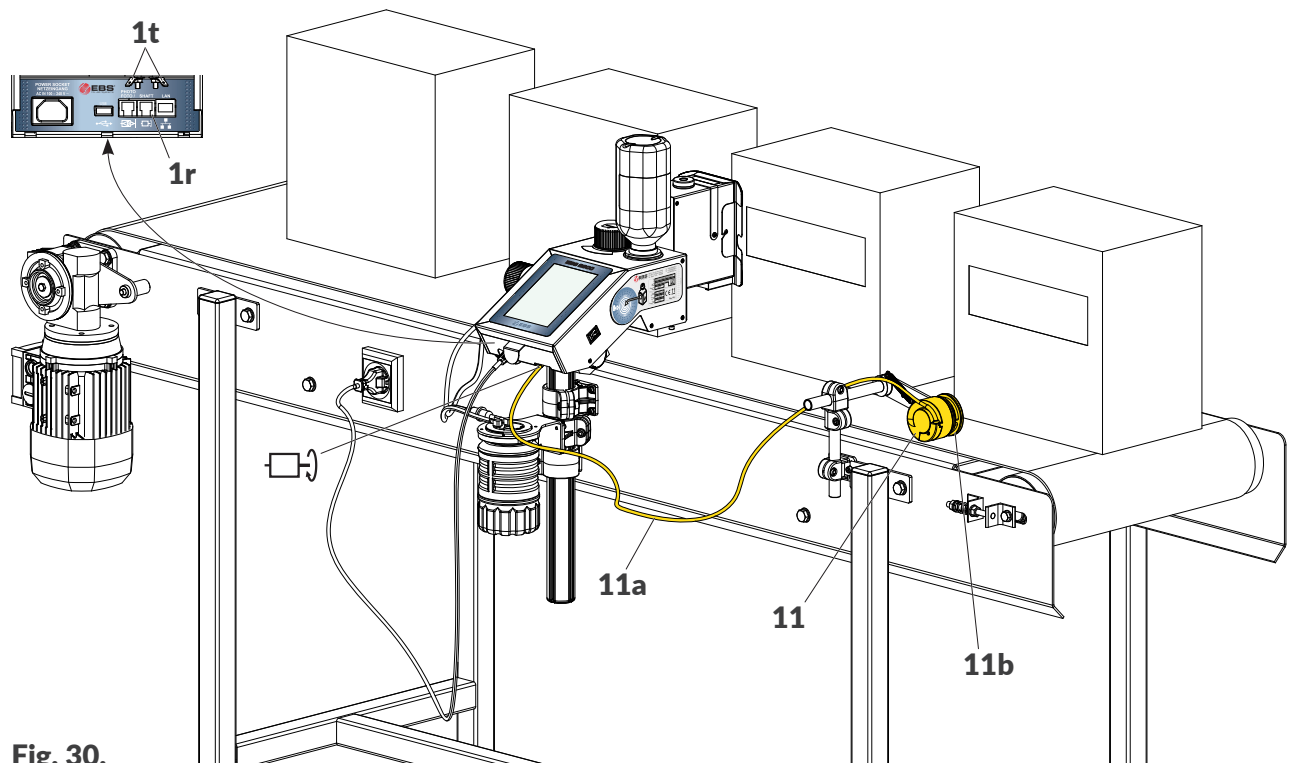


Fig. 30.

Component	Color
11 Encoder.	
11a Cable: Encoder ► Control unit.	yellow
11b Roll.	


Fig. 30 shows an example of an encoder. For more information about available encoders contact an authorized representative of **EBS Ink Jet Systeme GmbH**.



An encoder constant and an external source of timing pulses need to be set for correct operation of the encoder. For more details see **"7.1. General Settings"** and **"5.4.1. Project Parameters"**.

If the user's application requires that two printers be used (e.g. to label Euro-pallets) and that they be supported by one encoder, the encoder signal can be distributed with special splitter **14** (see **Fig. 33 on page 40**).

2.3.4.3. EXTERNAL PHOTODETECTOR

The **Hi-Res** EBS-2600 printers are provided with internal photodetector **2c** (see **Fig. 31**), as standard. If such a photodetector cannot be used (e.g. the user's photodetector must be used or a photodetector with a longer cable is needed), external photodetector **12** can be applied and can be connected to input  on back panel of the printer's control unit.

Two photodetectors can be used at the same time. The function can be used for synchronizing printouts while Euro-pallets **13** are labeled, for example (**Fig. 31**).

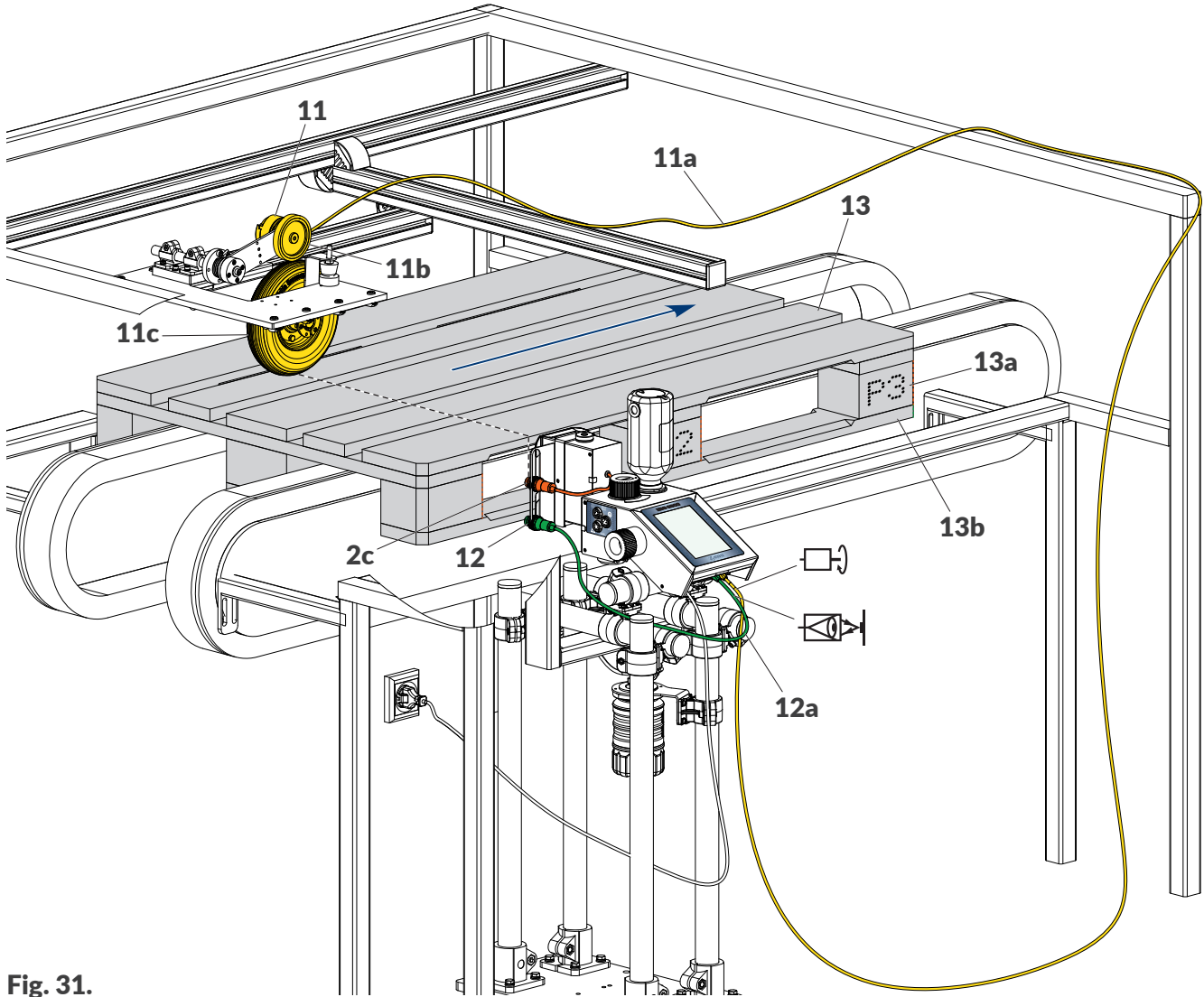

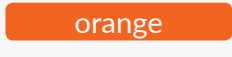





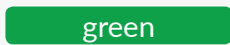



Fig. 31.

Component	Color
2c Internal photodetector. It triggers when it detects Euro-pallet bracket edges marked with 	 orange
11 Encoder with cable 11a , roll 11b 250 mm in circumference, and guide wheel unit 11c .	 yellow
12 External photodetector with cable 12a . It triggers when it detects the bottom board edge marked with  in a Euro-pallet.	 green
13 Euro-pallet, which consists of, among other things: - bracket 13a - bottom board 13b	 gray

Component	Color
12 External photodetectors. They trigger when they detect the bottom board edge marked with  in a Euro-pallet.	 green
13 Euro-pallet, which consists of, among other things: <ul style="list-style-type: none"> - bracket 13a - bottom board 13b 	 gray

In the application show in [Fig. 33 on page 40](#):

- In both printers, printing is timed by one encoder **11**; the signal from the encoder is distributed with splitter **14**,



Encoder **11**, together with roll **11b** and guide wheel unit **11c** (see [Fig. 31 on page 39](#)) where the wheel rolls along the pallet surface, is designed to match up the printing speed to the variable speed at which pallets move on the conveyor.

- Both printers can be synchronized to start and pause printing at the same time,
- One of the printers must print a project as a mirror image of the project; the project parameter |





▶ **Flip horizontal** [mm]:





Every application shall each time meet the user's requirements. For information about configuration capabilities of the **Hi-Res** EBS-2600 printers contact an authorized representative of EBS Ink Jet Systeme GmbH.

2.3.5.1. USE OF ONE PHOTODETECTOR - PRINTS NOT SYNCHRONIZED WITH EURO-PALLETS

If the printer is equipped with internal photodetector **2c** only, the photodetector can be used for:

- detecting whole Euro-pallets by sensing the bottom board () (see [Fig. 34 on page 42](#)),
- detecting successive brackets () (see [Fig. 35 on page 42](#) and [Fig. 36 on page 43](#)).

Detecting whole pallets

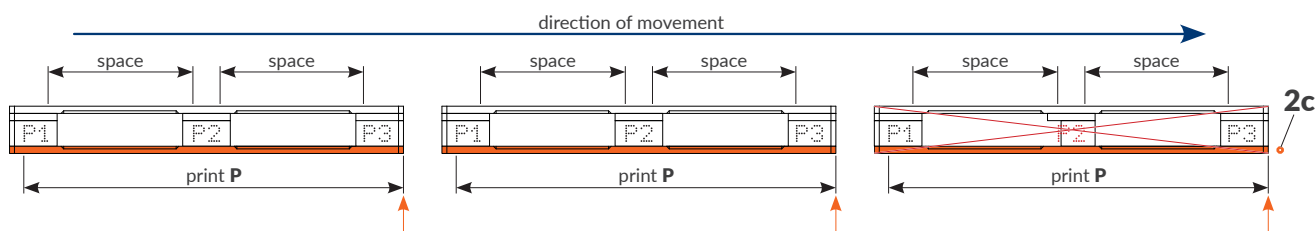
Internal photodetector **2c** detects whole Euro-pallets () by sensing the bottom board (see [Fig. 34 on page 42](#)). The printer “cannot see” brackets, so the project to be printed must include fixed spaces between print pieces (**P1, P2, P3**). **Spacer**-type objects  should be used. Printing of each of the print pieces is independent of the location and width of brackets in a pallet.



For more details about **Spacer**-type objects  see “5.4.4.4. Creating/Editing a Spacer-type Object”.

Example:

One of pallets to be labeled has a bracket whose width is smaller than that of other brackets.

**Fig. 34.**

If the location or size of a bracket is not to a standard, it may happen that a print piece is not made on the bracket correctly (see piece **P2** on the Euro-pallet on the right in [Fig. 34](#)).

Detecting brackets

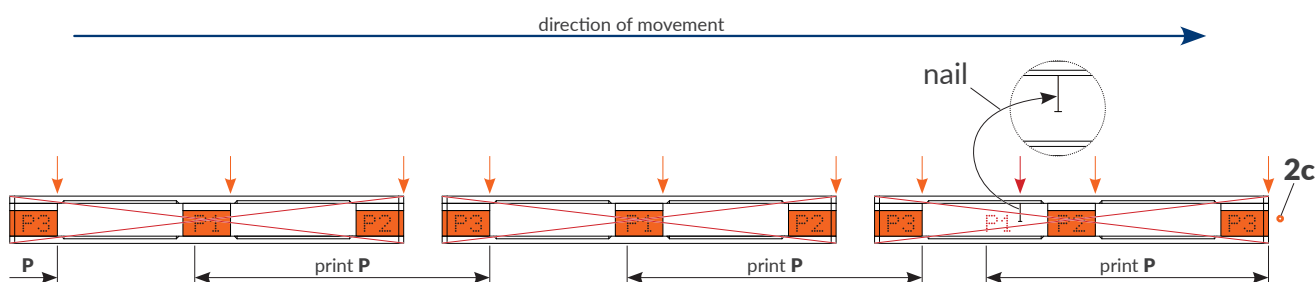
Internal photodetector **2c** detects successive brackets (↓) (see [Fig. 35 on page 42](#) and [Fig. 36 on page 43](#)). A project to be printed must be prepared in such a way that the print pieces (**P1**, **P2**, **P3**) are interleaved with **Line divider**-type objects **I**. An object of this type pauses printing of the consecutive print piece until the trigger signal occurs, that is until the consecutive bracket is detected. Printing of consecutive print pieces (**P1**, **P2**, **P3**) takes place only when triggered by photodetector **2c**.



For more details about **Line divider**-type objects **I** see “[5.4.4.3. Creating/Editing a Line divider-type Object](#)”.

Example:

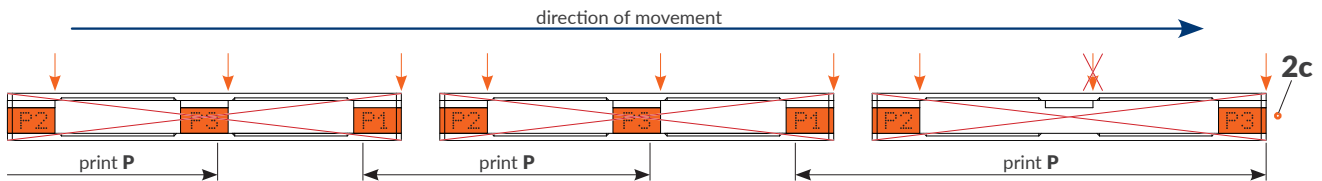
One of pallets to be labeled has a defect: there is a nail that triggers (↓) excess printing of a print piece.

**Fig. 35.**

If a pallet to be labeled has a defect such as a protruding nail that may trigger printing accidentally, the print piece will be directed to the air (see piece **P1** on a Euro-pallet on the right in [Fig. 35](#)). If prints are not synchronized with pallets, they will be shifted permanently. If such a case both the (defective) Euro-pallet **and all successive** ones will be labeled incorrectly.

Example:

One of pallets to be labeled has a defect: the middle bracket is missing.

**Fig. 36.**

If a pallet to be labeled has a defect such as a missing bracket, the print piece designed for the given pallet will be skipped (see the Euro-pallet on the right in **Fig. 36**). If prints are not synchronized with pallets, they will be shifted permanently. If such a case both the (defective) Euro-pallet **and all successive** ones will be labeled incorrectly.

2.3.5.2. USE OF TWO PHOTODETECTORA - PRINTS SYNCHRONIZED WITH EURO-PALLETS

It is advisable to use two photodetectors for every printer while Euro-pallets are labeled to avoid potential problems described in **“2.3.5.1. Use of one photodetector - prints not synchronized with Euro-pallets”**. Such an application is shown in **Fig. 33 on page 40**, for example. In the configuration in question, internal photodetectors **2c** are used for detecting brackets **13a**, that is for triggering printing of successive print pieces (**P1, P2, P3**). The external photodetectors **12** are used for detecting the beginning (↑) and the end (↓) of bottom board **13b** in every Euro-pallet **13**, and thereby they are used for synchronizing printouts with Euro-pallets.

Additional information about the application shown in **Fig. 33 on page 40**:

- The project parameter ► **Flip horizontal** [mm] must be set at:
 - for the printer shown in the foreground,
 - for the printer shown in the background (behind the Euro-pallet),
- Internal photodetectors **2c** must be selected to trigger printing of successive print pieces (**P1, P2, P3**) when the project parameter ► **Trigger source** = **Internal** and must be configured using the project parameters ► **Trigger type** and ► **Trigger signal mode**,
- External photodetectors **12** must be selected to synchronize printouts with Euro-pallets using the project parameter ► **Synchronization source** = **External** and must be configured using the project parameter ► **Synchronization signal mode**.



For more details about project parameters see section **“5.4.1. Project Parameters”**.

In each example given in this chapter, a project to be printed must be prepared in such a way that the print pieces (**P1**, **P2**, **P3**) are interleaved with **Line divider**-type objects **I**. An object of this type pauses printing of the consecutive print piece until the trigger signal occurs, that is until the consecutive bracket is detected. Printing of consecutive print pieces (**P1**, **P2**, **P3**) takes place only when triggered by photodetector **2c**.



For more details about **Line divider**-type objects **I** see “5.4.4.3. Creating/Editing a Line divider-type Object”.

Example:

One of pallets to be labeled has a defect: it has a nail that causes excess triggering (↓) of printing of a print piece (see piece **P1** on the Euro-pallet on the right in **Fig. 37**).

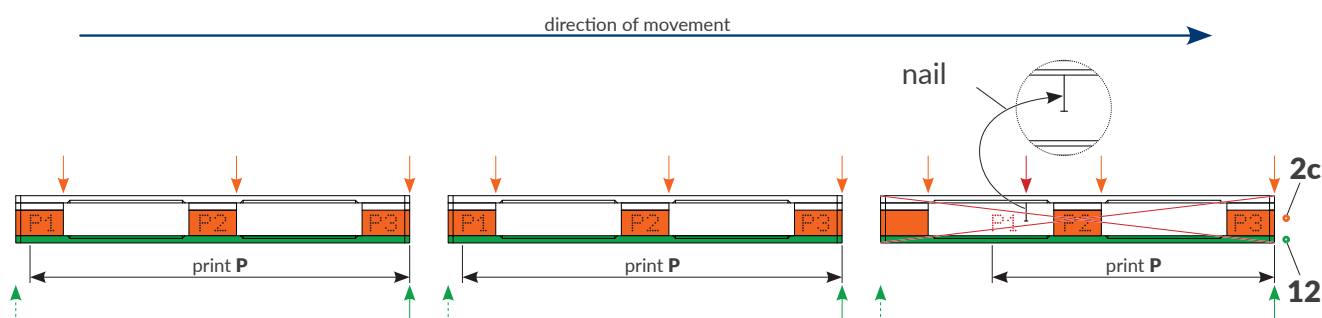


Fig. 37.

Owing to the application of external photodetector **12** to synchronization of printouts with Europallets, the printer will make the print that is planned for the following pallet in spite of excess triggering. No successive printing starts until the following pallet is detected. In such a case, the Euro-pallet (the defective one) that is currently labeled will be labeled incorrectly but every successive one will be labeled correctly.

Example:

One of pallets to be labeled has a defect: the middle bracket is missing (see the Euro-pallet on the right in **Fig. 38**).

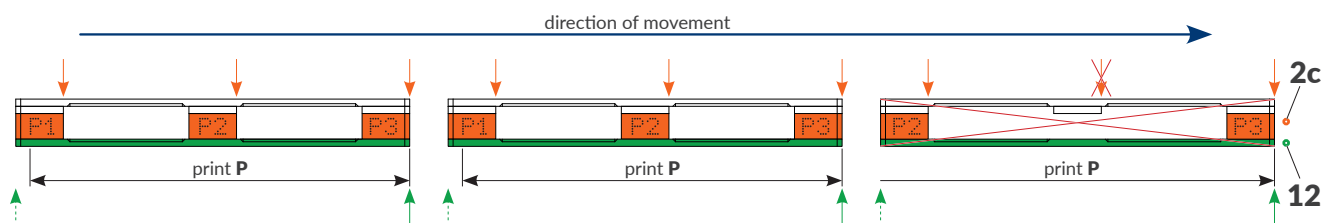


Fig. 38.

Owing to the application of external photodetector **12** to synchronization of printouts with Euro-pallets, when the successive Euro-pallet is detected the printer will make the planned print starting from the beginning (although the print on the current Euro-pallet has not been completed). In such a case, the Euro-pallet (the defective one) that is currently labeled will be labeled incorrectly but every successive one will be labeled correctly.

2.4. STARTING THE PRINTER UP FOR THE FIRST TIME

The **Hi-Res** EBS-2600 printer is started up for the first time during installation. Owing to that, the printer is able to verify the transponder in an ink bottle.

On installing and starting up the printer:


- Set basic parameters such as conveyor belt travel speed, source of trigger signal.
- Make a few test prints.

2.4.1. TEST PRINTS



 The procedure is not available to **operator**-type users.

To make the first print:

1. Create/import a text project; it is advisable to create a very simple project which contains e.g. one **Normal text**-type text object .



For more details on how to create projects see **"5.4. Creating a Project"**.

For more details about importing projects see **"7.7.1. Exporting/Importing Projects"**.

2. Open a project you have created/imported in order to print it.



For more details see **"4.3.1. Opening a Project for Printing"**.

3. Start printing.



For more details see **"4.3.2. Starting Printing"**.

4. Move a sheet of paper in front of the photodetector that is selected as the source of the trigger signal and in front of the face of the printhead to make prints.
5. Assess print quality. If the quality is unsatisfactory, carry out the purging/venting procedure for the printhead.



For more details see **"8.1. Purging/Venting the Printhead"**.

2.5. USER TRAINING

Many operations described in this Manual can be carried out by **instructed persons** only. Therefore, a local representative of **EBS Ink Jet Systeme GmbH** is obliged to deliver relevant training. Such training shall include at least the following topics:

- Safety requirements, potential risks,
- Basic installation of the printer,
- Operating the printer,
- Replacing consumables,
- Basis of printer configuration,
- Basic maintenance, diagnostic and service operations,
- Transporting and storing the printer.

CHAPTER 3

USER INTERFACE

3. USER INTERFACE



Access to selected user interface functions is restricted for **operator**-type users. For more details see further in this document.

The user interface enables the user to operate the printer easily and intuitively. This applies to both project management (editing, setting project parameters, starting/pausing printing) and printer maintenance and servicing.



Fig. 39.

1a Graphic LCD display with touch panel.

1k Printer ON/OFF button.

3.1. MAIN SCREEN

The main screen on the LCD display is used for:

- Monitoring printer state,
- Starting/pausing/monitoring printing,
- Signaling warnings and errors,
- Displaying basic information such as the current time,
- Previewing the project that is open for printing/being printed,
- Moving to the printer menu,
- Getting additional information or carrying out functions via icons.



Sounds may be generated while the touchscreen is being used. The sounds can be enabled/disabled by pressing **Keyboard audio feedback**.

The screen can be additionally configured (e.g. brightness can be modified) by pressing



Be careful not to touch the edge of the housing while pressing buttons on the LCD display – not to interfere with touch sensing.



Fig. 40.

A Status bar.

B Project window.

C Menu bar.

3.1.1. STATUS BAR



Fig. 41.






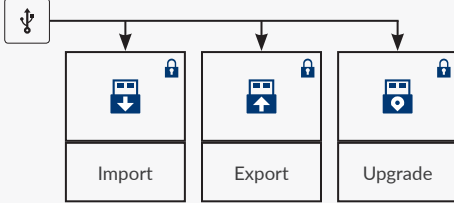


A1























Status bar **A** (see [Fig. 41](#)) is displayed at the top of the screen.



Items available on status bar **A**





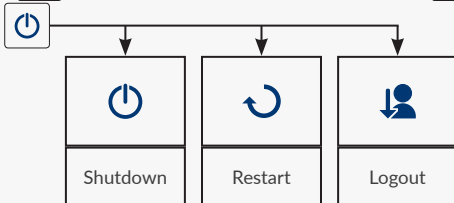
Item	Meaning
	Printing status: ■ - printing is OFF (readiness for printing), ► - printing is ON (waiting for an object to be detected by the photodetector selected as the source of the trigger signal), ► - printing is ON (making a print on an object).
	Messages: ! - informative, ! - warning, ! - error, no icon - all message have been read.

Items available on status bar A

Item	Meaning
	<p>Status of connection of a memory device to the USB port in the printer: no icon - no memory device is connected to the USB port,  - an appropriate memory device is connected to the USB port.</p> <p>Carry out USB memory operations, that is import files , export files , upgrade the printer software .</p> <div style="text-align: center;">  </div> <p>  USB memory operations are not available to operator-type users.</p>

	<p>Indicator of estimated ink level in the bottle [%]:</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td>1 to 9</td> <td>10 to 30</td> <td>31 to 60</td> <td>61 to 80</td> <td>81 to 100</td> </tr> </table> <p>If the  and  icons are displayed alternately, an ink problem may have occurred.</p> <p>The  icon in the status bar means that the printer is in service mode (it can print over a period of 50 hours).</p>							0	1 to 9	10 to 30	31 to 60	61 to 80	81 to 100
													
0	1 to 9	10 to 30	31 to 60	61 to 80	81 to 100								

A1	<p>Current Time. Set the current date and time.</p> <p>  The current date or time cannot be set by operator-type users. The operator-type users can only view the current date and time.</p>
-----------	--

	<p>Shut down  /restart  the printer; log the user out .</p> <div style="text-align: center;">  </div>
---	--

3.1.2. PROJECT WINDOW



Fig. 42.

Items available in project window B

Item	Meaning
	Open a project for printing.
	Edit the project and edit parameters of the project open for printing.
	<div style="display: flex; justify-content: center; align-items: center;"> <div style="text-align: center;"> </div> </div>
	<p> Editing of a project/project parameters is not available to operator-type users.</p>
B1	<p>Name of the project that is open for printing.</p> <p> If the name of a project is displayed in green, the project is ready for printing.</p>
	Select the previous / next project for printing within a folder.
B2	Project number within the folder / project count within the folder.
B3	Preview of the project that is open for printing.
	<p>Save modified parameters of the project.</p> <p> If a modification is not saved, you can print the project with the modified parameter as long as the project is not modified or the printer is not shut down.</p>

3.1.3. MENU BAR

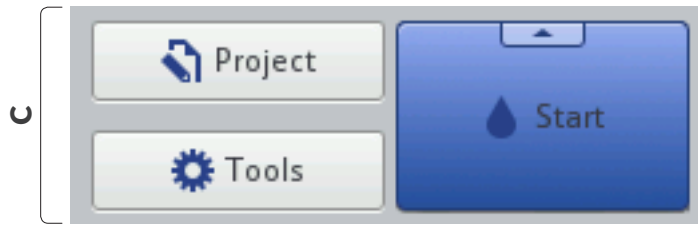
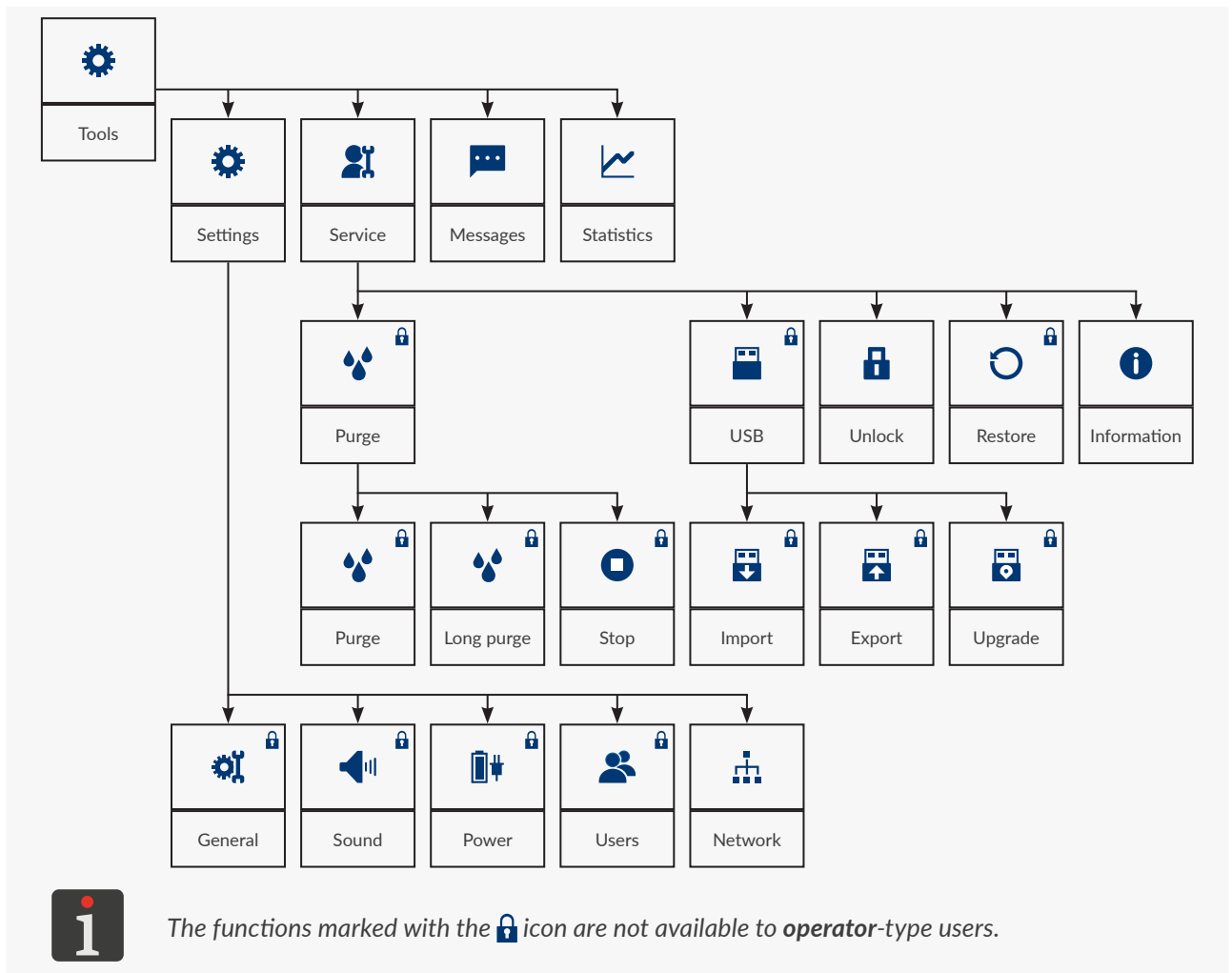


Fig. 43.

Items available in menu bar C

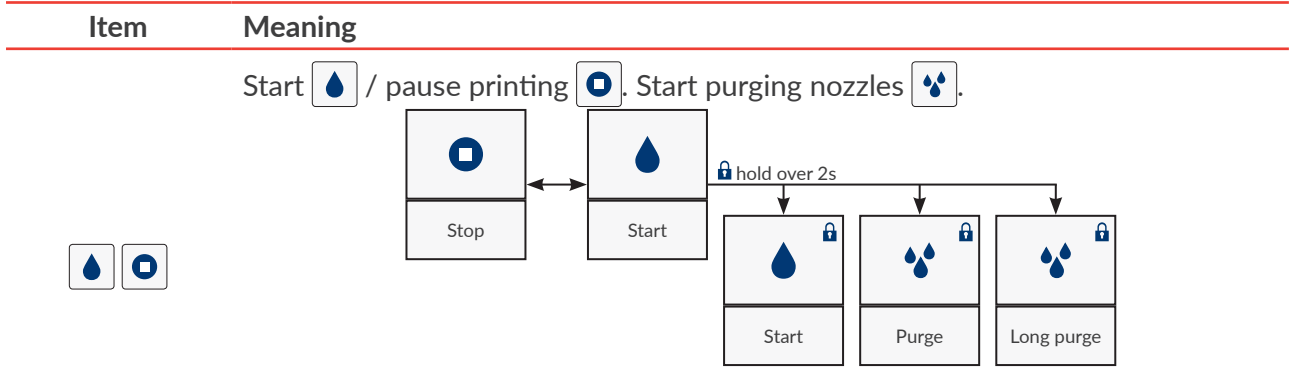
Item	Meaning
	Create a new project . Edit an existing project . Continue editing .
	<ul style="list-style-type: none"> Project <ul style="list-style-type: none"> Create project Edit project Continue editing
	The project creating/editing/continuing functions are not available to operator -type users.



Printer settings.



The functions marked with the icon are not available to **operator**-type users.

Items available in menu bar C



 The functions marked with the  icon are not available to **operator** -type users.

3.2. RULES FOR USING THE USER INTERFACE

3.2.1. NAVIGATION

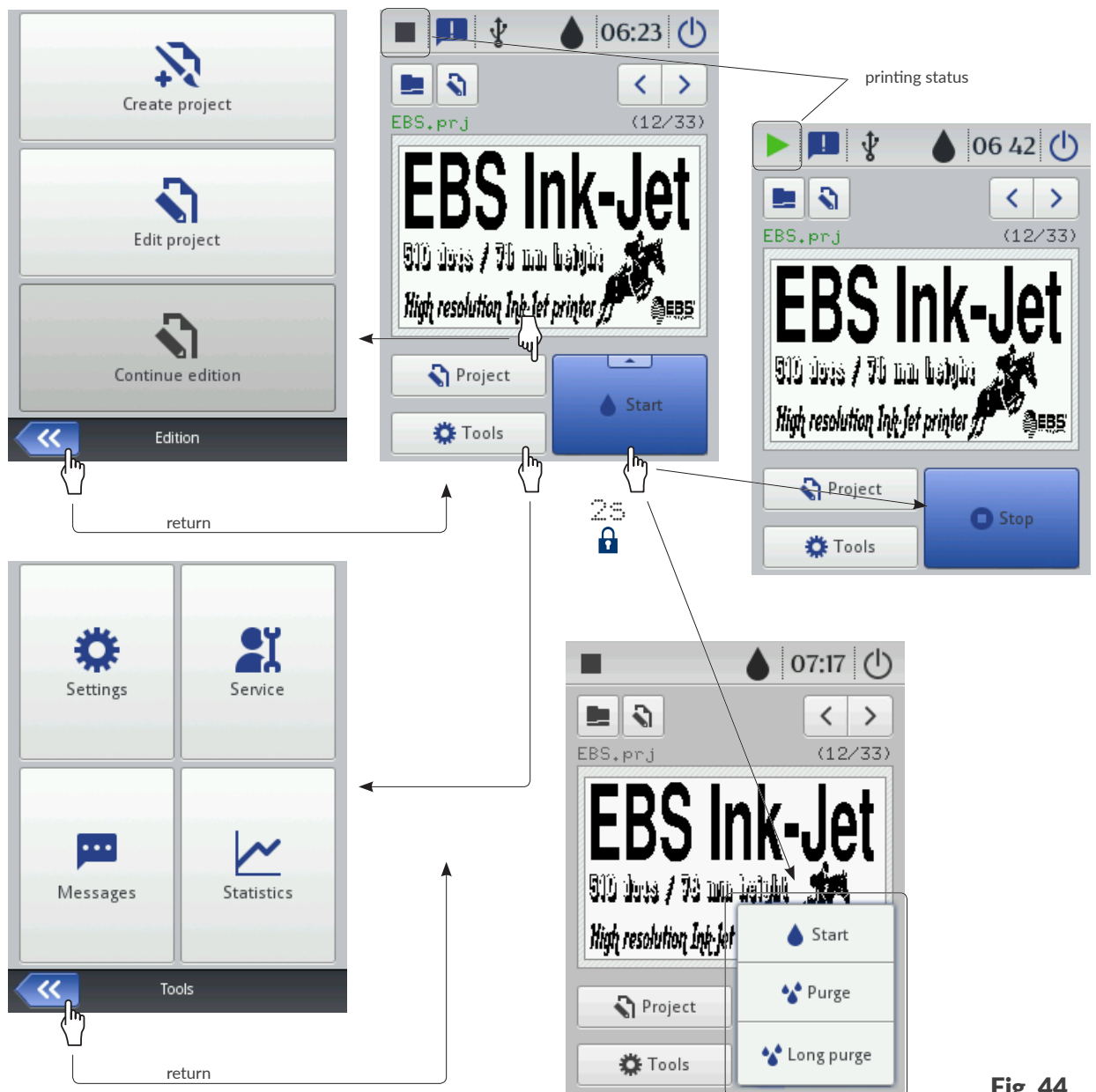


Fig. 44.

Most of printer functions are accessible with the **Project** / **Tools** icons in menu bar **C** on the main screen, e.g.



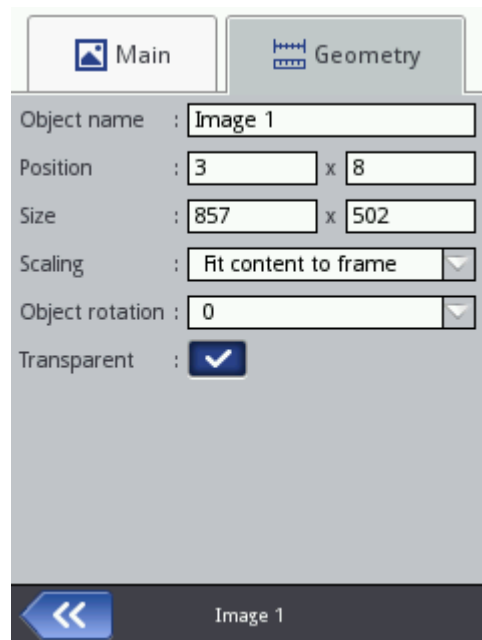
Additionally, the icon, which is used for returning to the previously displayed screen, is available in the menu.

Certain icons such as the **Start** icon on the main screen can be held over 2 seconds to display a drop-down list box with additional functions (see Fig. 44).

In certain windows, the parameters/functions are divided into groups marked with sheet tabs. If you select a sheet tab, the tab will be enclosed in the characters "|", e.g.

- | Geometry |
- | |

The tab marking described above is used further in this document.



3.2.2. DIALOG BOXES

Dialog boxes are displayed on the screen to provide the user with information or to request that a given operation be acknowledged (see Fig. 45).

What a dialog box (the icon, the background color) looks like depends on the type of message (an informative message, a warning or an error message) displayed in the dialog box.

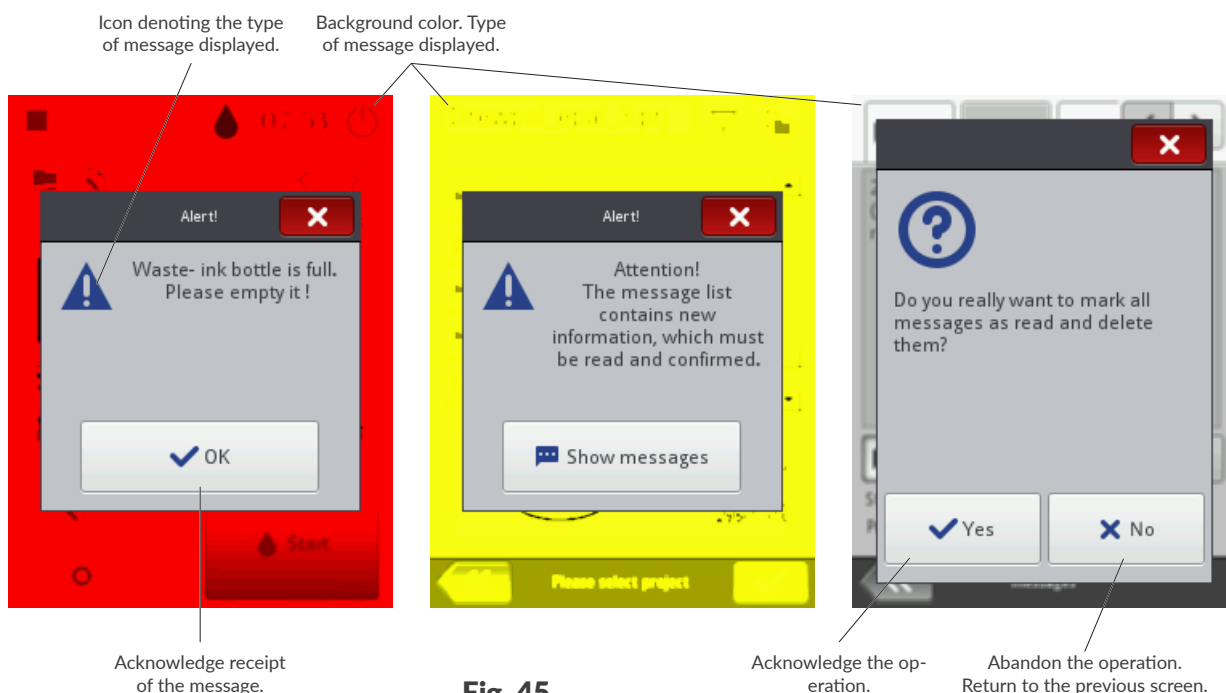







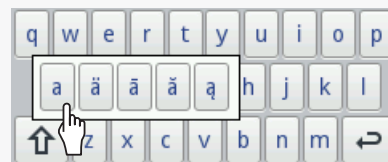


Fig. 45.

-  Delete the character that is on the left of the cursor position.
-  Delete the whole text (clear the edit area).
-  Reverse (undo) the deletion of the whole text.
The icon is available after pressing the  icon.
-  Return to the previous screen.
-  Save the text contained in the text box and close the keyboard.
The icon is available after text entering has started.
-  Close the keyboard without making any text changes.
The icon is available after text entering has started.

If a selected Latin character (e.g. e, r, t, y, u, i, o, a, s, d, g, l, z, c, n) is pressed and held, the list of diacritical characters (accents) associated with the selected Latin character becomes available.



If numeric values (e.g. values of selected parameters) are entered, the numeric keypad is displayed (see **Fig. 47**).

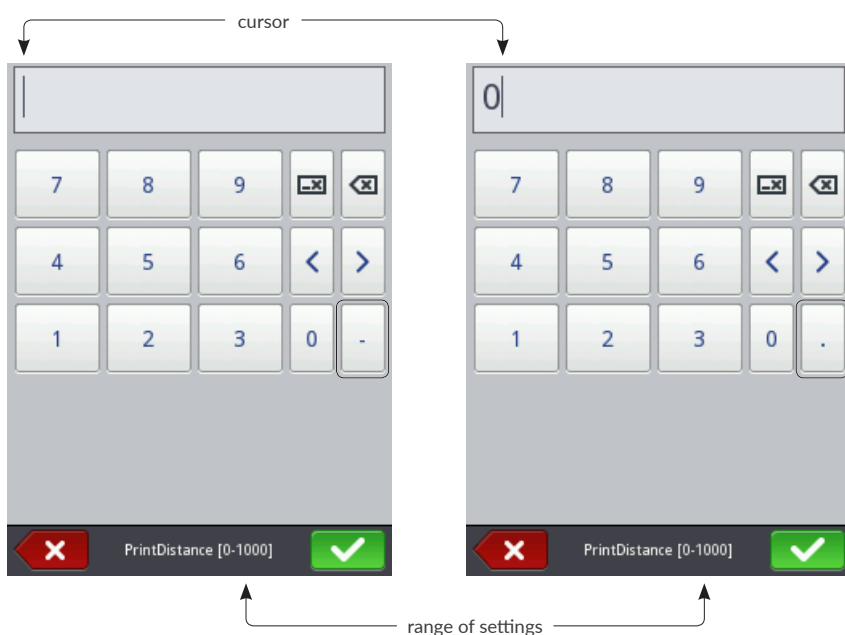


Fig. 47.

When a value is entered via the numeric keypad, a check is made to see whether it is within the setting range of a given parameter.

The  /  keys (or no key) are displayed depending on the position of the cursor in the edit area.

3.3. TYPES OF PRIVILEGES/USERS

Every user can have an individual access account that offers them access to project editor and printer settings; the access level varies according to the type of privilege.

In the printer, there are three different types of privileges (groups of users):

- **operator**,
- **administrator**,
- **serviceman**.

The **Hi-Res** EBS-2600 printer can be operated in two ways at the same time:


- locally: via the built-in LCD display,
- remotely: with the **EBS Web User Interface (WUI)** editor.

If local control and remote control take place at the same time, the type of privileges (access level) is used for establish which should take priority. The user who is at a higher level will take priority.

Operator-type users have the following privileges:

- Start/shut down the printer,
- Open a project for printing,
- Start/pause printing,
- Access selected menu branches.



*The functions that are not available to **operator**-type users are:*
- displayed in gray in the printer interface,
- marked with the  icon in this document.

The accounts of **operator**-type users are protected with passwords.

Any number of **operator**-type user accounts can be defined, named and protected with passwords.

Every **operator**-type user account can be deleted.

The **administrator**-type users have full access to the printer except specialist service commands available to **serviceman**-type users only.

The accounts of **administrator**-type users are protected with passwords.

Any number of **administrator**-type user accounts can be defined, named and protected with passwords.

All **administrator**-type user accounts can be deleted except one.

The accounts of **serviceman**-type users are designed for use by **skilled persons** only.

Two **serviceman**-type users named “**EBS**” and “**Service**” are defined in the printer. These users must not be deleted, modified or marked with ★.

3.3.1. CHANGING A USER

The printer is started up with a logged-in user by default. The user is marked with ★ in the user manager.



For more details see “7.5. Configuring Users”.

To change the logged-in user:

1. Press  ► .

The currently logged-in user is logged out.

A list of users defined in the printer is displayed on the screen.

2. Select a user to be logged in.
3. Enter the user password.

The password of the **administrator**-type user named “**Administrator**” is “**1**” by default.

Passwords can be modified by pressing  ►  ► .

4. Press  to acknowledge.

The selected user is logged in.

3.4. REMOTE CONTROL

The **Hi-Res** EBS-2600 printer can be operated via a web browser in two ways:

- by connecting with the printer direct or via an **Ethernet** network and using the **EBS Web User Interface (WUI)** editor,
- using the **Offline EBS Web User Interface (Offline WUI)** editor, which shall be installed on a PC with the Windows® operating system in advance.







*Operation of the **EBS Web User Interface** editor is not described in this document. For information about available options contact an authorized representative of **EBS Ink Jet Systeme GmbH**.*

3.4.1. EBS WEB USER INTERFACE (WUI)

The **Hi-Res** EBS-2600 printer can be operated via the **EBS Web User Interface (WUI)** editor.

With it the printer can be conveniently operated without the necessity of using the printer's built-in LCD display. This is particularly important when direct access to the printer at the workstation is restricted.

Operation of the printer via the **EBS Web User Interface (WUI)** editor creates the same possibilities as operation via the built-in LCD display described in this Manual, but it opens up additional possibilities such as:

- Transferring projects between the printer and a PC,
- Creating/editing bar/matrix codes with dynamic contents, which are graphic interpretation of text objects such as **Date/Time** , **Counter** , **Communications port**  and **Text file** ,
- Managing images in the printer via the **Image Manager**,
- Managing fonts in the printer via the **Font Manager**,
- Managing text files in the printer via the **Text File Manager**,
- Managing scripts in the printer via the **Script Manager**,
- Gaining access to a wider range of statistics,
- Estimating costs of printout,
- Operating a network of printers.

To run the **EBS Web User Interface (WUI)** editor in the web browser window on a PC:

1. Connect the printer to an **Ethernet** network or to a PC direct.



An **Ethernet** crossover cable, which is part of the installation kit can be used for connecting the printer to a PC.

The printer must be detached from mains electricity while an **Ethernet** cable is being connected!

2. Connect the printer to mains electricity and start it up.






For more details see **"4.1. Starting the Printer up"**.

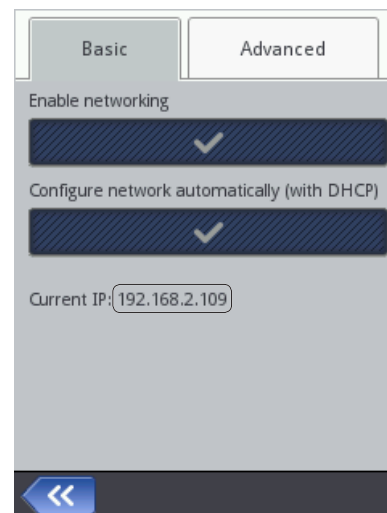
3. Set up a network connection.



For more details see **"7.4.1. Ethernet"**.

For the information on how to set up your network connection contact your network administrator.

4. Read the **IP** address of the printer by pressing    (the **Current IP** parameter in the figure on the right).



5. Enter the following address in the web browser on the PC: **http://Current IP**, where **Current IP** is the printer's **IP** address read at the previous point.

The **EBS Web User Interface (WUI)** editor runs in web browser window (see **Fig. 48**).



Fig. 48.

3.4.2. OFFLINE EBS WEB USER INTERFACE (OFFLINE WUI)

Projects for the **Hi-Res** EBS-2600 printers can be prepared with the **Offline EBS Web User Interface (Offline WUI)** editor installed on a PC in the Windows® environment in advance. Owing to it, projects can be conveniently edited without the necessity of using the printer's built-in LCD display. This is particularly important when direct access to the printer at the workstation is restricted. There is also no need for connecting a PC with the printer (direct or via an **Ethernet** network).

Projects prepared with the **Offline EBS Web User Interface (Offline WUI)** editor can be imported to the printer:

- remotely, with the **EBS Web User Interface (WUI)** editor after prior connection of a PC with the printer (direct or via an **Ethernet** network),
- via a **USB** memory device.



For more details see [“7.7. Exchanging Data via a USB Port”](#).

CHAPTER 4

OPERATION


4. OPERATION

4.1. STARTING THE PRINTER UP

To start the printer up:

1. Connect power plug **7a** (see [Fig. 2 on page 16](#)) to the electrical mains.
2. Press button **1k** on the side wall of control unit **1**.

The welcome screen is displayed on the LCD.

3.  Wait several dozen seconds.

The main screen is displayed on the LCD.

The printer is started up and ready to print an open project.

The user that is marked with  in the user manager is logged in by default.

For more details on how to change the logged in user see [“3.3.1. Changing a User”](#).



Depending on the value of the parameter      ► **Autostart current project:**
 - Printing of the open project begins immediately after the printer has started up
 or
 - Printing has to be started manually.

4.2. SHUTTING THE PRINTER DOWN

The printer can be shut down regardless of the state it is in, e.g. during printing. In such a case, printing pauses.



When filled with ink, the printer can remain shut down for a period **not longer than 1 week**.

4.2.1. SHUTTING DOWN IN REGULAR MODE

To shut down the printer in regular mode:

1. Press  ► .

The goodbye screen is displayed on the LCD display.

2.  Wait a few seconds.

The LCD display is blank.

The printer is shut down.



A sound signal can also be used to signal that the printer is shut down. The sound can be turned on/off by pressing     ► **Printer off sound signal.**

3. Pull out power plug **7a** (see [Fig. 2 on page 16](#)) from the electrical mains, if need be.

4.2.2. SHUTTING DOWN IN EMERGENCY SHUTDOWN MODE

The printer can be shut down in emergency shutdown mode only if a printer failure occurs, when shutting down in regular mode, which lasts longer, could cause further damage, e.g. ink spilling.

The printer can be shut down in emergency shutdown mode in two ways.

Press button **1k** on the side wall of the printer's control unit **1** and hold it over 4 seconds or

Detach power cord **7** (see [Fig. 2 on page 16](#)) from mains electricity or from control unit **1**.



*Guard **1m**, which protects connection sockets on the back panel of control unit **1**, has a magnetic holder. Before power cord **7** is detached from control unit **1**, guard **1m** should be removed. If you do not have time to do this, the guard will fall out of its holders while power cord **7** is detached from control unit **1** on an emergency basis.*

4.2.3. RESTARTING THE PRINTER

The printer can be restarted (i.e. shut down and started up again) regardless of the state it is in, e.g. during printing. In such a case, printing pauses.

To restart the printer:


1. Press   .

The goodbye screen is displayed on the LCD.

2.  Wait a few seconds.

The LCD display is blank.

The welcome screen is displayed on the LCD.

3.  Wait several dozen seconds.

The main screen is displayed on the LCD.

The printer is restarted and ready to print the open project.

The user that is marked with ★ in the user manager is logged in by default.


4.3. PRINTING

The printer is ready for printing when an appropriate project is open for printing.

4.3.1. OPENING A PROJECT FOR PRINTING

The name and preview of the project currently open for printing (the so called active project) are displayed on the main screen.



To open a project for printing:

1. Press  on the main screen

The project library is displayed.

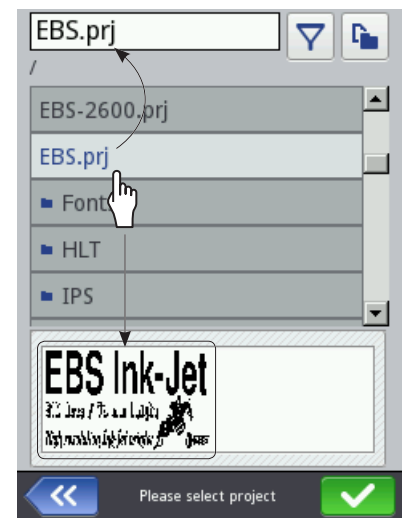


For more details about the project library see “5.9. Managing Projects”.



2.  Select a project that you wish to print or enter the name of such a project in the white text box at the top of the window. The selected project is highlighted in a lighter color, its name is displayed at the top of the window while its preview is displayed in the lower part of the window.
3. Press  to acknowledge.

The selected project is open for printing.

The main screen is displayed and it shows the preview of the project that is open for printing.




If the project open for printing is correct, the project name is displayed on the main screen in green.



The project that is open for printing (within one folder only) can be modified by means of the  /  icons on the main screen, too.





4.3.2. STARTING PRINTING

To start printing the open project:











1. Press the  icon in menu bar **C** on the main screen.



If the parameter  ▶ **Edit before printing is started** or  ▶ **Edit counter before starting printing** is active in any project object, then before printing starts, the request to enter initial values is displayed. Initial values can be saved as the default values for a given object.

A sound signal can be used to signal that printing has started, too. The sound can be turned on/off by pressing  ▶  ▶  ▶  ▶ **Start printing sound signal**.

The printer enters printing mode in which:





- in **continuous printing mode** (the project parameter  ▶ **Printout repetition** = ):
the  icon in the status bar on the main screen is replaced with the  icon,
printing of a print starts immediately.
- in **printing modes different from continuous** (the project parameter  ▶ **Printout repetition** is different from ):
the  icon in the status bar on the main screen is replaced with the  icon,
the printer waits until an object is detected by the photodetector selected as the source of the trigger signal,
when an object is detected by the photodetector, printing starts and the  icon is replaced with the  icon.




4.3.3. PAUSING PRINTING

To pause printing:

1. Press the  icon in menu bar **C** on the main screen.



A sound signal can be used to signal that printing has paused, too. The sound can be turned on/off by pressing  ▶  ▶  ▶  ▶ **Stop printing sound signal**.

The  /  icon in the status bar on the main screen is replaced with the  icon.

The printer finishes printing the project, and then printing pauses.

The printer enters the state of readiness for printing.

4.4. PREVIEWING A PROJECT

The preview of the project that is open for printing/being printed is displayed on the main screen. If the width of a project exceeds the width of the preview window, the project can be shifted within the preview window (see [Fig. 49](#)).











Fig. 49.

4.5. USING AN INK BOTTLE

Indicator **A2** (see [Fig. 50](#)) in status bar **A** on the main screen offers access to the following pieces of information:

- An estimate of the amount of the ink remaining in the ink bottle [%],

					
0	1 to 9	10 to 30	31 to 60	61 to 80	81 to 100

- A problem with ink (e.g. the ink has passed its expiration date, the number of printouts exceeded a limit, an incorrect bottle or no bottle is installed) or with the **IMS** system (Ink Monitoring System) - the icons  and  are displayed alternately,
- Service mode is activated (printing is enabled over a period of 50 hours) - the  icon is displayed.

For detailed information about the bottle of ink installed in the printer press indicator **A2** in status bar **A** on the main screen.

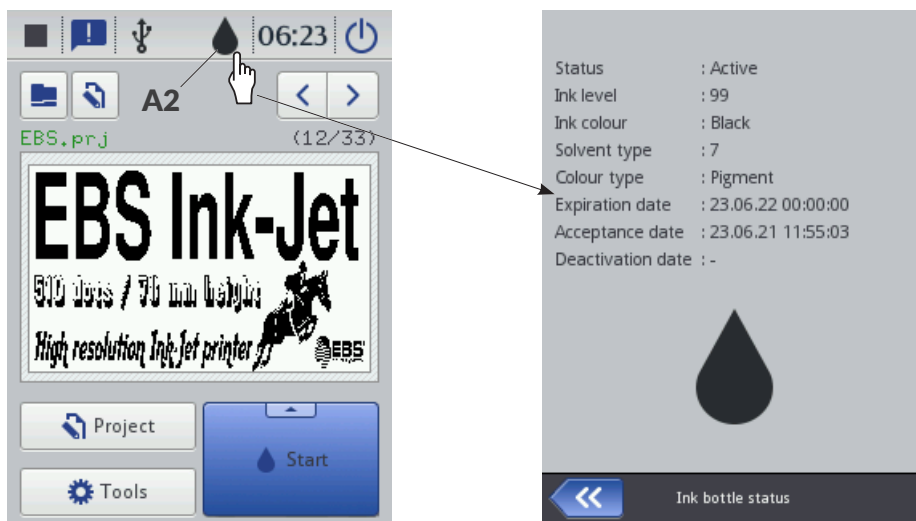


Fig. 50.

The time needed to use up the ink contained in an ink bottle depends on parameters such as the number of dots in the projects printed, ink pressure, intensity, etc.



* If a **correct** bottle of ink is installed but the printer cannot recognize it successfully, you can contact an authorized representative of **EBS Ink Jet Systeme GmbH** to activate service mode. In this mode printing can continue over another 50 hours until a new bottle of ink is installed or a service intervention is made. For more information see **"9.3.3. Releasing Protections"**.

The information that the ink in the bottle is critically low (a warning) or that the bottle is empty (an error) is displayed in a dialog box. The dialog box is also displayed each time the printer starts up. The above-mentioned information can be communicated via an optional status beacon, too.

4.5.1. REPLACING THE INK BOTTLE



Contact an authorized representative of **EBS Ink Jet Systeme GmbH** to order a new bottle of ink of an appropriate type. The necessary information is available on the label of the bottle installed in the printer or by pressing indicator **A2** in status bar **A** on the main screen.

As soon as the **critically low ink warning** is communicated, it is advisable to replace the ink bottle with a new one. The replacement of the bottle does not require printing to pause unless an error occurs.



As soon as the **empty ink bottle error** is communicated, printing pauses and the ink bottle must be replaced with a new one.



To replace the bottle:



Tools required:

- a bottle of ink of an appropriate type,
- protective gloves that are resistant to ink/wash-up,
- safety goggles.



1. Press to acknowledge the warning/error message.



For more information on how to handle warning/error messages see **"9.1.1. Error Messages"**.

2. Put transponder **4a** of a new bottle of ink **4** to transponder reader **1i** on the side wall of control unit **1** to get the ink verified and accepted by the printer.

When a new bottle of ink is accepted, a relevant icon and the message **(I99000) New ink container successfully accepted.** are displayed on the LCD display.

3. Acknowledge the message saying that ink bottle **4** has been accepted.
4. Unscrew empty bottle **4** (see **Fig. 51**).



Replace the bottle in dust-free conditions, as far as possible, to minimize the penetration of contaminants and dirt into the printer's ink system. Do not leave the printer with an ink bottle removed for longer than it is necessary to replace the bottle.

Dispose of the empty bottle following the selective collection principles.

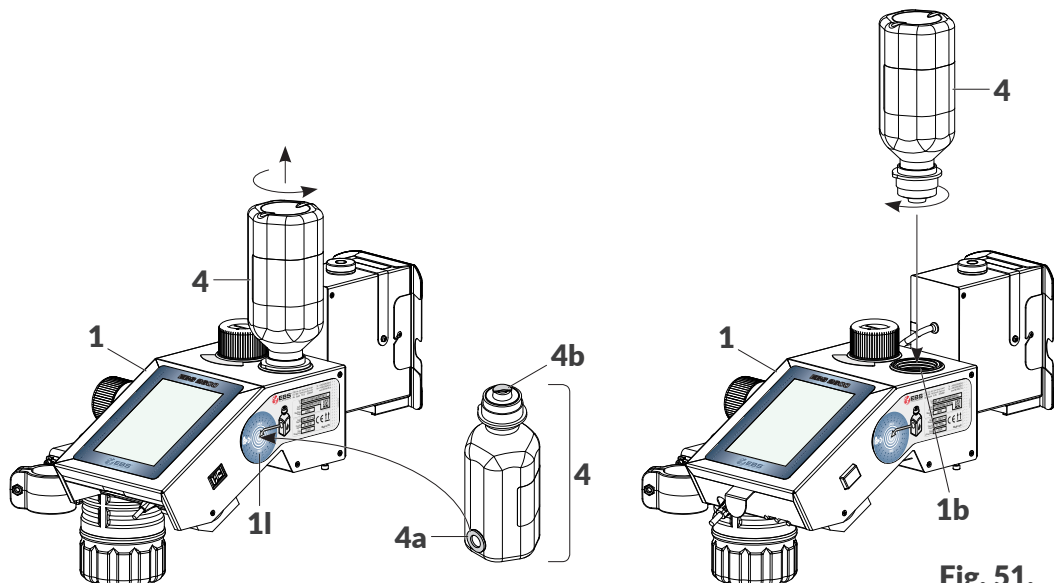


Fig. 51.

5. Tear aluminum protective film **4b** out of new bottle **4**.

6. Install bottle of ink **4** screwing it into socket **1b**.




The turning of a new bottle of ink upside down will not cause the ink to spill out because the bottle is equipped with a protective valve.

The new bottle is installed.

7. Start the purging/venting procedure.



*For more details see **"8.1. Purging/Venting the Printhead"**.*

8. Make a test print.
9. Repeat the purging/venting procedure, if need be; keep repeating it until a correct print is obtained.
10. If the printer does not print, press the  icon in menu bar **C** on the main screen, to start printing again.

4.6. EMPTYING THE WASTE BOTTLE



Tools required:

- protective gloves that are resistant to ink/wash-up,
- safety goggles,
- absorbent material or a metal vessel for collecting waste.



The amount of liquid waste (see [Fig. 52](#)) in transparent waste bottle **3a** should be subjected to systematic visual assessment during printer operation.

The procedure for emptying the waste bottle should be followed when about 2/3 of its volume is filled with liquid waste.



NOTE: A risk for printer damage!

If the waste bottle is not emptied at the right time, it may be overfilled, and this may lead to printer damage!

To empty the waste bottle:

1. Put absorbent material under waste bottle **3a** (see [Fig. 52](#)).
2. Unscrew and remove waste bottle **3a** when about 2/3 of its volume is filled.
3. Empty waste bottle **3a**.



NOTE:

Dispose of the liquid waste following the local waste disposal regulations!

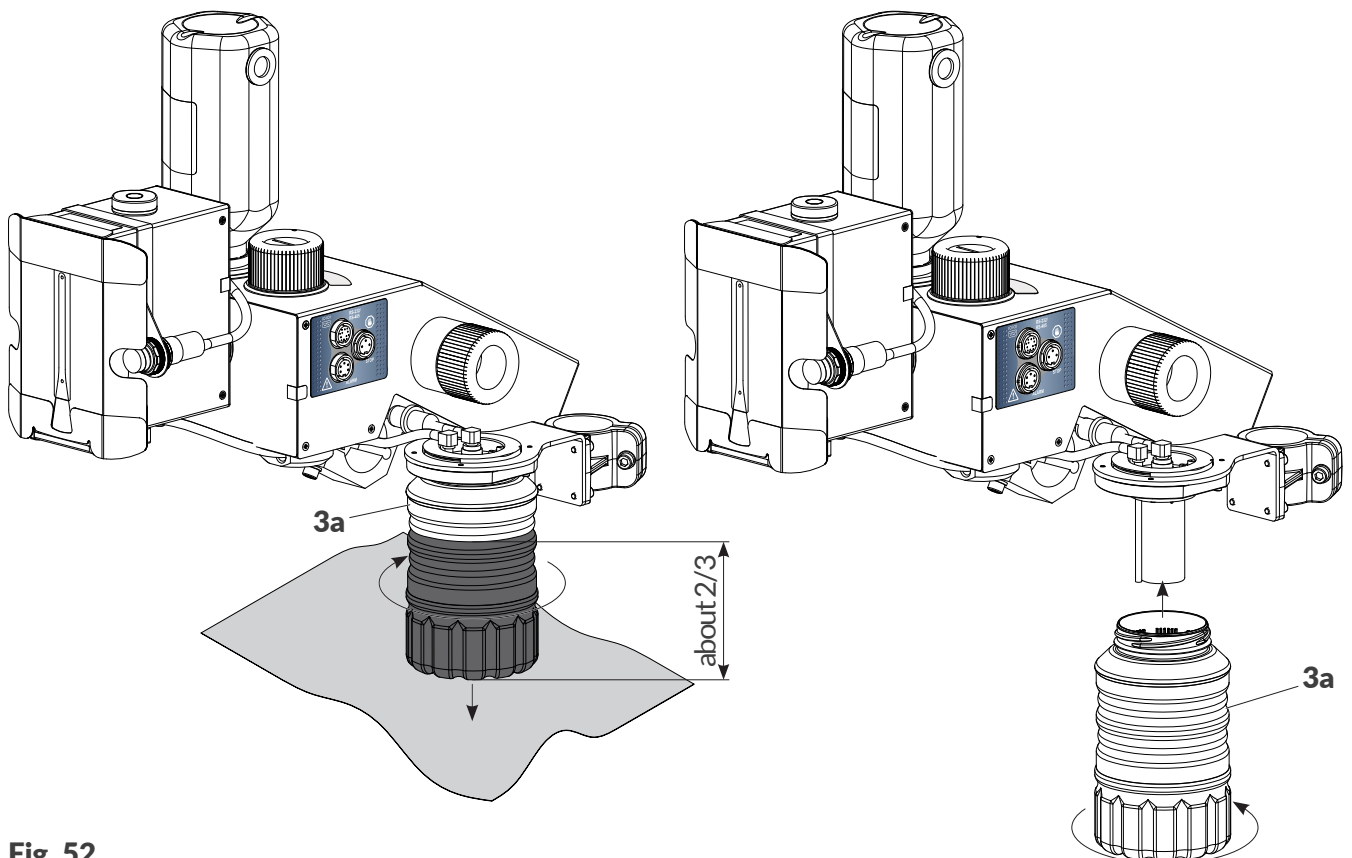


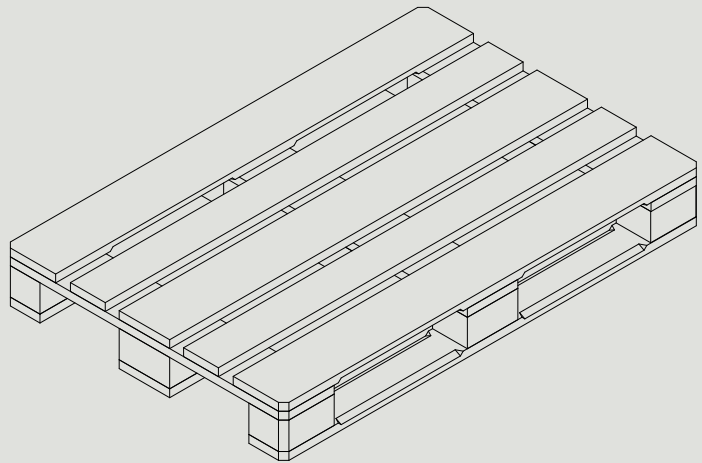
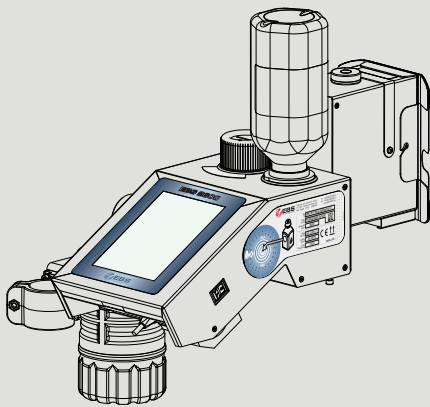
Fig. 52.

4. Screw the emptied waste bottle **3a** into the socket in the drip system.
The procedure for emptying the waste bottle is finished.

Hi-Res

EBS-2600 USER MANUAL

Industrial DROP ON DEMAND Printers
Original Instructions



Part 2 of 3

CHAPTER 5

EDITING

5. EDITING PROJECTS AND PROJECT PARAMETERS

5.1. PROJECT EDITOR



The functions of creating/editing/continuing editing a project are not available to **operator**-type users. Owing to that, **operator**-type users have no access to the project editor.

The project editor starts when any function designed to create/edit projects is selected:

Icons	Function	
Project ► Create project	Create a new project.	
Project ► Edit project	Edit an existing project.	
Project	Edit the project that is open for printing/ being printed.	

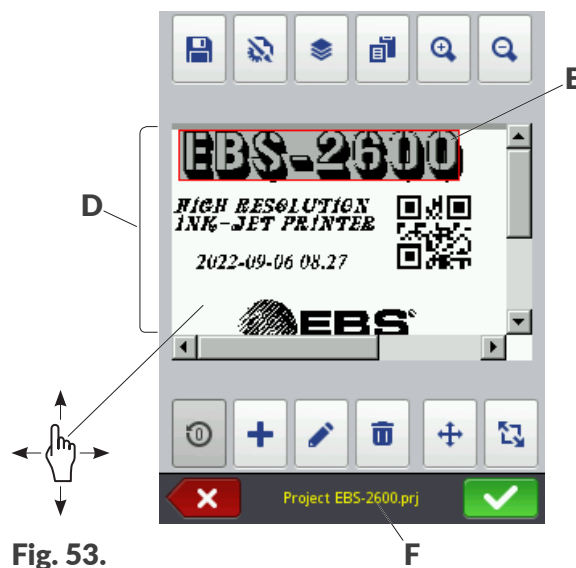



















Fig. 53.


- D** Project preview.
- E** Object. The currently selected object is displayed on a gray background and framed in red.
- F** Project name.

The following functions are available in the project editor window:

Icon	Function
	Save the project with its existing name or a different name.
	Edit parameters of the project that is being edited.

Icon	Function
	Object manager.
	Copy the selected object to the clipboard (the icon is visible when an object is selected in the project editor window).
	Paste the object from the clipboard (the icon is visible only when objects are stored in the clipboard and none of the objects in the project editor window is selected).
	Increase the scale of the project preview.
	Decrease the scale of the project preview.
	Restore initial values of Counter -type objects  and Text file -type objects  .
	Add an object.
	Edit contents and parameters of the selected object.
	Delete the selected object.
	Restore an object from the project trashcan (the icon is visible only when there are objects in the trashcan and none of the objects in the project editor window is selected).
	Change the position of an object in a project.
	Change the size of an object.
	Exit the project editor without saving the project that has been edited.
	Save the project with its exiting name and exit the project editor.
	Move to the previous screen when no modifications have been made.

Color-coding in the project editor window

- The currently selected object is displayed on a gray background and framed in red (see [Fig. 53 on page 76](#)).
- Project name **F** (see [Fig. 53 on page 76](#)) changes its color to yellow if project contents have been modified in any way. When the project is saved, its name changes back to white.
- **Communications port**-type text objects and bar/matrix* codes  are displayed on multi-colored backgrounds.



* **Communications port**-type bar/matrix codes  can be created by means of the *EBS Web User Interface* only.





Basic notions and rules applied to project editing and printing

- A **project** is created/edited by the user with the **project editor**; it consists of **objects**.
- When printing of a prepared **project** is enabled, a **printout** is made on an object.
- The appearance of a **printout** on an object depends on **project parameters** and **parameters of the objects** included in the **project**.
- A **print** is made of **dots**.
- **Printed dots** form **columns** and horizontal **rows**.
- **Print resolution** in the vertical direction is defined as a number of **rows** (or **dots**) per unit of height.

- **Print** resolution in a horizontal direction is defined as a number of **columns** (or **dots**) per unit of length.
- For adequate legibility and proportionality of prints, it is recommended that resolution in a horizontal direction be equal to resolution in the vertical direction of 180 dpi (about 7086 dots/meter).


5.1.1. ADDING AN OBJECT

To add an object to the project:

1. Press .
2. Select the object group that contains a required type of object:
 -  - text objects,
 -  - shapes,
 -  - the other objects.
3. Select a type of object.





For more details about objects see [“5.2. Types and Parameters of Objects”](#).


4. Set the parameters that are relevant to a given type of object.
5. Press  to acknowledge.
The object is created in the left top corner of the project.

5.1.2. EDITING THE SELECTED OBJECT

To edit an object in the project:



1. Select an object you wish to edit in the project editor window.
2. Press .
3. Modify contents or parameters of the object.


Contents or parameters of objects can also be edited by pressing  ►  ►  in the object manager.


4. Press  to acknowledge.
The project editor is displayed.

5.1.3. CHANGING THE POSITION OF AN OBJECT IN A PROJECT


The position of an object in a project can be changed in two ways:

- by modifying elements of the object parameter  ► **Position**, that is the coordinates of the left top corner of the object frame,
- by using the  function.

The position of an object in a project can be changed with the  function within the project area only. No project can be extended beyond the project area.





An object can be extended beyond the project area if elements of the parameter  ► **Position** are modified.


To change the position of an object in a project:

1. Select an object whose position you wish to change in the project editor window.
2. Press .

The color of the frame of the object changes to green.




Navigation icons are displayed:

-  - to move the object by one pixel to the left,
-  - to move the object by one pixel to the right,
-  - to move the object by one pixel up,
-  - to move the object by one pixel down.



3. Use navigation icons or indicate the position of the object directly in the project area.
4. Press  to acknowledge the position of the object.

The position of the object is changed.

5.1.4. CHANGING THE SIZE OF THE OBJECT FRAME


The size of the frame of text objects  and of **Image**-type objects  can be changed only when the value of the parameter  ► **Scaling** is different from **Fit frame to content**. Otherwise, the object frame will not change its size.

You can change the size of the object frame in two ways:

- by modifying elements of the object parameter  ► **Size**,
- by using the  function.









The object cannot be shifted beyond the project area while the size of the object frame is being changed.


To change the size of the object frame:

1. Select an object whose size you wish to change in the project editor window.
2. Press .

The color of the frame of the object changes to violet.




Navigation icons are displayed:

-  /  - to move the left edge of the frame by one pixel to the left / right,
-  /  - to move the right edge of the frame by one pixel to the left / right,
-  /  - to move the top edge of the frame by one pixel up / down,
-  /  - to move the bottom edge of the frame by one pixel up / down.

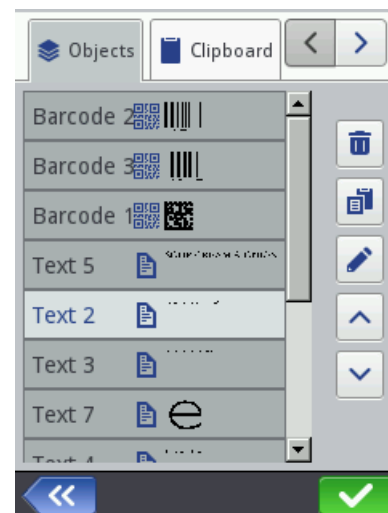
3. Use navigation icons or indicate the position of the right bottom corner of the object frame directly in the project area.
 4. Press  to acknowledge the size of the object frame.
- The size of the object frame is changed.

5.1.5. USING THE OBJECT MANAGER


The object manager consists of three parts (sheet tabs):

- : List of all objects in the project,
- : Clipboard,
- : Trashcan.

Press  in the project editor window to start the object manager.



List of objects






Press  in the object manager window to display the list of objects.

The list contains all objects used in the project, including the objects that are invisible in the editor window because:

- Their position in the project expands beyond the editor window,
- They are veiled by objects that are not set to be transparent.


The position of an object on the list relative to other objects defines whether the object is “on top” or “beneath”.

The following functions are available on the list of objects in the object manager:

Icon	Function
	Delete the selected object (move the object to the trashcan).
	Copy the selected object to the clipboard.
	Edit contents or parameters of the selected object.
	Move the selected object on the list by one position up.
	Move the selected object on the list by one position down.



Clipboard

Press  in the object manager to display the clipboard.

The clipboard contains all objects that have been copied to it with the  function in the project editor. The clipboard has global reach, that is, it shows objects copied to any project. Owing to that,

the clipboard can be used for copying objects from one project to another. The clipboard is emptied automatically each time the printer is shut down.

The following functions are available in the clipboard:



Icon	Function
	Delete the selected object from the clipboard.
	Paste the selected object into the project.

Trashcan

Press  in the object manager window to display the trashcan.

The trashcan contains all objects that have been deleted **from the currently edited project**. The trashcan is automatically emptied when the project editor closes.

The following functions are available in the trashcan:

Icon	Function
	Permanently delete the selected object from the trashcan.
	Restore the selected object from the trashcan to the project.


5.1.6. DELETING AN OBJECT

When an object is deleted, it is moved to the trashcan. This means that deletion is reversible; an object can be restored only by the time that the project editor closes, the object is removed from the trashcan or the trashcan is emptied.



For more details about trashcan management see [“5.1.5. Using the Object Manager”](#).

To delete an object from a given project:

1. Select an object you wish to delete in the project editor window.
2. Press .

A dialog box with the request to acknowledge the operation is displayed.

An object can also be deleted by means of the  ►  ►  function in the object manager.

3. Press  to acknowledge.

The selected object is deleted (moved to the trashcan).

The project editor is displayed.

5.1.6.1. RESTORING A DELETED OBJECT

The objects deleted while the project is being edited are stored in the trashcan. Therefore objects can be restored back to the project. An object can be restored only by time that the project editor closes, the object is removed from the trashcan or the trashcan is emptied.



For more details about trashcan management see [“5.1.5. Using the Object Manager”](#).

To restore a deleted object:

1. Press to restore a deleted object. The icon is visible only when there are objects in the trashcan and none of the objects in the project editor window is selected.
You can restore an object using the function ► ► in the object manager. The list of the objects that are in the trashcan is displayed.
2. Select an object you wish to restore to the project.
3. Press .
The selected object is restored to the project and thereby deleted from the trashcan.
4. Press to exit the trashcan and return to the project editor.

5.1.7. COPYING OBJECTS

Owing to the clipboard, every object included in a project can be copied and pasted into the given or another project. Objects are stored in the clipboard until the printer shuts down. Therefore an object can be pasted from the clipboard by the time that the printer shuts down or the object is removed from the clipboard.



For more details about clipboard management see [“5.1.5. Using the Object Manager”](#).

To copy an object:

















1. Select an object you wish to copy in the project editor window.
2. Press .
The object is copied to the clipboard.
You can also copy an object to the clipboard using the function ► ► in the object manager.
3. Press to paste the object that has been copied to the clipboard. The icon is visible only when there are objects in the clipboard and none of the objects in the project editor window is selected.
You can paste objects from the clipboard into the project also using the function ► ► in the object manager.
The list of the objects that are in the clipboard is displayed.
4. Select an object you wish to paste to the project.
5. Press .
The selected object is pasted into the project but it remains in the clipboard and can be pasted





again to the same or another project.

6. Press  to exit the clipboard and return to the project editor.


5.2. TYPES AND PARAMETERS OF OBJECTS

The objects that are available while projects are being edited via the built-in LCD display belong to three groups:

Group	Object
 Text	 Normal text
	 Date/Time
	 Counter
	 Communications port
	 Text file
 Shapes	 Line
	 Rectangle
	 Ellipse
 Other	 Barcode
	 Image
	 Line divider
	 Spacer
	 Intensifier

The use of the **EBS Web User Interface (WUI)** editor to operate the printer allows the user to create/edit bar/matrix codes whose contents are dynamic and which are graphic interpretation of text objects such as **Date/Time** , **Counter** , **Communications port**  and **Text file** .

5.2.1. COMMON PARAMETERS OF ALL OBJECTS

After pressing the  icon, the parameters of the selected object are available in the project editor window. The list of the parameters available depends on the type of object.

The following parameters are common to all types of objects:

Parameter	Range of settings
 ► Object name	
Name of an object, given automatically while the object is being created. It can be modified but it must be unique within the project.	
 ► Position	
Coordinates (X, Y) of the left top corner of the frame of an object. They can be modified manually or by means of the  function in the project editor. For Spacer -type objects  , Line divider -type objects  and Intensifier -type objects  , only the horizontal coordinate (X) can be modified.	
 ► Size	
Size (width, height) of the frame of an object. The values can be modified manually or by means of the  function in the project editor. The size of the frame of text objects  and of Image -type objects  can be changed only when the value of the parameter  ► Scaling is different from Fit frame to content . The parameter is not available for Spacer -type objects  , Line divider -type objects  and Intensifier -type objects  .	
 ► Scaling	Without scaling, Fit frame to content, Fit content to frame
Mode of adjusting the size of the frame of an object to the frame contents. The list of settings available for the parameter depends on other settings, e.g. the type of object or the selected font. The parameter is not available for shapes  as well as for Spacer -type objects  , Line divider -type objects  and Intensifier -type objects  .	
 ► Object rotation	0, 90, 180, 270
Rotation of an object through 90°. The parameter is not available for shapes  as well as for Spacer -type objects  , Line divider -type objects  and Intensifier -type objects  .	
 ► Transparent	<input checked="" type="checkbox"/> / <input type="checkbox"/>
When this option is enabled for an object, the object becomes transparent, i.e. the objects that are under it can be seen. The parameter is not available for Spacer -type objects  , Line divider -type objects  and Intensifier -type objects  .	
The sequence of objects in a project can be changed with the object manager  ►  ►  /  .	
	For more details see “5.1.5. Using the Object Manager” .

5.3. EDITING A PROJECT

To edit any project stored in the project library:

1. Press  **Project** ►  **Edit project**.

The project library is displayed.



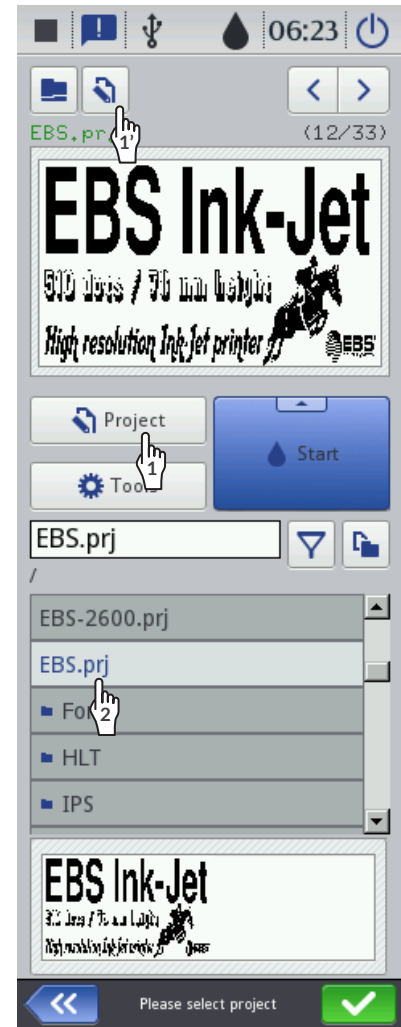
For more details about the project library see “5.9. Managing Projects”.




2. Select a project that you wish to edit or enter the name of such a project in the white text box at the top of the window.

The selected project is highlighted in a lighter color, its name is displayed at the top of the window while its preview is displayed in the lower part of the window.

3. Press  to acknowledge.



The project editor window is displayed; the selected project is open and can be edited.



Press the  icon on the main screen to start editing (either) the project that is open for printing/being printed ( **Project**) or project parameters ( **Parameters**).

If you save the project open for printing/being printed, this may mean that the project is reloaded and if that is so a relevant message is displayed in the dialog box.

The projects that are in the printer's project library can also be edited using the **EBS Web User Interface**.

Press  **Project** ►  **Continue editing** to continue editing the project open for editing using the **EBS Web User Interface**.

5.4. CREATING A PROJECT


To create a new project:

1. Press  **Project** ►  **Create project**.

The project library is displayed.





For more details about the project library see [“5.9. Managing Projects”](#).

2. Enter the name of a new project in the white text box in the upper part of the window.
 3. Press  to acknowledge.
- The project editor window is displayed; a new (empty) project is opened and can be edited.

5.4.1. PROJECT PARAMETERS



The project parameters can be accessed in two ways:

- Press  ►  **Parameters** (on the main screen) - to temporarily modify parameters of the project open for printing/being printed



If parameters of the project open for printing/being printed have been modified, the  icon is displayed on the main screen to allow the user to save the temporarily modified parameters as project parameters.



- Press  ►  (in the project editor window) to modify parameters of the project that is being edited.

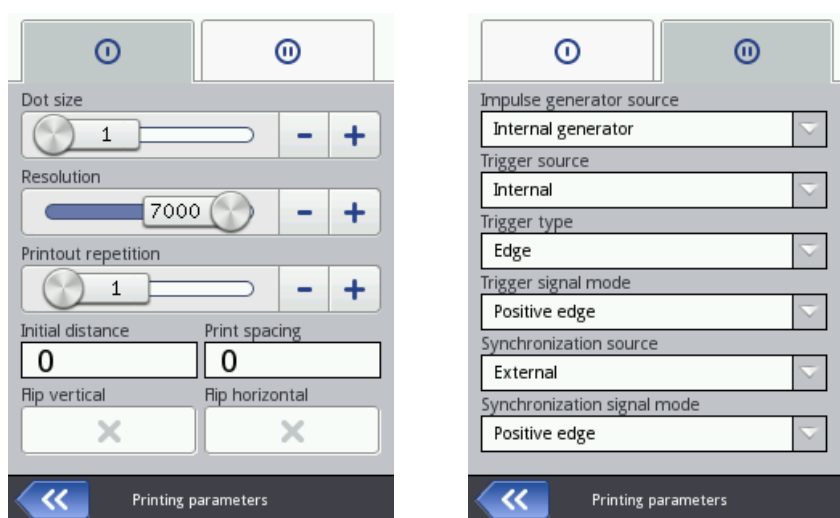




Fig. 54.

The values of project parameters are modified as follows:



Numerical parameters

Parameter values can be modified using:

- the numeric keypad available when you click on a value,
- the  /  icons to increment / decrement the values,
- a slider

Binary (bistable) parameters

Values can be modified by means of icons:

-  - the parameter is inactive; press to activate,
-  - the parameter is active; press to deactivate.


Parameters whose values are included in a list

Values can be modified:

- by selecting an item from the parameter setting list available when you click on a value.



If the value of a given parameter is incorrect, it is highlighted on a red background and must be corrected before the parameter is saved.

Project parameter	Range of settings
Project width [cm/px]	max. about 56.5 cm (for  ► Resolution = 7086 drops/meter) max. 4000 px

The parameter is available only after the  icon has been pressed in the project editor window.



The width of a project is given in the unit defined in the **Size unit** parameter.

The real width of a project may differ from that set with the **Project width** parameter because it is limited to the last column containing at least one dot. The blank space after the last column is removed.



*Examples of the use of the **Project width** parameter are given further in this chapter.*

The maximum project width expressed in pixels (columns) is 4000.

*The maximum project width expressed in centimeters depends on the value of the parameter  | ► **Resolution** and for the recommended setting  ► **Resolution** = 7086 dots/meter is about 56.5 cm.*


Size unit	[cm], [px]
------------------	------------

The parameter is available only after the  icon has been pressed in the project editor window.

A unit of width for a project.

Project parameter

Range of settings

 ► Dot size	1 to 10
---	---------

Print intensity level.



Adjust print quality to the type (hygroscopicity) of surface to be printed on.

If you raise the value of the parameter, the intensity of prints increases as the volume of the ink drops jetted from the printhead increases. An increase in intensity involves higher consumption of ink.


The maximum achievable intensity of prints depends on printing speed. If print intensity is too high for a given printing speed, the printer generates a sound signal to signal the error (provided that an appropriate warning is set up, see [“7.3.2. Sound Signal Settings”](#)) and then reduces the printing speed).




For more details about the relationship between intensity and printing speed see [“7.1.1. Maximum Printing Speed”](#).

The parameter  ► **Dot size** defines intensity for a printout as a whole. However, you can modify the intensity of a selected part/selected parts of a printout. Use **Intensifier**-type object(s)  for that purpose.




For more details about **Intensifier**-type objects  see [“5.4.4.5. Creating/Editing an Intensifier-type Object”](#).

 ► Resolution [dots/meter]	1000 to 7500 (recommended value: 7086)
--	---



Resolution in a horizontal direction given as a number of dots or vertical rows (columns) per meter.

A modification to the parameter  ► **Resolution** visually results in a change in the width of the printed characters and in the width of the entire print.

To get equal width and height of objects such as a circle, a square or a two-dimensional (2D) code:



- Set print resolution in a horizontal direction (the parameter  ► **Resolution**) at the same value as resolution in the vertical direction,
- Set the **Conveyor speed** or **Encoder constant** parameter at the real speed or constant of the factory conveyor.



The print resolution in the vertical direction is 180 dpi (about 7086 dots/meter).

 ► Printout repetition	 , 1, ..., 20
--	--

Number of project repetitions which form a single printout.

All repeated printouts of a project have always the same contents, even if the project contains objects that provide dynamic contents.

If  ► **Printout repetition** > 1, the distance between the beginnings of consecutive reprints is defined with the parameter  ► **Print spacing**.

Continuous objects (e.g. cables, hoses, pipes) can be labeled in **continuous printing mode** ( ► **Printout repetition** = ). In this mode, a printout is made immediately after printing starts.

Project parameter

Range of settings

 ► **Initial distance** [mm]


0 to 1000 mm

Initial distance for a printout.

A distance from the point where the photodetector selected as the source of the trigger signal triggers up to the point where printing of a printout should start. The distance is given in millimeters. It is used for positioning a print relative to the beginning of an object to be labeled.

The initial distance is part of a print and consists of empty columns added at the beginning of the print.




For additional information about (and examples of) the parameter  ► **Initial distance** see further in this chapter.

 ► **Print spacing** [mm]


0 to 1000 mm

Space (in millimeters) between the beginnings of consecutive reprints (of a project) that form one printout.



For additional information about (and examples of) the parameter  ► **Print spacing** see further in this chapter.

If the space set with the parameter  ► **Print spacing** is smaller than the print length, the repeated prints will be made one after another.

 ► **Flip vertical**

/

Vertical direction of printing: normal () or upside down ():

-  ► **Flip vertical:** ; normal printout:

TEST 1234567

-  ► **Flip vertical:** ; reversed printout:

TEST 1234567

The parameter can be useful when an object to be labeled is upside down.


 ► **Flip horizontal** [mm]

/

Horizontal direction of printing: normal () or "opposite" ():



-  ► **Flip horizontal:** ; normal printout:

TEST 1234567

-  ► **Flip horizontal:** ; printout flipped along the x-axis (a mirror image):


7654321 TEST

The parameter can be useful when you have to label objects from right to left, e.g. if prints are made on transparent materials and should be legible from the opposite side.


The parameter is used in an example of an application presented in [“2.3.5. Labeling Euro-pallets”](#) where two **Hi-Res** EBS-2600 printers are used for labeling Euro-pallets. In that application one printer prints normally ( ► **Flip horizontal:**) and the other makes a mirror image ( ► **Flip horizontal:**).

Project parameter


Range of settings


 ▶ Impulse generator source	Internal generator, External source
---	-------------------------------------



The source of timing signals, *i.e.* the signals that determine when consecutive columns of a text are printed:


- **Internal generator:** printing at a constant speed timed by the printer's internal generator. The printing speed is set with the **Conveyor speed** parameter. This mode is recommended when the conveyor belt travel speed is known and steady.
- **External source:** printing at a speed that depends on how fast objects to be labeled move on a factory conveyor. Printing is timed by a rotational speed sensor (an encoder) connected to input  in the control unit. To adjust printing speed with an encoder correctly it is required that the **Encoder constant** parameter be set. This mode is recommended when the conveyor belt travel speed is not steady.

 ▶ Trigger source	Internal, External, Both
---	--------------------------

Select a source of the signal that triggers printing of a project or a project part preceded by a **Line divider**-type object :



- **Internal:** printing is triggered by a built-in photodetector,
- **External:** printing is triggered by an external photodetector connected to input  in the control unit,
- **Both:** printing is triggered by both of the above-mentioned photodetectors.

The trigger signal can be further configured with the parameters  ▶ **Trigger type** and  ▶ **Trigger signal mode**.




The parameter  ▶ **Trigger source** applies when the printer is not in continuous printing mode (the value of the parameter  ▶ **Printout repetition** differs from .

 ▶ Trigger type	Edge, Level
---	-------------

The **Trigger type** parameter defines the printer's response after print triggering:

- **Edge:** when the active edge of the trigger signal occurs, the printer makes one printout consisting of a defined number of reprints (the project parameter  ▶ **Printout repetition**), and then awaits the re-occurrence of the active edge of the trigger signal to make another printout; the mode is dedicated to printing one printout on every object. For examples see [Fig. 57 on page 94](#) and [Fig. 58 on page 94](#).
- **Level:** when the active edge of the trigger signal occurs, the printer starts making printouts consisting of a defined number of project reprints (the project parameter  ▶ **Printout repetition**) and continues printing the reprints as long as the object being labeled is within reach of the photodetector selected as the source of the trigger signal; the mode is dedicated to making many printouts on one object or to making printouts on continuous objects, e.g. on tubes.

For examples see [Fig. 55 on page 93](#) and [Fig. 56 on page 93](#).

The parameter  ▶ **Trigger type** applies when the printer is not in continuous printing mode (the value of the parameter  ▶ **Printout repetition** differs from .

Project parameter

Range of settings



 ▶ **Trigger signal mode**




see the description of the parameter

Type of trigger signal.

The parameter can be used, e.g. for selecting trigger mode for the type of photodetector applied or for deciding whether triggering should take place at the beginning or at the end of an object to be labeled.

The range of values of the parameter  ▶ **Trigger signal mode** depends on the set value of the parameter  ▶ **Trigger type**:


-  ▶ **Trigger type = Edge**: to select the active edge of the trigger signal, that is the edge that involves the detection of the beginning of an object (**Negative edge/Positive edge**).
For examples see [Fig. 57 on page 94](#) and [Fig. 58 on page 94](#).
-  ▶ **Trigger type = Level**: to select the active level of the trigger signal, that is the level that means the presence of an object (**High level/Low level**).
For examples see [Fig. 55 on page 93](#) and [Fig. 56 on page 93](#).

The parameter  ▶ **Trigger signal mode** applies when the printer is **not in continuous printing mode** (the value of the parameter  ▶ **Printout repetition** differs from .

 ▶ **Synchronization source**



Internal, External, Off

Select a source of the signal for synchronizing printouts with objects such as Euro-pallets.

The parameter is used in applications with two photodetectors, where one photodetector (the parameter  ▶ **Trigger source**) is used for triggering printing and the other is used for synchronizing printouts with objects. Applications of this type are used for labeling Euro-pallets, for example.



For more details about applications with two photodetectors see [“2.3.5. Labeling Euro-pallets”](#).

A photodetector different from the one used for triggering printing must be selected as the source of the synchronization signal. Owing to that the range of values of the parameter  ▶ **Synchronization source** depends on the value of the parameter  ▶ **Trigger source**.

 ▶ **Synchronization signal mode**





Positive edge, Negative edge

Type of signal for synchronizing printouts with objects.

The parameter can be used, e.g. for selecting synchronization mode for the type of photodetector applied or for deciding whether synchronization should take place at the beginning or at the end of an object to be labeled.



Examples of applications of selected project parameters


In all presented examples:

- **A** - width of a project in the project editor window (the project parameter **Project width**),
- **A'** - real width of a project (when the blank space after the last column is removed),
- **B** - initial distance for a print (the project parameter  ► **Initial distance**),
- **C** - space between the beginnings of consecutive project reprints (the project parameter 
► **Print spacing**),
- The number of project reprints (the project parameter  ► **Printout repetition**) is
3 - in [Fig. 55](#) through [Fig. 58](#),
 (continuous printing mode) - in [Fig. 59](#),
- **Px** - project reprints (e.g. **P1, P1, P1**) of exactly identical contents.

Example 1

Fig. 55 and Fig. 56 show the configuration in which:

- The printer is not in **continuous printing mode** (the value of the parameter  **Printout repetition** is different from  which means that when printing starts (↓) (▶) it awaits the active edge of the trigger signal (↓) (▶).

-  **Trigger type = Level**, and this means that:

When the beginning of an object is detected, that is when the active edge of the trigger signal occurs (or if the active level of the trigger signal exists while printing starts - see Fig. 56), the printer starts making consecutive printouts consisting of initial distance **B** and three repetitions **Px** and it continues making the printouts as long as the object being labeled is within reach of the photodetector selected as the source of the trigger signal.

If the end of the object is detected during printing, that is the trigger signal enters an inactive state (↓), the printer completes the current printout and then awaits the trigger signal's active edge (↓) to start making consecutive printouts consisting of initial distance **B** and three reprints **Px**.

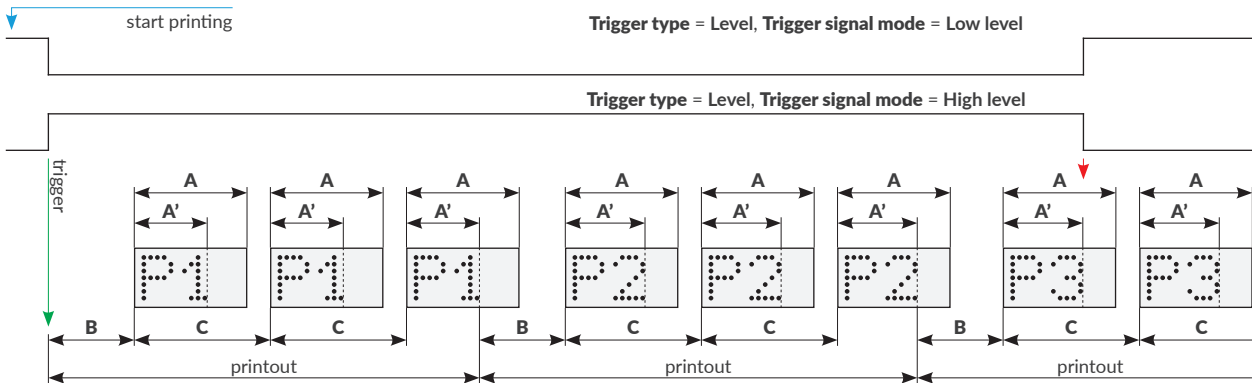


Fig. 55.

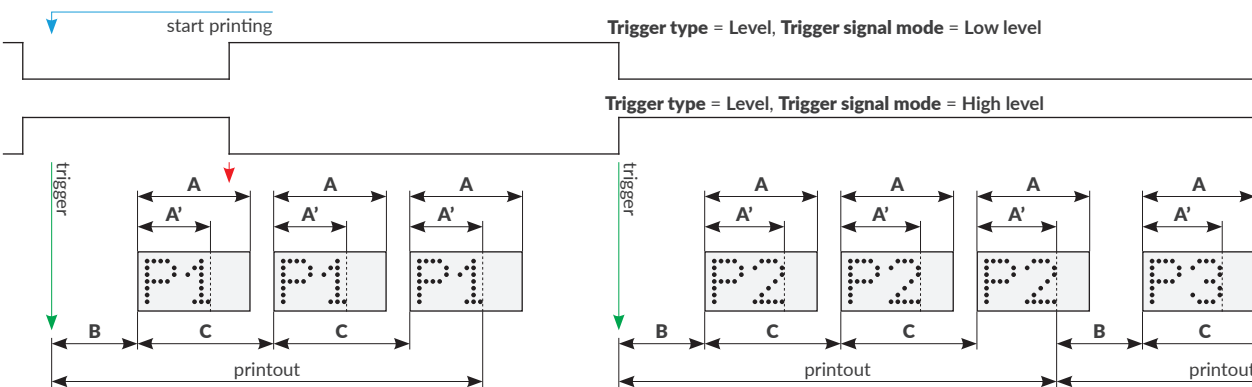





Fig. 56.

Example 2

Fig. 57 and Fig. 58 show the configuration in which:

- The printer is **not** in **continuous printing mode** (the value of the parameter  ► **Printout repetition** is different from ) which means that after printing starts (↓) (▶) it awaits the active edge of the trigger signal (↓) (▶).

-  ► **Trigger type = Edge**, and this means that:

When the beginning of an object is detected, that is when the active edge of the trigger signal occurs, the printer makes **one** printout consisting of initial distance **B** and three reprints **P1**. The printout is made in full (including all reprints) even if the end of the object is detected during printing, that is the trigger signal becomes inactive (↓).

On finishing printing, the printer awaits the active edge of the trigger signal (↓). When the active edge occurs, the printer makes a successive, **single** printout consisting of initial distance **B** and three reprints **Px**.

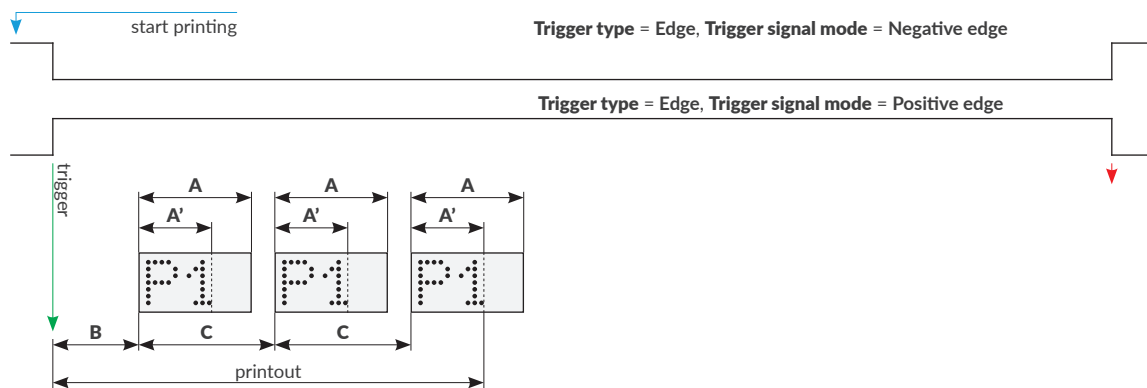


Fig. 57.

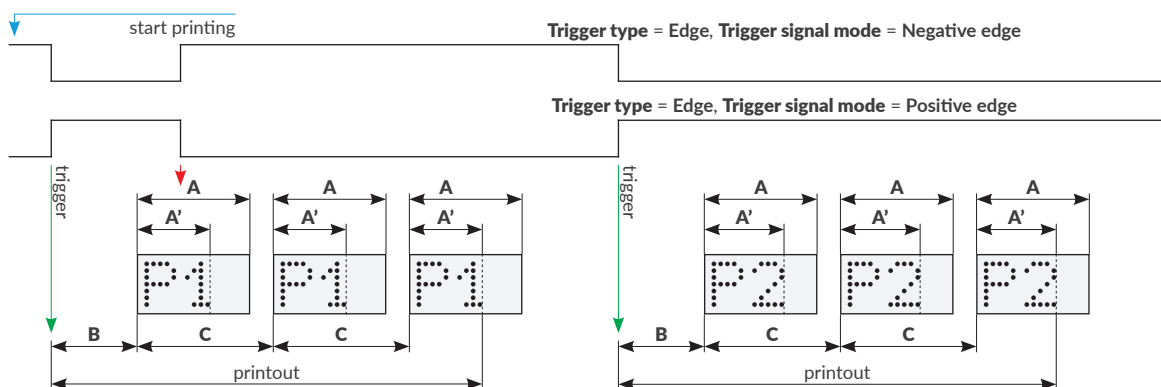


Fig. 58.

Example of continuous printing; no reprints

Fig. 59 shows the configuration in which:

- The printer is in **continuous printing mode** (ⓘ) ▶ **Printout repetition** = (↻) which means that immediately after printing starts (↓) (▶) it makes a printout consisting of initial distance **B** and one reprint **P1**.

The parameters ⓘ ▶ **Trigger type**, ⓘ ▶ **Trigger signal mode** are not used.

If the printer is in printing mode, then the completion of the printout is directly followed by a successive printout consisting of initial distance **B** and one reprint **Px**.

- If printing pauses (↓) (■) while a printout is being made, printing of the current print continues and it will not stop until the print is fully completed.

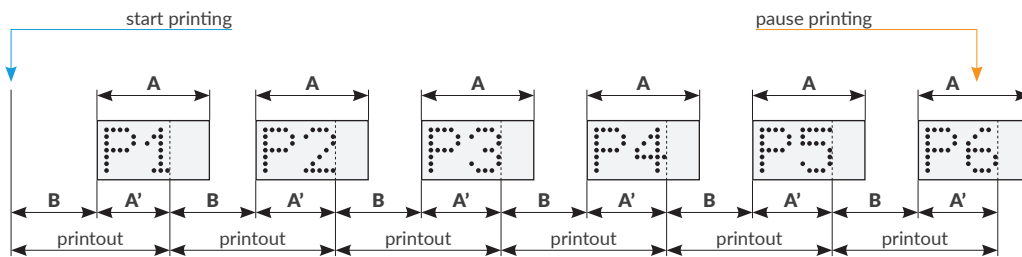


Fig. 59.

5.4.2. CREATING/EDITING A TEXT OBJECT

Text objects ⓘ are sets of alphabetic characters (including national characters), digits and additional characters.

5.4.2.1. COMMON PARAMETERS OF TEXT OBJECTS

The following parameters are common to text objects ⓘ, including **Normal text** ⓘ, **Date/Time** ⓘ, **Counter** ⓘ, **Communications port** ⓘ and **Text file** ⓘ-type objects:

Parameter	Range of settings
ⓘ ▶ Font name	List of available fonts

The font that is used for generating a text object ⓘ.

Text objects ⓘ can be generated using the following fonts:

- **matrix fonts (*.xml)**; marked with ⓘ on the font list,
- **TrueType (*.ttf)**; marked with the sign ⓘ (default fonts) or ⓘ (user fonts) on the font list.

The fonts that are used most frequently can be marked as “favorite” ★. Owing to that they will be displayed at the beginning of the font list. Use the ⓘ icon to add/delete the selected font to/from the “favorite” list.

i Additional fonts can be imported to the printer using the **font manager** available in the **EBS Web User Interface**.

ⓘ ▶ Line spacing	0 to 20
-------------------------	---------

Space (a number of rows) between text lines within one text object ⓘ.

Parameter	Range of settings
 ▶ Pre-print processing script	none, list of available scripts

Select a script to process contents of a text object  before a project is printed.




Before a script is used in a project, it must be saved in the printer's internal memory. Scripts can be imported to the printer using the **script manager** available in the **EBS Web User Interface**.


For matrix fonts  only:

Parameter	Range of values
 ▶ Letter spacing	

Number of empty columns between characters within one text object .

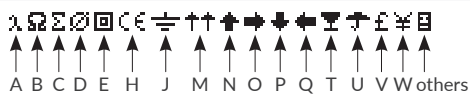
 ▶ Row multiplicity	
---	--

The number that defines how many times every column in an object is to be repeated.
 The parameter is used for increasing intensity of prints on porous materials, which easily absorb ink, on which printed signs are scarcely visible due to their granular structure.

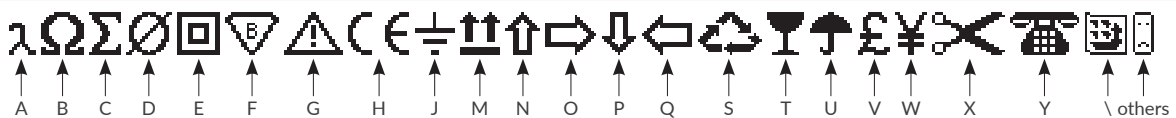
If matrix fonts  are used for generating special characters (**Spec_7**, **Spec_16**, **Spec_25**), the creation of a given character requires that the capital letter corresponding to that character be entered while object contents are added.

The following table contains the list of special characters and corresponding letters.

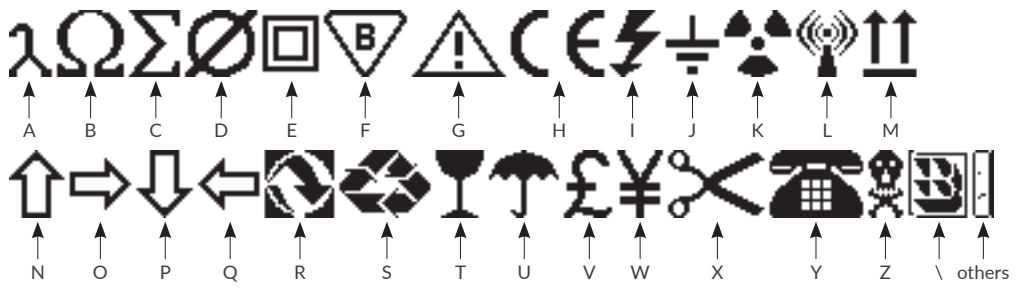
Spec_7








Spec_16



Spec_25




For TrueType fonts  /  only:

Parameter	Range of settings
 ▶ Font size	
if  ▶ Constrain font proportions: <input checked="" type="checkbox"/> the parameter  ▶ Font size is used for setting font height (or a number of horizontal rows). To keep the dimensions in proportion, the font width is determined automatically.	
If  ▶ Constrain font proportions: <input type="checkbox"/> , the font width (a number of vertical rows) and the font height (a number of horizontal rows) are set separately.	
 ▶ Constrain font proportions	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Proportional character scaling, <i>i.e.</i> keeping the character width and height in proportion.	





For **Normal text**-type objects  and **Counter**-type objects  only:

Parameter	Range of settings
 ▶ Edit before printing is started	<input checked="" type="checkbox"/> / <input type="checkbox"/>
 ▶ Edit counter before starting printing	
Data can be entered immediately before the project is printed.	

5.4.2.2. CREATING/EDITING A **NORMAL TEXT**-TYPE TEXT OBJECT


A **Normal text**-type text object  enables the user to add to a project an **ASCII** character text whose content is invariable.

To create a **Normal text**-type text object :


1. Press  ▶  ▶ .
2. Enter contents of the object ( ▶ **Text**).
3. Set object parameters.




For more details about the parameters that are common to all objects see [“5.2.1. Common Parameters of All Objects”](#).

For more details about the parameters that are common to text objects  see [“5.4.2.1. Common Parameters of Text Objects”](#).

4. Press  to acknowledge.

The **Normal text** -type text object is created in the left top corner of the project.


5.4.2.3. CREATING/EDITING A **DATE/TIME**-TYPE TEXT OBJECT






The following can be added to a project using a **Date/Time**-type text object :

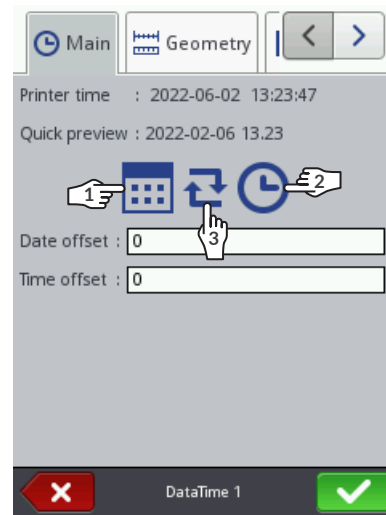
- The current date and/or time,
- A time that is set back or forward by a certain offset relative to the current time,
- A date that is shifted by a certain offset, or a so called **expiration date**.

To create a **Date/Time**-type text object :




1. Press  ►  ► .

In the sheet tab , the following are displayed in sequence:

- The date and time currently set in the printer,
 - A quick preview of the contents of the **Date/Time**-type object ,
 - The composition of the object and the sequence of object items (only date, only time, date and time, time and date).
2.  Press  to turn the date on/off.
 3.  Press  to turn the time on/off.



At least one of the above-mentioned items (date, time) must remain turned on.

4.  Press  to change the sequence of items.
5. Set the parameters that are specific to the **Date/Time**-type object .

Parameter	Range of settings
-----------	-------------------


 ► Date offset	-7300 to 7300
--	---------------

Date offset relative to the current date (to define an expiration date).
If the value of 0 is entered, the current date is printed.

 ► Time offset	-24 to 24
--	-----------

Time offset relative to the current time.
If the value of 0 is entered, the current time is printed.
A time offset can involve a date offset. If you move the time back or forward, the calendar day may change at a time different from 00:00 (e.g. at 6 am, when the shift changes in a factory).

 ► Allow formatting string editing	<input checked="" type="checkbox"/> / <input type="checkbox"/>
--	--






Advanced modification of date and time formats to customize the object using the  ► **Formatting string** parameter.


 ► Date separator	“.”, “,”, “_”
---	---------------

The parameter is available only if  ► **Allow formatting string editing**: .

Character that separates consecutive date items from each other.



The default date separator for newly created **Date/Time**-type objects  can be set by pressing  ►  ►  ►  ► **Date separator**.

Parameter	Range of settings
 ▶ Date format	DD:MM:YY, MM:DD:YY, DD:MM:YYYY, MM:DD:YYYY, YYYY:DD:MM, YYYY:MM:DD, YY:DD:MM, YY:MM:DD

The parameter is available only if  ▶ **Allow formatting string editing:** .






Select one of predefined date formats.

 The default date format for newly created **Date/Time**-type objects  can be set by pressing  ▶  ▶  ▶  ▶ **Date format**.

 ▶ Time separator	“.”, “.”
---	----------

The parameter is available only if  ▶ **Allow formatting string editing:** .

Character for separating successive time items from each other.


 The default time separator for newly created **Date/Time**-type objects  can be set by pressing  ▶  ▶  ▶  ▶ **Time separator**.

 ▶ Time format	HH:MM:SS, HH:MM
--	-----------------



The parameter is available only if  ▶ **Allow formatting string editing:** .

Select one of predefined date formats.



 The default time format for newly created **Date/Time**-type objects  can be set by pressing  ▶  ▶  ▶  ▶ **Time format**.

 ▶ Formatting string	
--	--


The parameter is available only if  ▶ **Allow formatting string editing:** .

With the  ▶ **Date format** and  ▶ **Time format** parameters, you can only select predefined date and/or time formats. A formatting string enables the user to precisely customize date and/or time formats using date and time items. The date and time items that can be used as part of formatting strings are described further in this chapter.

- Set the other parameters of the text object .

 For more details about the parameters that are common to all objects see **“5.2.1. Common Parameters of All Objects”**.
For more details about the parameters that are common to text objects  see **“5.4.2.1. Common Parameters of Text Objects”**.

- Press to acknowledge.

The **Date/Time** -type text object is created in the left top corner of the project.

Formatting string: date and time items


A formatting string can consist of the date and time items described in the following table and of any other characters. The date and time items are replaced with relevant values during printing. The other characters are printed unchanged.

The names of days of the week and the names of months are printed in English.

Item	Meaning
%a	3-letter abbreviation for the name of a day of the week (Mon, ..., Sun).
%A	Full name of a day of the week (Monday, ..., Sunday).
%b	3-letter abbreviation for the name of a month (Jan, ..., Dec).
%B	Full name of a month (January, ..., December).
%c	Date and time in the format: 3-letter abbreviation for the name of a day of the week, 3-letter abbr. for the name of a month, number of a day of the month, hours, minutes, seconds, a year.
%C	Number of a century.
%d	2-digit number of a day of the month (01, ..., 31).
%D	Date in mm/dd/yy format.
%e	Number of a day of the month (1, ..., 31).
%F	Date in yyyy-mm-dd format.
%g	Last two digits of the year.
%G	4-digit number of a year.
%h	3-letter abbreviation for the name of a month (Jan, ..., Dec).
%H	2-digit hour in 24-hour system (00 to 23).
%I	2-digit hour in 12-hour system (01 to 12).
%j	3-digit number of a day of the year (001, ..., 366).
%k	Hour in 24-hour system (0 to 23).
%l	Hour in 12-hour system (1 to 12).
%m	2-digit number of a month (01 to 12).
%-m	Number of a month (1 to 12).
%M	2-digit minute (00 to 59).
%p	Local equivalent to AM or PM (empty for many languages).
%P	Local equivalent to am or pm (empty for many languages).
%r	Time in 12-hour system in the format of hh:mm:ss [AM] or [PM].
%R	Time in 24-hour system in hh:mm format.
%s	Unix timestamp, <i>i.e.</i> the number of seconds counted since the beginning of 1970.
%S	2-digit second (00, ..., 60); 60 means a leap second.
%T	Time in 24-hour system in hh:mm:ss format.
%u	Number of a day of the week (1, ..., 7); 1 means Monday.
%U	2-digit number of a week in the year (00, ..., 53); Sunday begins the week.
%V	2-digit number of a week in the year (01, ..., 53); Monday begins the week.
%w	Number of a day of the week (0, ..., 6); 0 means Sunday.
%W	2-digit number of a week in the year (00, ..., 53); Monday begins the week.
%x	Local representation of the date.
%X	Local representation of the time.
%y	Last two digits of the year; as for %g.
%1y	First digit of a 4-digit number of the year.
%2y	Second digit of a 4-digit number of the year.
%3y	Third digit of a 4-digit number of the year.
%4y	Fourth digit of a 4-digit number of the year.
%Y	4-digit number of a year; as for %G.
















Item	Meaning
%z	Time zone in numerical format (e.g. +0100).
%Z	Name of the time zone (e.g. EDT).

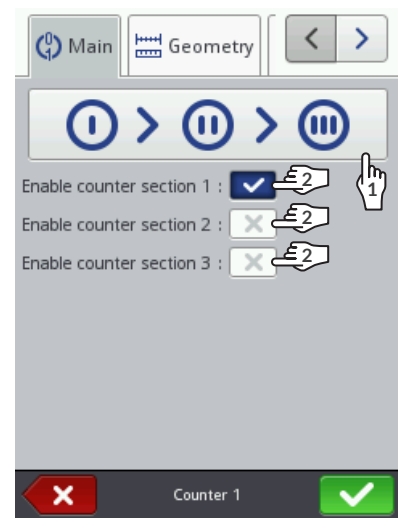
5.4.2.4. CREATING/EDITING A COUNTER-TYPE TEXT OBJECT




With a **Counter**-type text object  you can provide a project with automatic customized numbering.


A counter may consist of up to three identical sections connected in cascade. Each of the sections may be visible or hidden. The sequence of section incrementation can be changed, that is you can define which section shall be timed first and in what sequence the following sections shall be timed.

To create a **Counter**-type text object :

1. Press   .
2.  Press     /    to select a sequence of incrementation of counter sections.
3.  In sheet tab , select the counter sections that shall be visible ( / ).



4. Set parameters of each of the counter sections (  ).

A **Counter**-type object  consists of three sections. Each section has an identical set of parameters which can be modified independently.

Parameter	Range of settings
Min	-2147483648 to 2147483647

The parameter has the following meanings:

- Value from which the incremental counter starts recounting (after an overflow),
- Value at which decremental counting finishes and the counter overflows,
- Value from which counting starts if **Start mode** = **Min**.

Max	-2147483648 to 2147483647
------------	---------------------------

The parameter has the following meanings:


- Value from which the decremental counter starts recounting (after an overflow),
- Value at which incremental counting finishes and the counter overflows,
- Value from which counting starts if **Start mode** = **Max**.

Parameter	Range of settings
Start mode	Min, Max, Start value, Last value
Select a value to start counting from:	
<ul style="list-style-type: none"> - Min: counting starts from the value given with the Min parameter both when project printing starts for the first time and when printing is resumed. - Max: counting starts from the value given with the Max parameter both when project printing starts for the first time and when printing is resumed. - Start value: counting starts from the value given with the Start value parameter both when project printing starts for the first time and when printing is resumed. - Last value: when project printing starts for the first time, counting starts from the value given with the Start value parameter, and when printing is resumed, counting continues, <i>i.e.</i> it starts again from the sum of the values given with the Last value and Step parameters. 	
Start value	-2147483648 to 2147483647
The parameter has the following meanings:	
<ul style="list-style-type: none"> - Initial value of the counter if Start mode = Start value, - Value from which counting starts when project printing starts for the first time if Start mode = Last value. 	
Last value	information parameter
Last printed value of the counter.	
The Last value parameter can be restored to its initial value by pressing the  icon in the project editor window.	
Step	-2147483648 to 2147483647
Counter step; if	
<ul style="list-style-type: none"> - A positive number is entered, counting up takes place (an incremental counter). - A negative number is entered, counting down takes place (a decremental counter). 	
Length	1 to 9
Number of counter positions, <i>e.g.</i> if Length = 3 , the counter uses three positions to do the counting (... , 003, 004, ..., 999, ...).	
Fill in	0, Space
Character that replaces meaningless counter digits, <i>e.g.</i> "002" or " _2" (the character _ means a space).	
Suffix	
Any character string to be printed after the counter section.	

5. Set the other parameters of the text object .



For more details about the parameters that are common to all objects see "5.2.1. Common Parameters of All Objects".



For more details about the parameters that are common to text objects  see "5.4.2.1. Common Parameters of Text Objects".

6. Press  to acknowledge.

The **Counter** -type text object is created in the left top corner of the project.

5.4.2.5. CREATING/EDITING A **COMMUNICATIONS PORT**-TYPE TEXT OBJECT

Use a **Communications port**-type text object  to add data received from an external device (e.g. a computer, automatic scales, a bar code reader) to a project via:

- **Ethernet** (with connector )
- **the RS-232/RS-485** (with connector )





Data can be transferred from an external device to the printer when

- The device is connected to the connector of an appropriate printer interface,
- The interface is correctly set up.



For more details on how to configure communications interfaces see **"7.4. Configuring Communications Interfaces"**.

To create a **Communications port**-type text object :


1. Press  ►  ► .
2. Set the parameters that are specific to the **Communications port**-type object .

Parameter	Range of settings
 ► Port	COM1, Socket1 – 5001 to Socket9 - 5009

The interface through which data is transferred from an external device:

- **COM1**: data is transferred via the **RS-232/RS-485**,
- **Socket1 – 5001 to Socket9 - 5009**: data is transferred via a selected Ethernet **TCP/IP** socket (with a defined port number).




The printer offers 10 different sockets (with port numbers from 5000 to 5009) for transferring data via **Ethernet**. This means that up to 10 separate Communications port-type objects  can be added to a project and the objects can be used for printing various data.

The information about **Ethernet** (such as the **IP** address of the printer) that is necessary for correct transfer of data to the printer is available by pressing




 ► Baud rate [bps]	1200 to 230400
--	----------------


The parameter is available only if  ► **Port** = **COM1**.

Rate at which data is transferred.

 ► Bit count	7, 8
--	------






The parameter is available only if  ► **Port** = **COM1**.

The number of data bits.


Parameter	Range of settings
 ▶ Expert settings	<input checked="" type="checkbox"/> / <input type="checkbox"/>

Activate advanced settings for a **Communications port** object .


If  ▶ **Expert settings:** , then:


- The additional sheet tab  **Advanced** is available,
- The parameters  ▶ **Prefix** and  ▶ **Suffix** are not available,
- The parameter  ▶ **Formatting string** is available,
- The parameter  **Communication** ▶ **Received data processing script** is available.

 ▶ Prefix	
---	--

The parameter is available only if  ▶ **Expert settings:** .


Any character string to be printed before the data received from an external device.

 ▶ Suffix	
---	--

The parameter is available only if  ▶ **Expert settings:** .

Any character string to be printed after the data received from an external device.

 ▶ Formatting string	
--	--

The parameter is available only if  ▶ **Expert settings:** .

Advanced way of formatting data transferred from an external device to the printer; the parameter defines how the transferred data shall be interpreted by the printer.

Marks used by a formatting string:

%s - character string,

%d - number.

 Communication ▶ Messages format	Normal, Hexadecimal
---	---------------------














Format of data transferred from an external device:


- **Normal:** data is transferred as **ASCII** codes.
- **Hexadecimal:** data is transferred as hexadecimal codes.



 Communication ▶ Data buffering	Enabled, Disabled
--	-------------------

Gather successive data portions received from an external device:

- **Enabled:** consecutive, complete data portions (see the description of the **Ready to print after** parameter) received from an external device are stored in printer buffer.
The buffered data is printed in the order in which it is stored (the FIFO queue). When all buffered data is printed out, the printer responds according to the setting of the **No-data action** parameter.
- **Disabled:** every consecutive, complete data portion (see the description of the **Ready to print after** parameter) received from an external device overwrites the previous data portion that has not been printed yet.
If there are no successive data portions, the printer responds according to the setting of the **No-data action** parameter.

Parameter	Range of settings
 Communication ▶ No-data action	Do nothing, Print blank object, Print last message
<p>The printer's response to the trigger of printing of a project containing a Communications port-type object  when no data has been received from an external device or the received data is incomplete (see the description of the Ready to print after parameter):</p> <ul style="list-style-type: none"> - Do nothing: the project is not printed; an error message is displayed. - Print blank object: the project is printed; the Communications port-type object  remains empty. - Print last message: the project is printed; the Communications port-type object  is filled with the last, correct data portion, or if the project is printed for the first time, the object remains empty. 	
 Communication ▶ Ready to print after	Time interval [ms], Data count, End character
<p>Mode by which the printer confirms whether a data portion received from an external device is complete or not:</p> <ul style="list-style-type: none"> - Time interval [ms]: the printer receives a data portion over a certain period defined in the Time interval [ms] parameter. The interval starts when the last project is printed or when project printing acknowledgment is sent to the external device. - Data count: the printer receives a data portion consisting of characters whose number is given with the Data count parameter. - End character: the printer receives a data portion until the character given with the End character parameter is obtained. 	
 Communication ▶ ASCII code	<input checked="" type="checkbox"/> / <input type="checkbox"/>
<p>The parameter is available only if Ready to print after = End character.</p> <p>Define whether the end of data shall be an ASCII character.</p>	
 Communication ▶ Received data processing script	none, list of available scripts
<p>The parameter is available only if  ▶ Expert settings: <input checked="" type="checkbox"/>.</p> <p>Select a script to process data received by the communications interface.</p>	
<p> <i>Before a script is used in a project, it must be saved in the printer's internal memory. Scripts can be imported to the printer using the script manager available in the EBS Web User Interface.</i></p>	
 Advanced ▶ On print start	Do nothing, String, ASCII code
<p>The parameter is available only if  ▶ Expert settings: <input checked="" type="checkbox"/>.</p> <p>Data that is sent from the printer to the external device when you start printing a project containing a Communications port-type object , i.e. directly after the icon  Start on the main screen is pressed:</p> <ul style="list-style-type: none"> - Do nothing: the printer sends no data. - String: the printer sends the data defined with the Reply to be sent parameter, - ASCII code: the printer sends the character defined with the Reply to be sent parameter. 	


Parameter	Range of settings
 Advanced ▶ On print finish	Do nothing, String, ASCII code

The parameter is available only if  ▶ **Expert settings:** .


Data that is sent from the printer to the external device when you **pause printing** a project containing a **Communications port**-type object , i.e. directly after you press the icon

 **Stop** on the main screen:


- **Do nothing:** the printer sends no data,
- **String:** the printer sends the data defined with the **Reply to be sent** parameter,
- **ASCII code:** the printer sends the character defined with the **Reply to be sent** parameter.



 Advanced ▶ On printout finish	Do nothing, String, ASCII code, Return received data
---	--

The parameter is available only if  ▶ **Expert settings:** .

Data that is sent from the printer to the external device directly after the printer prints a project containing a **Communications port**-type object :

- **Do nothing:** the printer sends no data,
- **String:** the printer sends the data defined with the **Reply to be sent** parameter,
- **ASCII code:** the printer sends the character defined with the **Reply to be sent** parameter,
- **Return received data:** the printer sends back the same data that it received from the external device.

 Advanced ▶ On data receive	Do nothing, String, ASCII code, Return received data
--	--


The parameter is available only if  ▶ **Expert settings:** .


Data that is sent from the printer to the external device directly after the printer receives any data portion from the external device¹⁾:


- **Do nothing:** the printer sends no data,
- **String:** the printer sends the data defined with the **Reply to be sent** parameter,
- **ASCII code:** the printer sends the character defined with the **Reply to be sent** parameter,
- **Return received data:** the printer sends back the same data that it received from the external device.



¹⁾ - the printer sends the data also when the data received from the external device is not complete (see the description of the parameter **Ready to print after**).

Parameter	Range of settings
 Advanced ▶ On data process	Do nothing, String, ASCII code, Return received data

The parameter is available only if  ▶ **Expert settings:** .


Data that is sent from the printer to the external device when the printer **triggers printing** of a project containing a **Communications port**-type object :

- **Do nothing:** the printer sends no data,
- **String:** the printer sends the data defined with the **Reply to be sent** parameter,
- **ASCII code:** the printer sends the character defined with the **Reply to be sent** parameter,
- **Return received data:** the printer sends back the same data that it received from the external device.


- Set the other parameters of the text object .




For more details about the parameters that are common to all objects see **“5.2.1. Common Parameters of All Objects”**.

For more details about the parameters that are common to text objects  see **“5.4.2.1. Common Parameters of Text Objects”**.

- Press to acknowledge

The **Communications port** -type text object is created in the left top corner of the project.





5.4.2.6. CREATING/EDITING A **TEXT FILE**-TYPE TEXT OBJECT








With a **Text file**-type text object  you can add the contents of a text file to a project.



Before a text file is used in a project, it must be imported to the printer via the **text file manager** available in the **EBS Web User Interface**.

To create a **Text file**-type text object :

- Press  ▶  ▶ .
- Set the parameters that are specific to the **Text file**-type object .

Parameter	Range of settings
 ▶ File path	
Indicate the name of a text file from among those available in the printer.	
 ▶ Line count	1 to 10, All
Number of text lines to be added to an object from a text file.	
If All is selected, all text lines limited with the values of the  ▶ Line start value and  ▶ Line maximum value parameters are added to the object.	
 ▶ Line step	1 to 50
Number of lines, by which the text file data shifts each time a consecutive print is made. If the value of the Line step parameter is smaller than the value of the  ▶ Line count parameter, the data shifts by the value of the  ▶ Line count parameter.	




Parameter	Range of settings
-----------	-------------------

 ▶ Line maximum value	1 to 1000000
---	--------------

Number of the last text-file line to be printed.




 ▶ Start mode	Start value, Last value
---	-------------------------


Indicate which text-file line is read in after printing resumption:


- **Start value:** the line whose number is given with the  ▶ **Line start value** parameter is read in, i.e. printing starts from the beginning.
- **Last value:** the line whose number is the sum of the values given with the  ▶ **Line last value** and  ▶ **Line step** parameters is read in, i.e. printing continues.


 ▶ Line start value	1 to 1000000
---	--------------

The parameter has the following meanings:

- Number of a line to be read in from a text file when project printing starts for the first time regardless of the value of the  ▶ **Start mode** parameter,
- Number of a line to be read in from a text file when the end of the file is reached or when the value of the  ▶ **Line maximum value** parameter is reached if that value is smaller than the number of the lines in the file,
- Number of a line to be read in from a text file after printing resumption, if  ▶ **Start mode** = **Start value**.

 ▶ Line last value	information parameter
--	-----------------------


Number of a line printed as the last. The parameter is used when printing is resumed, if  ▶ **Start mode** = **Last value**.

The **Line last value** parameter can be restored to its initial value by pressing the  icon in the project editor window.

3. Set the other parameters of the text object .



For more details about the parameters that are common to all objects see "5.2.1. Common Parameters of All Objects".




For more details about the parameters that are common to text objects  see "5.4.2.1. Common Parameters of Text Objects".

4. Press  to acknowledge.

The **Text file** -type text object is created in the left top corner of the project.





5.4.3. CREATING/EDITING A SHAPE


The group of shapes  includes the following objects:

- **Line** ,
- **Rectangle** ,
- **Ellipse** .

5.4.3.1. CREATING/EDITING A **LINE**-TYPE SHAPE

To create a **Line**-type shape :

1. Press  ►  ► .
2. Set the parameters that are specific to the **Line**-type object .


Parameter	Range of settings
 ► Line width	1 to 30
Thickness of a line to be drawn; given as a number of dots.	

3. Set the other parameters of the object.







For more details about the parameters that are common to all objects see [“5.2.1. Common Parameters of All Objects”](#).






4. Press  to acknowledge.

The **Line** -type shape is created in the left top corner of the project.

5.4.3.2. CREATING/EDITING A **RECTANGLE**-TYPE SHAPE

To create a **Rectangle**-type shape :

1. Press  ►  ► .
2. Set the parameters that are specific to the **Rectangle**-type object .

Parameter	Range of settings
 ► Filled	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Define whether the rectangle shall be filled or only its outline shall be printed.	
 ► Invert	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Define whether the common parts of the rectangle and the objects that are under the rectangle shall be printed or not.	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input type="checkbox"/>  </div> <div style="text-align: center;"> <input checked="" type="checkbox"/>  </div> </div>	
 ► Line width	1 to 30
Thickness of the rectangle outline; given as a number of dots.	

3. Set the other parameters of the object.







For more details about the parameters that are common to all objects see [“5.2.1. Common Parameters of All Objects”](#).












- Press  to acknowledge.

The **Rectangle** -type shape is created in the left top corner of the project.

5.4.3.3. CREATING/EDITING A **ELLIPSE**-SHAPE

To create an **Ellipse**-type shape :

- Press  ►  ► .
- Set the parameters that are specific to the **Ellipse**-type object .

Parameter	Range of settings
 ► Filled	 / 
Define whether the ellipse shall be filled or only its outline shall be printed.	
 ► Invert	 / 
Define whether the common parts of the ellipse and the objects that are under the ellipse shall be printed or not.	
 	 
 ► Line width	1 to 30
Thickness of the ellipse outline; given as a number of dots.	

- Set the other parameters of the object.









For more details about the parameters that are common to all objects see [“5.2.1. Common Parameters of All Objects”](#).

- Press  to acknowledge.


The **Ellipse** -type shape is created in the left top corner of the project.

5.4.4. CREATING/EDITING THE OTHER OBJECTS





The other objects  are of the following types:

- **Barcode** ,
- **Image** ,
- **Line divider** ,
- **Spacer** ,
- **Intensifier** .


5.4.4.1. CREATING/EDITING A **BARCODE**-TYPE OBJECT

Use a **Barcode**-type object  to add to a project: a 1-dimensional (**1D**) bar code or a 2-dimensional (**2D**) matrix code whose content is static.



*The EBS Web User Interface can also be used for creating bar/matrix codes whose content is dynamic and that are graphic interpretation of text objects such as **Date/Time** , **Counter** , **Communications port**  and **Text file** .*

To get a 2-dimensional (**2D**) matrix code whose width and height are equal:

- Set resolution in a horizontal direction (the project parameter  ► **Resolution**) at the same value as resolution in the vertical direction, *i.e.* at 180 dpi (about 7086 dots/meter),
- Set the **Conveyor speed** or **Encoder constant** parameter at the real speed or constant of the factory conveyor.



For more details see sections “5.4.1. Project Parameters” and “7.1. General Settings”.

To create a **Barcode**-type object :


1. Press  ►  ► .
2. Select a type of code ( ► **Barcode type**).

The following types of codes are available:


- **1D** codes: EAN-13, EAN-8, EAN-8 + EAN-2, EAN-8 + EAN-5, EAN-13 + EAN-2, EAN-13 + EAN-5, Code25 Industrial, Code 25 Interleaved, GS1-128 (UCC/EAN-128), Code 128, ITF-14, EAN-2, EAN-5, EAN-5 + EAN-2, Code 11, Code 25 IATA, Code 25 Data Logic, Code 39, Code 39 Extended, Codabar, Leitcode, Identcode, Code 16k, Code 93, GS1 DataBar-14, GS1 DataBar Limited, GS1 DataBar Expanded, Telepen Alpha, UPC-A, UPC-E, PostNet, MSI Plessey, Pharmacode One-Track, Pharmacode Two-Track, PZN, Australia Post 4-State, Royal Mail 4-State (RM4SCC),
- **2D** codes: 2D:Data Matrix, 2D:PDF417, 2D:PDF417 Truncated, 2D:QR Code,


2D:MicroPDF417.



When a type of code is selected, an example of the code of the selected type is displayed in the sheet tab , together with basic information such as:


- a set of characters/signs that can be used in the code of the selected type,
- code length,
- basic description of the code.

3. Enter a content of the code ( ► **Text**).

The code content must meet the requirements of the selected type of code (characters/signs out of an applicable set, a required code length). If the entered code content is unsuitable for the selected type of code, the background of the text box changes its color to red. In such a case, the code content must be corrected to allow you to create a **Barcode**-type object .


4. Set the parameters that are specific to a **Barcode**-type object .

Parameter	Range of settings
-----------	-------------------

 ► Enable resizing	<input checked="" type="checkbox"/> / <input type="checkbox"/>
--	--


The parameter is available for selected bar/matrix codes.

Code scaling.

 ► Signature	<input checked="" type="checkbox"/> / <input type="checkbox"/>
--	--

The parameter is available for selected bar codes.


Add a caption under a 1-dimensional bar code. The caption is part of the code contents.

 ► Border type	none, bind, box
--	-----------------

The parameter is available for selected bar/matrix codes.

Type of code frame; the parameter is available to selected codes:

- **none**: no frame,
- **bind**: frame lines on the top and bottom of the code only,
- **box**: frame lines around the code.

 ► Border size	0 to 10
--	---------

The parameter is available only if  ► **Border type** is different from **none**.

Thickness of the code frame lines; given as a number of dots.

5. Set the other parameters of the object.




For more details about the parameters that are common to all objects see [“5.2.1. Common Parameters of All Objects”](#).

6. Press to acknowledge.

The **Barcode**-type object  is created in the left top corner of the project.

5.4.4.2. CREATING/EDITING AN **IMAGE**-TYPE OBJECT







With an **Image**-type object  you can add a graphics file containing any graphics, drawing or logo to a project.



Before a graphics file is used in a project, it must be imported to the printer via the **image manager** available in the **EBS Web User Interface**.



Only a graphics file in ***.png** format can be added to a project. It is recommended that monochromatic (black and white) images be used.

To create an **Image**-type object :



1. Press  ►  ► .
2. Select a graphics file from among those available in the printer ( ► **Image path**).
A preview of the selected graphics file is available in the graphics file manager window.
3. Press  to acknowledge the selection of the graphics file.
The preview of the selected graphics file is displayed in the sheet tab .
4. Set the other parameters of the object.




For more details about the parameters that are common to all objects see **“5.2.1. Common Parameters of All Objects”**.

5. Press  to acknowledge.
The **Image**-type object  is created in the left top corner of the project.

5.4.4.3. CREATING/EDITING A **LINE DIVIDER**-TYPE OBJECT





Use a **Line divider**-type object  to pause making a print until a consecutive object is detected by the photodetector selected as the source of the trigger signal (the project parameter  ► **Trigger source**). When an object is detected, another part of the print is made.

It is advisable to use **Line divider**-type objects  to label Euro-pallet brackets.



For more details about labeling of Euro-pallets see **“2.3.5. Labeling Euro-pallets”**.

To create a **Line divider**-type object :

1. Press  ►  ► .
2. Set the parameters that are specific to the **Line divider**-type object .

Parameter


Range of settings

► **Position**

Position of an object in a project; the horizontal coordinate (**X**).


The point at which printing pauses and is not resumed until the consecutive object is detected by the photodetector selected as the source of the trigger signal.

3. Press  to acknowledge.


The **Line divider**-type object  is created in the project and its position is defined by

the parameter  ► **Position**.




The **Line divider**-type object  is shown in the project editor window as a vertical, light blue line of maximum height.





5.4.4.4. CREATING/EDITING A **SPACER**-TYPE OBJECT




Use a **Spacer**-type object  to add a space in the form of a defined number of blank columns (vertical rows) to a project.





Blank columns generated by adding a **Spacer**-type object  to a project are not included in the project width limit of 4000 columns.

To create a **Spacer**-type object :

1. Press  ►  ► .
2. Set the parameters that are specific to the **Spacer**-type object .

Parameter	Range of settings
 ► Position	
Position of an object in a project; the horizontal coordinate (X).	
 ► Distance	0 to 2147483647
Number of blank columns (vertical rows) added to a project at the point where a Spacer -type object  is inserted.	



3. Press  to acknowledge.

The **Spacer**-type object  is created in the project and its position is defined by the parameter  ► **Position**.





Regardless of the value of the parameter  ► **Distance**, a **Spacer**-type object  is shown in the project editor window as a vertical violet line of maximum height and constant width.

5.4.4.5. CREATING/EDITING AN **INTENSIFIER**-TYPE OBJECT

Use an **Intensifier**-type object  to modify intensity of a print from the point where the object is added to a project to the end of the printout or the occurrence of a consecutive **Intensifier**-type object .



If a project does not contain a **Intensifier**-type object , the entire project is printed with intensity given with the project parameter  ► **Dot size**.

The maximum achievable intensity of prints depends on printing speed. If print intensity is too high for a given printing speed, the printer generates a sound signal to signal the error (provided that an appropriate warning is set up, see [“7.3.2. Sound Signal Settings”](#)) and then reduces

the printing speed).



For more details about the relationship between intensity and printing speed see “7.1.1. Maximum Printing Speed”.

To create an **Intensifier**-type object

1. Press ► ► .
2. Set the parameters that are specific to the **Intensifier**-type object .

Parameter	Range of settings
► Position	
Position of an object in a project; the horizontal coordinate (X). Point in a project at which intensity is set at the value given with the parameter ► Dot size .	
► Dot size	1 to 10
Print intensity level.	

3. Press to acknowledge.



The **Intensifier**-type object is created in the project and its position is defined by the parameter ► **Position**.




The **Intensifier**-type object is shown in the project editor window as a vertical, dark green line of maximum height.

5.5. SAVING A PROJECT




The currently edited project can be saved in the editor in two ways:

-  - save the project with its existing name or a new name; the project editor is not exited,
-  - save the project with its existing name and exit the project editor.




The  icon is available only when contents of the project being edited or project parameters have been modified. If modifications are made, the project name is displayed in yellow.

To save the project with a different name:

1. Press  in the project editor window..
The project library is displayed. The project with the name currently displayed is selected by default.
2. Enter a new project name or leave the current name unchanged.
3. Press  to acknowledge.
If the current name is still to be used, a dialog box is displayed where you are requested to acknowledge that the project should be overwritten.
4. Press  to acknowledge.
The project editor window is displayed again.
The project is saved with the selected name.

To save the project with its current name and exit the project editor:

1. Press  in the project editor window..
The project editor is closed.
The window from which the project editor has been called is displayed.
The project is saved with its current name.

On saving the project open for printing/being printed, you are requested to acknowledge in the dialog box displayed whether the project open for printing/being printed shall be reloaded or not .

5.6. PROJECT RECOVERY



 Project recovery is not available to **operator**-type users.

If the printer shuts down (e.g. in emergency shutdown mode) while an unsaved project is being edited, the recovery tool starts running after printer restart and opening of the project for editing.

With the tool you can decide which version of the project shall be saved:

- original version,
- rescue copy.

If the original version is selected, the rescue copy is deleted and the original project remains unchanged.

If the rescue copy is selected, it can be saved as a project with any name.

5.7. CHANGING A PROJECT NAME



A change in the name of a project is not available to **operator**-type users.

To change a project name:

1. Press or **Project** ► **Create project** or **Project** ► **Edit project**.

The project library is displayed.



For more details about the project library see [“5.9. Managing Projects”](#).

2. Press to move to the file and folder manager.
3. Select a project whose name you wish to change; a project can be selected in both the left and right manager windows.
4. Press .



The name of the project that is open for printing/being printed cannot be changed, of which is the message in the dialog box informs.

The virtual keyboard and the current name of the project are displayed.

5. Enter a new project name.

If a new project name is the same as the name of an existing project, then the existing project is replaced with the current one.

On replacing the project open for printing/being printed, you are requested to acknowledge in the dialog box displayed whether the project open for printing/being printed shall be reloaded or not.

6. Press to acknowledge.

The file and folder manager is displayed again.

The name of the selected project is changed.

5.8. DELETING A PROJECT



*Project deleting is not available to **operator**-type users.*

The function is used for deleting permanently a selected project (or selected projects) from printer memory.

To delete a project:

1. Press or **Project** ► **Create project** or **Project** ► **Edit project**.

The project library is displayed.



For more details about the project library see ["5.9. Managing Projects"](#).

2. Press to move to the file and folder manager.
3. Select a project that you wish to delete; a project can be selected in both the left and right manager windows.
4. Press .



The project that is open for printing/being printed cannot be deleted, of which the message in the dialog box informs.

A dialog box with the request to acknowledge the operation is displayed.

5. Press to acknowledge.

The file and folder manager is displayed again.

The selected project is deleted.

5.9. MANAGING PROJECTS

Projects are managed via the project library, which is called by pressing:




or



or



Note that **operator**-type users can gain access to the project library only while they are opening a project for printing using the  icon.

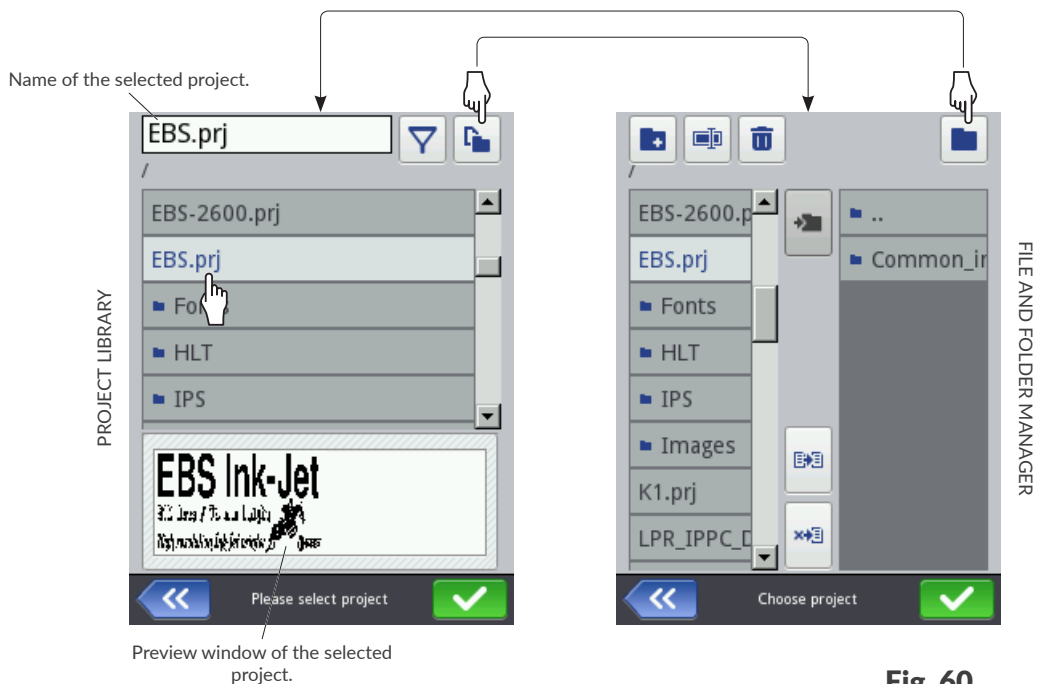




Fig. 60.

All folders and projects (*.prj files) stored in printer memory are displayed in the project library window.



You can switch between the project library and the file and folder manager using the  and  icons.

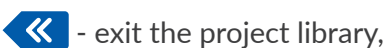



The file and folder manager started with the  icon in the project library is not available to **operator**-type user.

The icons that are available in the project library:




The list of projects displayed in the project library can be narrowed down with the filter  (see Fig. 60). If the filter contains a text, then the projects whose names match the filter are displayed in the library and the filter icon is displayed in inverted colors .












-  - acknowledge an operation (such as open a project for printing, edit a project).

The icons that are available in the file and folder manager:



 *The file and folder manager is not available to **operator**-type users.*

-  - create a new folder,
-  - change the name of the selected project or folder,
-  - delete a selected project or folder,
-  - move to the project library,
-  - move to the contents of the selected folder or return to the parent folder,
-  - copy the selected project or folder,
-  - carry the selected project or folder,
-  - exit the file and folder manager,
-  - acknowledge an operation (such as open a project for printing, edit a project).




CHAPTER 6

INFORMATION




6. INFORMATION

6.1. MESSAGE HISTORY





To get access to message history:

1. Press   







or

 Press  /  /  on status bar **A** (see [Fig. 41 on page 49](#)) on the main screen.








2. Select the group of messages you wish to view:
 - : all messages.
 - : error messages; the messages are displayed in red.
 - : warning messages; the messages are displayed in yellow.
 - : informational messages; the messages are displayed in green.

Messages are handled with the following icons:

-  Display the previous message.
-  Display the next message.
-   Delete a single message.
-   Delete all messages.



 The delete functions that are accessed by pressing the  /  icon are not available to **operator-type** users.

If there are no messages at a time, the message icons are inactive. The icon  /  /  on status bar **A** on the main screen is not displayed, either.

Every entry contains the following information:



For more information about messages see [“9.1. Message Handling”](#).

- Unique message identifier independent of the selected interface language, e.g. E3000,
- Message content displayed in the interface language,
- Date of the first occurrence of the message.

6.2. STATISTICS

To get access to statistics:

1. Press  ►  ► .

The following information is available in the window displayed:

- User report (number of hours worked, number of prints made),



The user report summarizes data for all users together. To get the report for a given user, the user report must be cleared after printer startup.

- Service report, i.e. general statistics (number of hours worked, number of prints made).

Basic		Clear
Worktime	Printouts	
User		
57.66h	4281	
Service		
724.97h	6722	
Exploitation statistics		

To clear the user report press  ►  **Clear user report.**







 *User report clearing is not available to **operator**-type users.*

*Service report clearing is available to **serviceman**-type users only.*

A wider scope of statistics is offered by the **EBS Web User Interface** editor.



*The scope of statistics available in the **EBS Web User Interface** editor can be modified by pressing  ►  ►  ►  ► **Statistics**. For more details see "7.1. General Settings".*

6.3. PRINTER INFORMATION



To get printer information:

1. Press  ►  ► .

The following information is available in the window displayed:


- The manufacturer's address,
- The printer's serial number,
- System version.

	
EBS Ink-Jet Systeme GmbH GERMANY • Alte Ziegelei 19-25 D-51588 Nümbrecht-Elsenroth www.ebs-inkjet.com	
EBS-2600 Industrial Ink Jet	
Serial number :	P120483000-210385
System :	1.03.11
 Detailed information	
Product information	

 For more detailed information about the printer press  **Detailed information**. Such information can be useful for diagnosing the printer, for example.

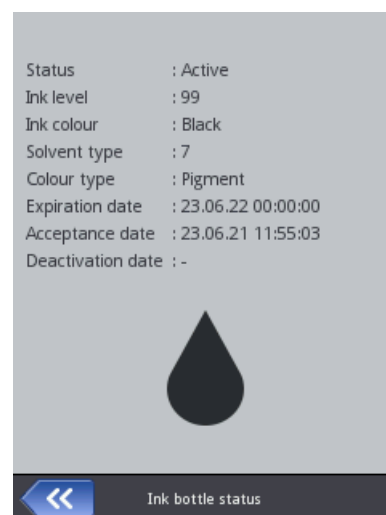
6.4. INK BOTTLE INFORMATION

To get access to information about the ink bottle in use:

1. Press  on status bar **A** (see [Fig. 41 on page 49](#)) on the main screen.

The following information is available in the window displayed:

- Bottle status,
- Approximate amount of the ink in the bottle [%],
- Color of the ink,
- Type of solvent (base),
- Type of coloring matter,
- Expiration date,
- Acceptance date,
- Deactivation date.



6.5. DETERMINING FACTORY CONVEYOR PARAMETERS



The functions that are used for determining conveyor parameters are not available to **operator**-type users.



Tools required:

- any two objects,
- a photodetector,
- an encoder; to measure the encoder constant only.

The following conveyor data needs obtaining to set printing parameters correctly:

- Conveyor belt travel speed
- or
- Encoder constant, that is the number of pulses generated by the encoder per unit length (1 meter).

Printing parameters are settable by pressing ► ► .

Conveyor belt travel speed

If the conveyor belt moves at a stable speed, no encoder needs using. In such a case:

- Printing is timed by an internal generator
(the parameter of a project open for printing/being printed: ► **Impulse generator source = Internal generator**),
- The printing speed setting (► ► ► ► **Conveyor speed [m/min]**) must equal the conveyor belt travel speed you have measured.











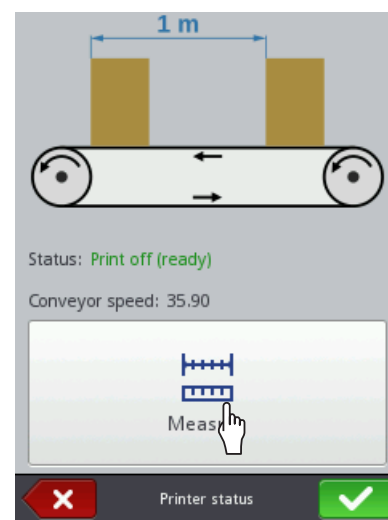
The procedure for measuring the conveyor belt travel speed requires that the printer be provided with a photodetector.



To measure the conveyor belt travel speed it is required that two objects put on the conveyor at a distance of 1 meter (between the objects' leading edges) move one after another in front of the photodetector selected as the source of the trigger signal (the parameter of a project open for printing/being printed: ► **Trigger source**) when:





- The built-in measuring tool is active,
- The conveyor belt is traveling at a constant 'cruising' speed.

To measure the conveyor belt travel speed:

1. Press  ►  ►  ► .
The general settings window is displayed.
2. Press  next to the parameter  ► **Conveyor speed**.
The measuring tool is displayed (see drawing).
3.  Press  to start measuring.
The measured speed at which the conveyor belt moves is displayed in the measurement window.








4. Press  to enter the measured value as the value of the printing parameter **Conveyor speed**.
The conveyor belt travel speed measured with the measuring tool is entered as a printing parameter.
The measurement is finished.
5. Press  to save the setting.

If the above-mentioned procedure cannot be followed (e.g. when the printer is not equipped with a photodetector), the conveyor belt travel speed can be measured with a tachometer and entered as the value of the printing parameter  ►  ►  ►  ► **Conveyor speed** [m/min].

Encoder parameters

If the speed at which the conveyor belt moves is not stable, an encoder must be used. In such a case:

- Printing is timed by pulses generated by the encoder
(the parameter of a project open for printing/being printed:  ► **Impulse generator source** = **External source**),
- An encoder constant ( ►  ►  ►  ► **Encoder constant** [puls/m]) needs to be entered for the encoder to measure the conveyor belt travel speed correctly.



The procedure for measuring encoder parameters requires that the printer be equipped with a photodetector and an encoder.

To measure the encoder constant it is required that two objects put on the conveyor at a distance of 1 meter (between the objects' leading edges) move one after another in front of the photodetector selected as the source of the trigger signal (the parameter of a project open for printing/being printed: |



 ► **Trigger source**) when:

- The built-in measuring tool is active,
- The encoder is measuring the conveyor belt travel speed.

To measure the encoder constant:

1. Press  ►  ►  ► .

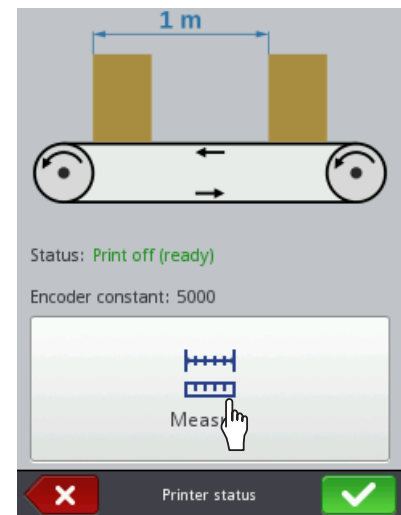
The general settings window is displayed.


2. Press  next to the parameter  ► **Encoder constant**.

The measuring tool is displayed (see drawing).

3.  Press  to start measuring.

The measured encoder constant is displayed in the measurement window.



4. Press  to enter the measured value as the value of the printing parameter **Encoder constant**.


The encoder constant measured with the measuring tool is entered as a printing parameter.

The measurement is finished.

5. Press  to save the setting.

If the above-mentioned procedure cannot be followed (e.g. the printer is not provided with a photodetector), the encoder constant can be calculated on the basis of the following data:

- Number of pulses per revolution given in the encoder data sheet,
- Circumference of the roll.

The calculated value shall be entered as the value of the printing parameter  ►  ►  ► .

► **Encoder constant** [pulse/m].

An example of how to calculate an encoder constant

The example shows an application for labeling Euro-pallets (see [Fig. 61](#)), where there are:

- programmable encoder **11**, which is programmed to generate $X = 63779$ pulses/revolution,
- roll **11b**, $L = 250$ mm (0.25 m) in circumference,
- guide wheel **11c**.



The guide wheel **11c** is designed to ensure appropriate contact of the encoder's roll **11b** with an object to be labeled (with a Euro-pallet in the example). The roll dimensions do not impact on the calculation of an encoder constant.

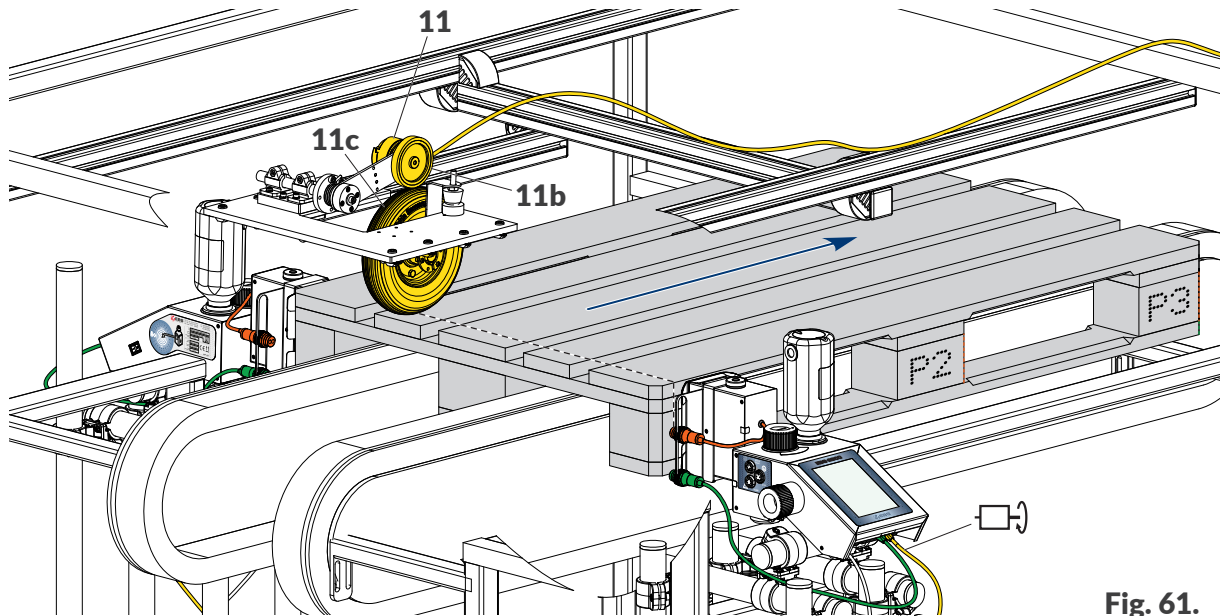




Fig. 61.

Encoder constant Y is the number of pulses generated by the encoder per unit length (1 meter) and is calculated following the formula:

$$Y = X * (1 \text{ meter}/L)$$

that is:

$$Y = 63779 * (1/0.25) = 63779 * 4 = 255116 \text{ pulses/meter}$$

The value calculated in this way shall be entered as the value of the printing parameter   

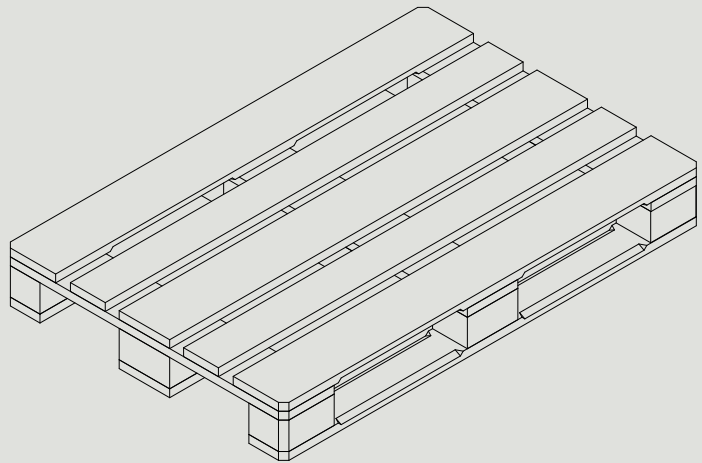
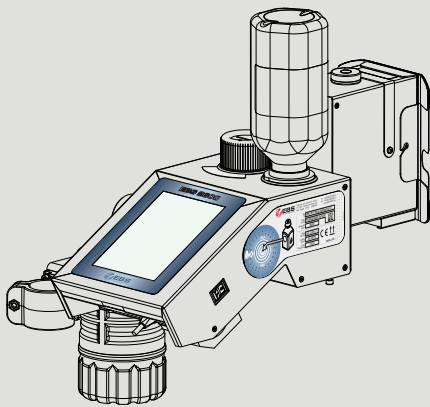


Encoder constant [pulse/m].

Hi-Res

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Industrial DROP ON DEMAND Printers
Original Instructions



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CHAPTER 7

PRINTER

CONFIGURATION

7. PRINTER CONFIGURATION

7.1. GENERAL SETTINGS



General settings are not available to **operator**-type users.

To modify general settings:

1. Press ► ► ► .

The general settings involve the following parameters:

Parameter	Range of settings
Conveyor speed	1 to 200 [m/min]

The parameter is used for defining printing speed only if ► **Impulse generator source** = **Internal generator** for the project being printed.

Set printing speed.

The speed set-point must equal the real conveyor belt travel speed, which can be measured with the tool available after the icon has been pressed.



For more information see “6.5. Determining Factory Conveyor Parameters” and “7.1.1. Maximum Printing Speed”.

Encoder constant	5000 to 500000 [pulses/m]
-------------------------	----------------------------------

The parameter is used for defining printing speed only if ► **Impulse generator source** = **External source** for the project being printed.

The encoder constant, i.e. the number of pulses generated by the encoder per unit length (1 meter).

The encoder constant depends on:

- Number of pulses per one revolution of the encoder in use,
- Circumference of the roll.

To ensure, therefore, that the encoder constant is within the required range, you need to apply an appropriate encoder and/or a roll with an appropriate circumference.

For example, if the encoder is programmed to generate 63779 pulses/revolution and provided with a roll 250 mm in circumference, the encoder constant is 255116 pulses/m.

The constant of an encoder connected to the input can be measured with the tool available after pressing the icon displayed next to the parameter.



For more information see “6.5. Determining Factory Conveyor Parameters”.

Statistics	<input checked="" type="checkbox"/> / <input type="checkbox"/>
-------------------	--

Decide whether the scope of statistics available in the **EBS Web User Interface** editor shall include the number of printouts of every project () or not ()

Parameter	Range of settings
Autostart current project	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Printing of the open project starts immediately after the printer starts up (<input checked="" type="checkbox"/>) or it needs to be started manually (<input type="checkbox"/>)	
<input type="button" value="⌚"/>	
Change the current date and time.	

2. Modify the selected parameter.
3. Press to acknowledge.
The general settings are modified.

7.1.1. MAXIMUM PRINTING SPEED

The maximum speed at which objects to be labeled move in front of the printhead (printing speed) depends on parameters such as:

- Print resolution in a horizontal direction (the project parameter ► **Resolution**),
- Intensity (► **Dot size**).



Intensity can be modified while printouts are being made owing to the application of **Intensifier**-type objects to the project that is being printed. The maximum speed at which a project can be printed is, therefore, restricted by the highest intensity level used in the project.

The below-given table shows maximum printing speeds for recommended resolutions in a horizontal direction (which equal print resolutions in the vertical direction) versus intensity.

Resolution [dots/m]	Dot size	Maximum travel speed [m/min]
7086	1	60.0
7086	2	41.5
7086	3	28.6
7086	4	21.8
7086	5	17.6
7086	6	14.8
7086	7	12.8
7086	8	11.2
7086	9	10.0
7086	10	9.0

7.2. LOCAL SETTINGS



Local settings are not available to **operator**-type users.

To modify local settings:

1. Press ► ► ► .

The local settings involve the following parameters:

Parameter	Range of settings
Language	
The language in which the user interface is displayed.	
Date format	DD:MM:YY, MM:DD:YY, DD:MM:YYYY, MM:DD:YYYY, YYYY:DD:MM, YYYY:MM:DD, YY:DD:MM, YY:MM:DD
Default date format for Date/Time -type text objects .	
Date separator	“.”, “.”, “-”
Default date separator, that is the character that separates date items from each other in Date/Time -type text objects .	
Time format	HH:MM:SS, HH:MM
Default time format for Date/Time -type text objects .	
Time separator	“.”, “.”
Default time separator, that is the character that separates time items from each other in Date/Time -type text objects .	

2. Modify the selected parameter.
3. Press to acknowledge.



If the value of the parameter **Language** has been modified, then the user interface is restarted directly after the modification has been acknowledged with the icon. The restart of the user interface does not pause printing.

The local settings are modified.

7.3. SETTING THE CURRENT DATE AND TIME



The current date or time cannot be set by **operator**-type users.

Operator-type users can only access the preview of the current data and time by pressing the clock icon on the status bar on the main screen.

To set the current date and time:

1. Press ► ► ►

or

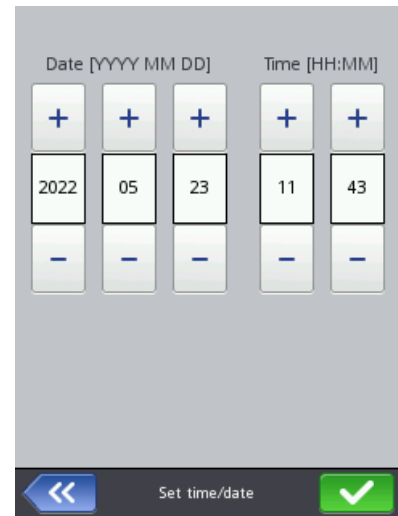
Press the clock icon on status bar **A** on the main screen (see [Fig. 40 on page 49](#)).

2. Set date and time items using:

- the / icons
- or
- the numeric keypad.

3. Press to acknowledge.

The date and time are set.



7.3.1. CONFIGURING THE DISPLAY



Display configuring is not available to **operator**-type users.

To configure the display:

1. Press ► ►

The following parameters need setting to configure the display:

Parameter	Range of values
-----------	-----------------

Normal screen brightness	10, ..., 100 [%]
---------------------------------	------------------

Brightness of the screen during the printer's normal operation.

Turn off screen after	never, 10 s, ..., 5 min
------------------------------	-------------------------

Idle time after which the display is off.



If the printer is in an error state, the display is not turned off.

If the printer enters an error state while the display is blank, the display wakes up.

To wake up the display that is blank, touch the display anywhere.


Dim screen after	never, 10 s, ..., 5 min
-------------------------	-------------------------

Idle time after which the display will be dimmed to the percentage given with the **Dimmed screen brightness** parameter.

Parameter	Range of values
Dimmed screen brightness	It is dependent on the value of the Normal screen brightness parameter

Brightness of the screen after the expiration of the idle time given with the **Dim screen after** parameter.

When you press any point on the screen, brightness returns to normal.

2. Modify the selected parameter.
3. Press  to acknowledge
The display is configured.

7.3.2. SOUND SIGNAL SETTINGS














 *Sound signal settings are not available to operator-type users.*

To modify sound signal settings:

1. Press  ▶  ▶ .


The sound signal settings involve the following parameters:

Parameter	Range of values
 ▶ Enable sound	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Activate (<input checked="" type="checkbox"/>) / deactivate (<input type="checkbox"/>) sound signaling in the printer. When sound signaling in the printer is deactivated (<input type="checkbox"/>), the sound is totally turned off and detailed signaling settings are not available.	
 ▶ Error sound signal	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated when an error occurs.	
 ▶ Keyboard audio feedback	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated while button 1k (see Fig. 2 on page 16) on the side wall of the printer's control unit is used.	
 ▶ Touchscreen audio feedback	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated while the touch screen is used.	
 ▶ Message sound signal	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Activate (<input checked="" type="checkbox"/>) / deactivate (<input type="checkbox"/>) sound signals in sheet tab  .	
 ▶ Ink accept sound signal	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated after a bottle of ink has been approved.	
 ▶ Printer off sound signal	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated while the printer shuts down.	
 ▶ Start printing sound signal	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated while printing turns on.	
 ▶ Stop printing sound signal	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Sound signals generated while printing pauses.	


2. Set a value of the selected parameter.
3. Press  to acknowledge.
The sound signals are modified.

7.4. CONFIGURING COMMUNICATIONS INTERFACES





 The configuring of communications interfaces is not available to **operator**-type users.
Operator-type users can only get information about basic parameters such as the printer's **IP** address.

7.4.1. ETHERNET

The printer can be connected to an **Ethernet** network or directly to a PC via the connector  in the control unit.




For more details see “2.2. Printer Structure” ► “2.2.3. External Connections”.

The **Ethernet** interface  can be used, e.g. for controlling the printer remotely or for receiving data from an external device; this data may then be entered to a project via a **Communications port**-type text object or bar/matrix code .




For more details on how to create/edit a **Communications port**-type text object  see “5.4.2.5. Creating/Editing a Communications port-type Text Object”.


Bar/matrix codes with dynamic contents can be graphic interpretation of a **Communications port**-type text object  and as such they can be created by means of the **EBS Web User Interface** only.

To configure the **Ethernet** interface:



1. Press  ►  ► .



The following parameters need setting to configure the **Ethernet** interface:

Parameter	Range of values
 Basic ► Enable networking	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Activate / deactivate the Ethernet interface.	
 Basic ► Configure network automatically (with DHCP)	<input checked="" type="checkbox"/> / <input type="checkbox"/>
Ethernet configuration mode:	
- <input checked="" type="checkbox"/> : network connection parameters are set automatically while a network connection is being established,	
- <input type="checkbox"/> : network connection parameters are set manually with the parameters IP , Netmask , Gateway , DNS available in sheet tab Advanced .	
 For the information on how to set up your network connection manually contact your network administrator.	
 Basic ► Current IP	information parameter
The IP address of the printer.	

2. Modify the selected parameter.
3. Press  to acknowledge.
The **Ethernet** interface is configured.


7.4.2. RS-232/RS-485

The **RS-232/RS-485** interface  can be used for receiving data from an external device; this data may then be entered to a project via a **Communications port**-type text object or bar/matrix code .

Configuration of the **RS-232/RS-485**  is part of the parameters for a **Communications port**-type text object or bar/matrix code .



For more details on how to create/edit a **Communications port**-type text object  see “5.4.2.5. **Creating/Editing a Communications port-type Text Object**”.

Bar/matrix code with dynamic contents can be graphic interpretation of a **Communications port**-type text object  and as such they can be created by means of the **EBS Web User Interface** only.

7.5. CONFIGURING USERS



User configuring is not available to **operator**-type users.

In the printer, there are three different types of privileges (groups of users):

- **operator**,
- **administrator**,
- **serviceman**.



For more information about the types of users and on how to change the type of user see [“3.3. Types of Privileges/Users”](#).

7.5.1. CHANGING THE USER PASSWORD

Every **administrator**-type user can change his/her password and the password of every user who is at the same or lower access level.

To change the user password:

1. Press ► ► .
2. Select the user whose password you wish to change.
3. Press .

If the icon is inactive, you are not authorized to change the selected user's password.
4. Enter a new password.
5. Re-enter the new password.
6. Press to acknowledge.

The password of the selected user is changed.

7.5.2. ADDING A USER

Administrator-type users can add a user who is at the same or lower access level.

To add a user:


1. Press ► ► .
2. Press .
3. Enter a name of the user.

The user name must be different from any name of the users defined in the printer.
4. Select a type of user (the name of a group of users)
5. Select a user icon.



A graphics file that can be selected as a user icon must first be imported to the printer by means of the **image manager** available in the **EBS Web User Interface**.







6. Enter the user password.

7. Re-enter the password.
8. Press  to acknowledge.
The user is added.

7.5.3. DELETING A USER

Administrator-type users can delete a user who is at the same or lower access level except the user currently logged-in.

To delete a user:







1. Press  ►  ► .
2. Select the user that you wish to delete.
3. Press .
- If the  icon is inactive, you are not authorized to delete the selected user.
In the dialog box displayed you are prompted to acknowledge the operation.
4. Press  to acknowledge.
The user is deleted.

7.5.4. CHANGING AN ACCESS LEVEL

Administrator-type users can change the access level of every user at the same or lower access level.

No access level can be changed to a level higher than the access level of the currently logged-in user.

To change an access level:

1. Press  ►  ► .
2. Select the user whose access level you wish to change.
3. Press .
- If the  icon is inactive, you are not authorized to change the access level of the selected user.
4. Change the access level (group name).
5. Press  to acknowledge.
The access level of the selected user is changed.

7.5.5. CHANGING THE USER NAME

Administrator-type users can change the name of every user at the same or lower access level.

To change the user name:

1. Press  ►  ► .

2. Select the user whose name you wish to change.

3. Press .

If the  icon is inactive, you are not authorized to change the selected user's name.

4. Change the user name.

The user name must be different from any name of the users defined in the printer.

5. Press  to acknowledge.

The name of the selected user is changed.

7.5.6. SELECTING A USER FOR AUTOMATIC LOGGING IN

Administrator-type users can select every user at the same or lower access level to be logged in automatically after printer startup.

The user selected for automatic logging in after printer startup is marked with .

The **administrator**-type user whose user name is "**Administrator**" is marked with  by default.



If none of the users defined in the printer is marked with , then immediately after printer startup the screen is displayed where a user to be logged in can be selected.

To select a user for automatic logging in / change the user who is logged in automatically:


1. Press  ►  ► .

2. Select a user you wish to be logged in automatically.

3. Press .

If the  icon is inactive, you are not authorized to select a given user for automatic logging in.




The  icon is used for both selecting a user for automatic logging in and deleting such functionality.

The user who will log in automatically after printer startup is selected.

7.6. GLOBAL DATA

7.6.1. IMAGES

An image is a graphics file in *.png format. An image can be applied:

- to every project where an **Image**-type object  is used,
- as a user icon.

It is recommended that monochromatic (black and white) images be used.



*For more details on how to create/edit a **Image**-type object  see “5.4.4.2. Creating/Editing an Image-type Object”.*


For more details on how to set a user icon see “7.5. Configuring Users”.


Before a graphics file is used, it must be imported to the printer via the **image manager** available in the **EBS Web User Interface**. The **object manager** can also be used for deleting selected graphics files from printer memory.

7.6.2. TEXT FILES

A text file can be applied to every project where a **Text file**-type text object or bar/matrix code  is used.







*For more details on how to create/edit a **Text file**-type text object  see “5.4.2.6. Creating/Editing a Text file-type Text Object”.*

*Bar/matrix code with dynamic contents can be graphic interpretation of a **Text file**-type text object  and as such they can be created by means of the **EBS Web User Interface** only.*

Before a text file is used in a project, it must be imported to the printer via the **text file manager** available in the **EBS Web User Interface**. The **text file manager** can also be used for deleting selected files from printer memory.


7.6.3. SCRIPTS

A script can be applied to:

- Every text object : to process object contents before a project is printed ( ► **Pre-print processing script**),
- **Communications port**-type text objects or bar/matrix codes : to process data after the data has been received by a communications interface ( **Communication** ► **Received data processing script**).

Before a script is used in a project, it must be imported to the printer via the **script manager** available in the **EBS Web User Interface**. The **script manager** can also be used for deleting selected scripts from printer memory.

7.6.4. FONTS

All text objects  are generated on the basis of fonts:

- **matrix fonts (*.xml)**; marked with the sign  on the font list (available in object parameters),
- **TrueType fonts (*.ttf)**; marked with the sign  (default fonts) or  (user fonts) on the font list.


The **Hi-Res** EBS-2600 printers are provided with a set of built-in fonts (default fonts). The set of fonts can be extended because user fonts can be added.

Before user fonts are used in a project, they must be imported to the printer via the **font manager** available in the **EBS Web User Interface**. The **font manager** can also be used for deleting selected fonts from printer memory.

7.7. EXCHANGING DATA VIA A USB PORT




Data exchanging via the **USB** port is not available to **operator**-type users.


Data can be exchanged between devices by means of an approved **USB** memory device plugged in to the connector  in the control unit.




For **USB** memory specifications see “2.2. Printer Structure” ► “2.2.3. External Connections”.

To get access to data exchange functions:

1. Plug in an approved **USB** memory device to the connector  (10; see [Fig. 2 on page 16](#)) in the control unit.

The  icon on status bar **A** on the main screen (see [Fig. 40 on page 49](#)) is active.

2. Press  on the status bar on the main screen.

or

Press  ►  ► .

The **USB** memory window is displayed. The following function icons are available in the window:



- import projects,



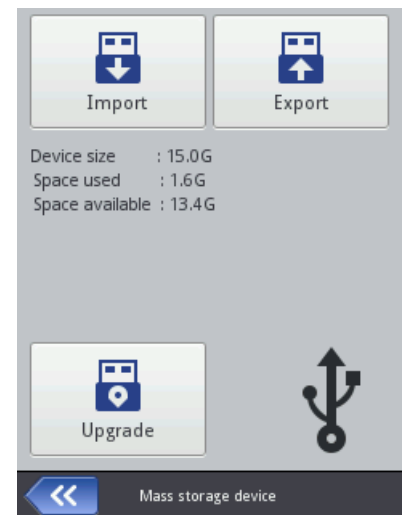
- export projects,



- update the printer software.

The following information is available in the **USB** memory window:

- **Device capacity:** total capacity of the **USB** memory device,
- **Space used:** occupied space of the **USB** memory,
- **Space available:** space available in **USB** memory.



7.7.1. EXPORTING/IMPORTING PROJECTS

Projects can be transferred between:

- printers,
- the printer and a **PC** (e.g. to use the **Offline EBS Web User Interface** editor).

The project files are:

- in ***.exp** format,
- saved in a **USB** memory device in the main folder.

Regardless of the number of projects to be exported, one ***.exp** file is created while the projects are being exported.

If a project contains external items such as a font, an image, a text file or a script, the items are imported/exported together with the project.

To export a selected projects to a **USB** memory device:

1. Press  ►  ►  ►  ►  or  ►  ► .

The library containing the projects available in printer memory is displayed.

2. Select a project (a ***.prj** file) that you wish to export to a **USB** memory device.



*A project to be exported to a **USB** memory device can be selected from the list or the name of a project can be entered in the text box in the upper part of the window.*

The preview of the selected project is displayed in the lower part of the window.

3. Press  to acknowledge.

The selected project is exported to a **USB** memory device and a relevant message is displayed in the dialog box.

The file named **EBS2600_YYYYMMDD_HHMMSS.exp** is created in the main folder in the **USB** memory device.

In the file name, **YYYYMMDD** means the date (year, month, day) and **HHMMSS** means the time (hour, minute, second) when the file was created.

4. Press to finish the procedure under which the selected project is exported to the **USB** memory device.

To export all projects to a **USB** memory device:

1. Press  ►  ►  ►  ►  or  ►  ► .

All project are exported to the **USB** memory device and a relevant message is displayed in the dialog box.







The file named **EBS2600_YYYYMMDD_HHMMSS.exp** is created in the main folder in the **USB** memory device.

In the file name, **YYYYMMDD** means the date (year, month, day) and **HHMMSS** means the time (hour, minute, second) when the file was created.

2. Press to finish the procedure under which all projects are exported to the **USB** memory

device.



To import projects from a **USB** memory device to the printer:

1. Press  ►  ►  ►  or  ► .
2. Select the folder in the **USB** memory device and the ***.exp** file that contains a project/projects that you wish to import to the printer.

Files in other formats are not visible.



The file that contains a project/projects to be imported to the printer can be selected from the list or the name of the file can be entered in the text box in the upper part of the window.

3. Press  to acknowledge.
The project(s) included in the selected ***.exp** file are imported to the printer and a relevant message is displayed in the dialog window.
4. Press  to finish the procedure under which projects are imported from the **USB** memory device to the printer.

7.7.2. UPDATING SOFTWARE

The function is used for updating the system software to a newer version.






NOTE: A risk that the printer gets damaged!
The updating procedure must not be interrupted. Otherwise, the printer may get damaged.

Before you start updating the printer software:


- Check what the current software version is,



The version of the printer software (system) can be viewed by pressing  ►  ► .

- Contact an authorized representative of **EBS Ink Jet Systeme GmbH** to obtain an update package; the update package is a file in ***.ebs** format,
- Export all projects to a **USB** memory device; if projects contain external items such as a font, an image, a text file or a script, the items are exported together with the projects.

To update the printer software:

1. Copy the installation package to the **main folder** in a **USB** memory device.
2. Plug in the **USB** memory device that contains the update package to the connector  in the control unit.

The software update function is active.



*The software update function **is not** active if:*

- *the version of the printer's software is too early; before the latest version can be installed, it is required that the previous update package be installed,*
- *the printer software is up to date,*
- *the version of the printer software is later than the selected update.*

3. Press  ►  ►  ►  or  ► .

The list of update packages available in the main folder in the **USB** memory device is displayed.

4. Select the *.**ebs** file that contains a suitable update package.

Files in other formats are not visible.

5. Press  to acknowledge.

The message is displayed.


Printer is prepared for update. Press “OK” to turn off the printer. After printer is turned off please turn it on again, update will continue. It may take some time - please be patient and do not turn printer off!

6. Follow the on-screen instructions.

The printer shuts down while the updating procedure is carried out.

7. Press button **1k** (see [Fig. 2 on page 16](#)) on the control unit's side wall to start the printer up.

The update report is displayed.

8. Press  to finish the procedure.

The software update procedure is finished.

CHAPTER 8

PERIODIC MAINTENANCE

8. PERIODIC MAINTENANCE

The objective of periodic maintenance is to ensure reliable operation of the printer.

8.1. PURGING/VENTING THE PRINTHEAD



 *Purging functions are not available to **operator**-type users.*

*The printhead purging/venting can be done by **instructed persons**.*

Printhead purging/venting is disabled if the printer reported a warning about critically low ink in the bottle.



Tools required:

- a sprayer with wash-up (Part No. **XS21602**),
- protective gloves that are resistant to ink/wash-up,
- safety goggles,
- absorbent material or a metal vessel for collecting waste,
- a cross head screwdriver,
- optional drip molding (an accessory; Part No. **P513324**).



The objective of printhead purging/venting is to:

- Improve print quality by clearing slightly clogged nozzles and cleaning the nozzle plate in the print-head,
- Vent the printer after it has been transported or a bottle has been replaced.

The purging/venting consists of the opening of all nozzles at the same time and jetting of ink through the nozzles under pressure.


The jetted ink flows down the nozzle plate (optionally along drip molding **5c** - see [Fig. 62 on page 150](#)) to drip rail **3b**, and then it is collected by the drip system and reaches waste bottle **3a**.

Two printhead purging/venting modes are available:

- short purging lasting about **2 seconds**,
- long purging lasting about **85 seconds**,

It is advisable to follow the printhead purging/venting procedure with the application of optional drip molding **5c**, which is part of a double-sided accessory (Part No. **P513324**). If no drip molding is used, the ink outlet from the printhead (from the nozzle plate) must be secured with absorbent material.

To prepare the printer for the printhead purging/venting procedure with the use of an optional drip molding (the recommended method):

1. If the printer is printing, press the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on the main screen to pause printing.

- Use the cross head screwdriver to loosen two screws **5d** (see [Fig. 62](#)) that fasten slide **5**.

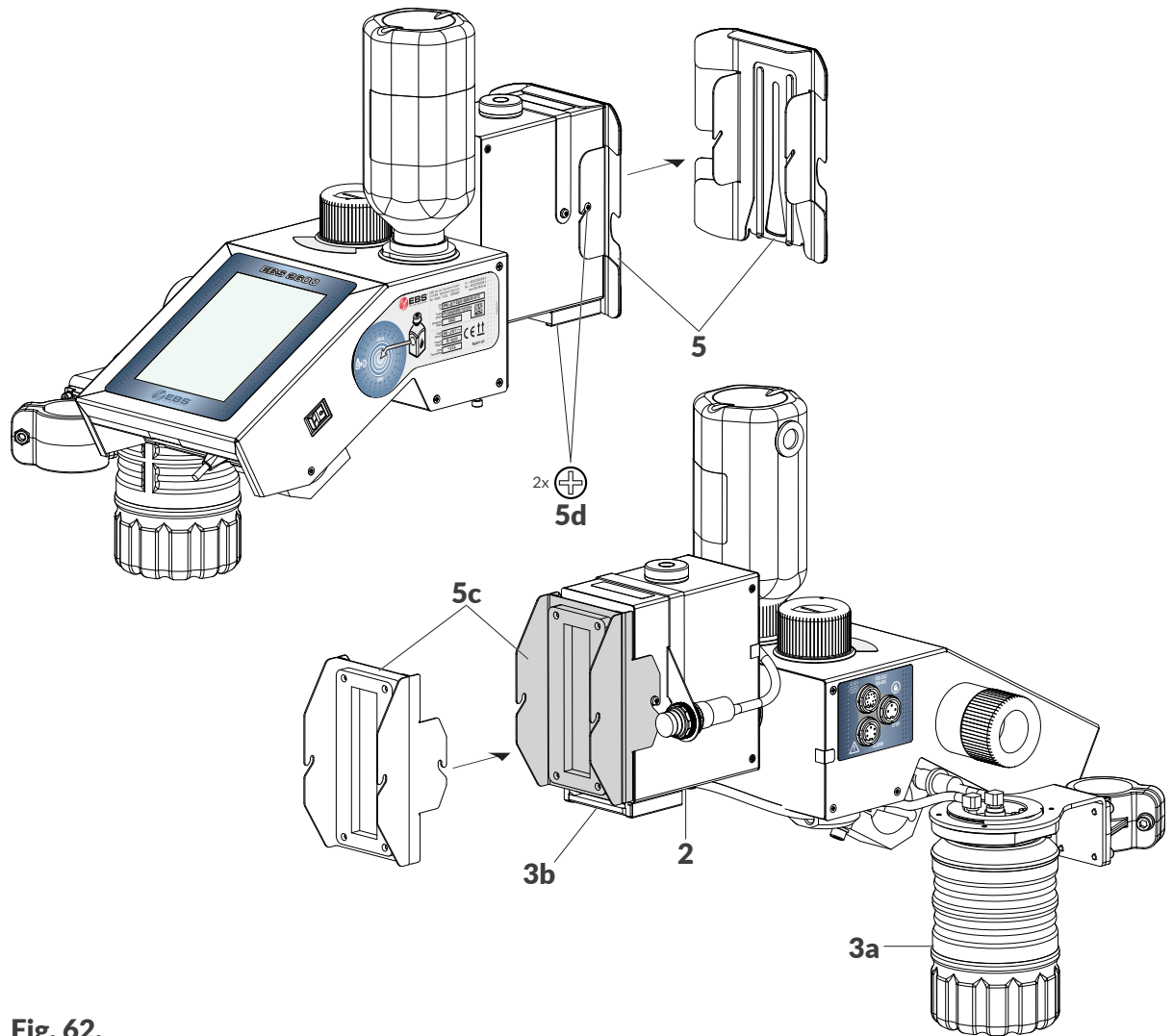



Fig. 62.

- Remove slide **5**.
- Use the sprayer to spray wash-up over the nozzle plate.
- In place of the removed slide **5** install drip molding **5c**.
- Use the cross head screwdriver to tighten two screws **5d** to fasten drip molding **5c**.



If the **long** purging/venting procedure is followed, it may be necessary to put absorbent material or a metal vessel under the printhead because the drop system may be incapable of receiving the entire ink flowing out of the nozzles during the procedure.

To prepare the printer for the printhead purging/venting procedure without the use of an optional drip molding:

- If the printer is printing, press the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on the main screen to pause printing.
- Use the sprayer to spray wash-up over the nozzle plate.
- Secure the printhead's ink outlet (the nozzle plate) with absorbent material.

To start **short** purging/venting of the printhead:


- Press and hold the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on the main screen, and when a drop-down menu occurs press  **Purge**

or



Press  ►  ►  ►  **Purge.**

The purging/venting procedure starts and lasts **about 2 seconds**.



Multiple pressing of the icon  **Purge** extends the time for short purging/venting of the print-head.

To start **long** purging/venting of the printhead:


1. Press and hold the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on the main screen, and when a drop-down menu occurs press  **Long purge**

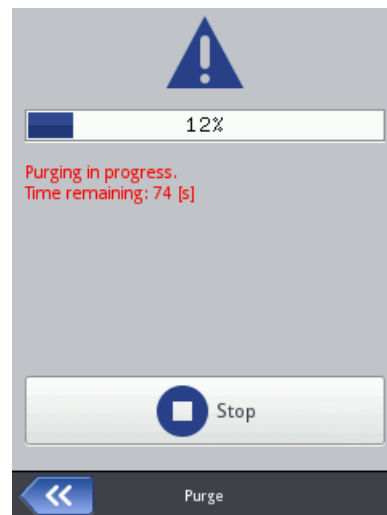
or

Press  ►  ►  ►  **Long purge.**


The purging/venting procedure starts and lasts **about 85 seconds**.

The window displayed on the screen (see drawing) contains:

- The procedure progress bar,
- The counter indicating the time remaining until the procedure finishes,
- The  icon that is used for interrupting the purging/venting procedure at any time.



To restore normal operation of the printer after the printhead purging/venting procedure with the use of an optional drip molding (the recommended method) has been carried out:

1. Use the cross head screwdriver to loosen two screws **5d** (see [Fig. 62 on page 150](#)) that fasten drip molding **5c**.
2. Remove drip molding **5c**.
3. Re-install slide **5**.
4. Use the cross head screwdriver to tighten two screws **5d** to fasten slide **5**.
5. Press the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on the main screen to resume printing.
6. Assess print quality.

If print quality has not improved sufficiently, repeat the purging/venting procedure.

If print quality is still insufficient although the above-mentioned procedure has been repeated, carry out the nozzle plate cleaning procedure.



For more details about the nozzle plate cleaning procedure see [“9.3.1. Cleaning the Nozzle Plate”](#).

To restore normal operation of the printer after the printhead purging/venting procedure without the use of an optional drip molding has been carried out:

1. Press the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on the main screen to resume printing.
2. Assess print quality.

If print quality has not improved sufficiently, repeat the purging/venting procedure.

If print quality is still insufficient although the above-mentioned procedure has been repeated, carry out the nozzle plate cleaning procedure.



For more details about the nozzle plate cleaning procedure see [“9.3.1. Cleaning the Nozzle Plate”](#).

8.2. REPLACING THE AIR FILTER



The air filter can be replaced by *instructed persons*.



Tools required:

- a complete air filter (Part No. **P511653**),
- an instrument for filter unscrewing (Part No. **P863606**; see drawing),
- a sprayer with wash-up (Part No. **XS21602**).



When it is dirty, air filter **1e** (see [Fig. 63 on page 153](#)) can be the reason for the accumulation of air bubbles in the printhead, which in consequence may lead to deterioration of print quality or no prints at all. It is necessary to inspect air filter **1e** systematically, with frequency adequate to the conditions in which the printer operates. The filter gauze in a clean air filter should be white in color. If the filter gauze is dirty, it is advisable to replace the complete air filter (**1e**). The air filter should be replaced not less frequently than every **12 months**.

To check the condition of air filter/replace the air filter:

1. Shut the printer down in regular mode.



For more details see [“4.2.1. Shutting down in Regular Mode”](#).

2. Use instrument **15** to screw air filter **1e** (see [Fig. 63 on page 153](#)) out of ink-system valve **1d**. While air filter **1e** is being unscrewed, it is necessary to hold ink-system valve **1d** with the hand so that it does not turn.

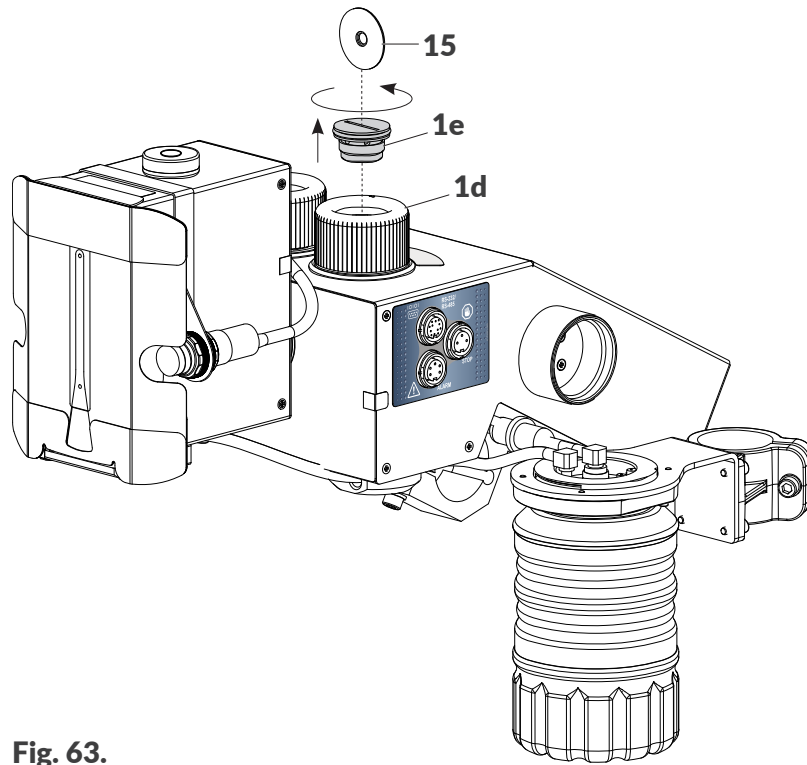


Fig. 63.

3. Assess how dirty the filter gauze is.
If the filter gauze is not dirty, complete air filter **1e** can be installed back into the printer.
Otherwise, a new filter must be installed.
4. Assess how clean the seat of ink system valve **1d** is. If it is soiled with ink, clean the seat using sprayed wash-up and then dry it.
5. Use instrument **15** to screw air filter **1e** into ink-system valve **1d**. Screw the filter in to the perceptible limit.
While air filter **1e** is being screwed in, it is necessary to hold ink-system valve **1d** with one hand so that it does not turn.
6. Check the position of ink-system valve **1d** and set it at **PRINTING**, if need be.
7. Start the printer up.



For more details about printer startup see **"4.1. Starting the Printer up"**.

8.3. STORING AND TRANSPORTING

8.3.1. STORING THE PRINTER

The printer shall be stored in a dry place. It is recommended that the printer be stored in its original package.

The printer must be in a horizontal position in storage.

The procedure for preparing the printer for storing depends on the period over which the printer is not to be used.

There are two types of preparation for storing:

- for a period of up to 1 week,
- for a period of over 1 week.

Storing for up to 1 week

To prepare the printer for storing over a period of **up to 1 week**:

1. Shut the printer down in regular mode.



For more details see [“4.2.1. Shutting down in Regular Mode”](#).

No additional operations are required.

If the printer is used in a heavily polluted environment, it is advisable to apply standard sealing cover **5a** (see [Fig. 23 on page 33](#)) or optional sealing cover **5b** (see [Fig. 24 on page 33](#)) to the nozzle plate (in place of the slide).



For more details see [“8.3.1.1. Installing a Sealing Cover”](#).

Do not detach the ink bottle during the storage period.

When the printer that is planned to be stored over **up to 1 weeks** is taken out of storage, it can be restarted with no additional operations, but it is advisable to make a few test prints to assess print quality.



For more details about printer startup see [“4.1. Starting the Printer up”](#).

It may also be necessary to carry out the short purging/venting procedure for the printhead once or several times.



For more details about printhead purging/venting procedures see [“8.1. Purging/Venting the Printhead”](#).

Storing for over 1 week



Only **skilled persons** can prepare the printer for storing over a period longer than 1 week. For more information contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

When a storage period of **over 1 week** elapses, the printer must be started up in a way similar to starting up directly after installation.



For more details see **"2.3. Installing the Printer"**.

8.3.1.1. INSTALLING A SEALING COVER

To protect the nozzles and the nozzle plate and also to avoid ink leaks from the printhead while the printer is stored/transported, it is recommended that a sealing cover be used. The sealing cover is available in two variants (see [Fig. 64](#)):

- Standard, single-sided sealing cover **5a**,
- Sealing cover **5b**, which is part of a double-sided accessory (Part No. **P513324**).

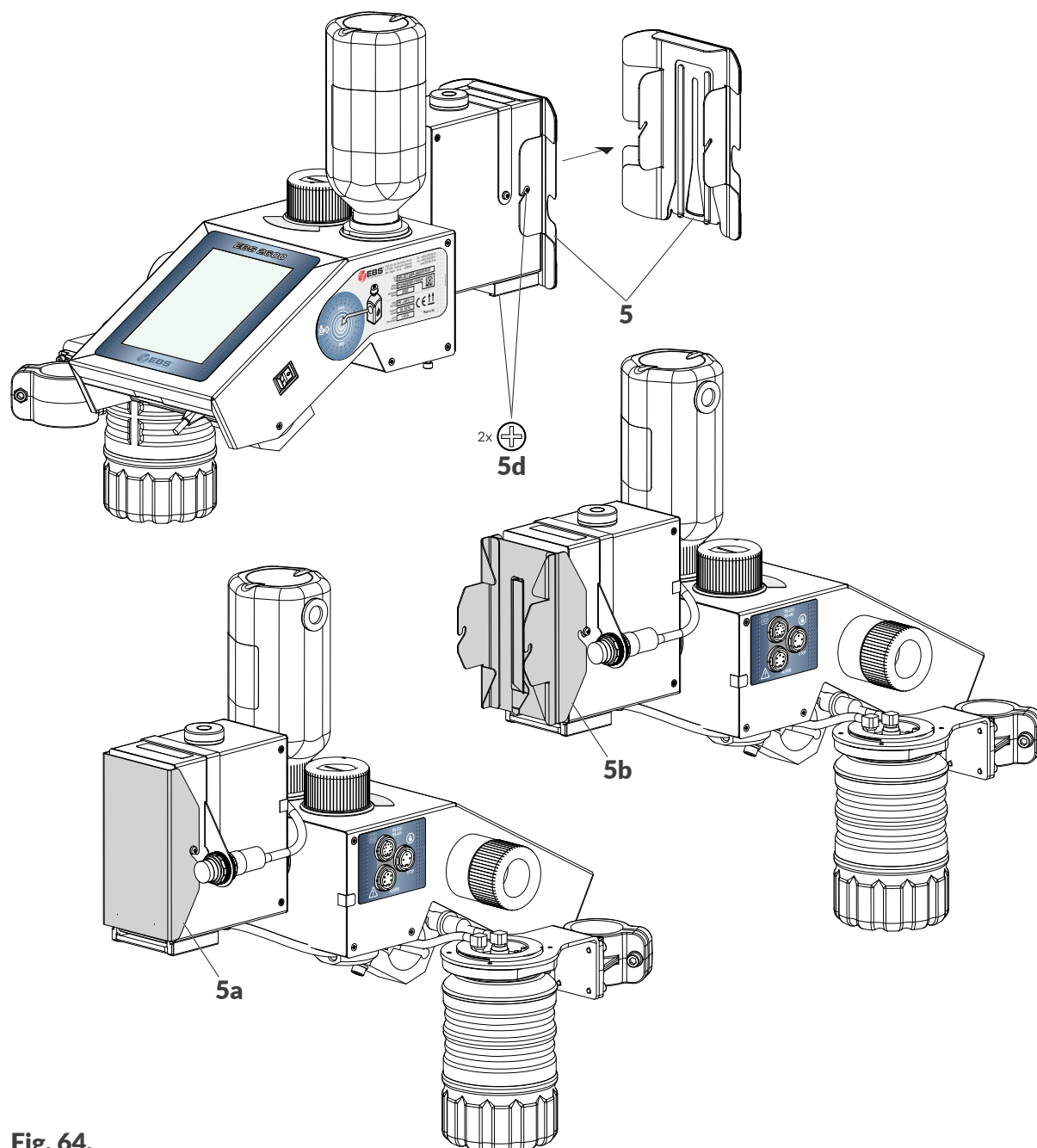


Fig. 64.

To install the sealing cover:



Tools required:

- a sprayer with wash-up (Part No. **XS21602**),
- protective gloves that are resistant to ink/wash-up,
- safety goggles,
- a cross head screwdriver,
- standard or optional sealing cover (an accessory; Part No. **P513324**).



1. If the printer is printing, press the  icon on menu bar **C** (see [Fig. 43 on page 52](#)) on

- the main screen to pause printing.
- Use the cross head screwdriver to loosen two screws **5d** (see [Fig. 64 on page 156](#)) that fasten slide **5**.
 - Remove slide **5**.
 - Use the sprayer to spray wash-up over the nozzle plate.
 - In place of removed slide **5** install standard sealing cover **5a** or optional sealing cover **5b**.
 - Use the cross head screwdriver to tighten two screws **5d** to fasten the sealing cover.

8.3.2. TRANSPORTING THE PRINTER

Printer transportation involves the necessity to move the printer to another place:

- Within premises, e.g. between various production lines (internal transportation),
- To the outside, e.g. to a service point (external transportation).

Total weight of the printer with a 0.5 l bottle of ink: about **7.3 kg (about 16.1 lbs)**.

Weight of individual parts:

- Control unit with a printhead and a 0.5 l bottle: **about 4.8 kg (10.6 lbs)**
- Installation kit (beams, holders): **about 2.5kg (5.51 lbs)**
- Bottle of ink with a capacity of:
 - 0.25 l: **about 0.25 kg (0.55 lbs)**; starter bottle
 - 0.5 l: **about 0.5 kg (1.10 lbs)**

Internal transportation



*The printer can be handled by **instructed persons**.*

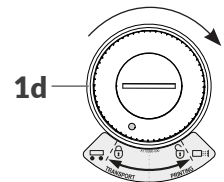
To transport the printer within the premises:

- Shut the printer down in regular mode.



*For more details see **"4.2.1. Shutting down in Regular Mode"**.*

- Set ink-system valve **1d** at the **TRANSPORT** position.



- Transport the printer to a required destination.

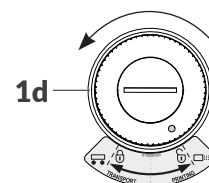


NOTE: Handle the printer in a horizontal position!
The printer must be transported in a horizontal position.

*Make sure that the nozzle plate, control unit screen, cables are not damaged during transport. It is recommended that the nozzle plate be protected with standard sealing cover **5a** or optional sealing cover **5b** installed in place of the slide. For more details see **"8.3.1.1. Installing a Sealing Cover"**.*

- Position the printer at a required workstation.

5. Set ink-system valve **1d** at the **PRINTING** position.



6. Start the printer up.



For more details about printer startup see **"4.1. Starting the Printer up"**.

External transportation



Only **skilled persons** can prepare the printer for external transportation. For more information contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

Before the printer is transported outside the premises, it is necessary to prepare it as if it was prepared for storing over a period of more than 1 week.

It is recommended that the printer be transported in its original package.

Permissible mechanical hazards inside the package:

- impacts: **max. 1 g, max 2 ms.**

For that reason, once it has been transported (e.g. it has returned from the service point) it must be started up in a way similar to starting up directly after installation.



For more details see **"2.3. Installing the Printer"**.




CHAPTER 9

TROUBLESHOOTING

9. TROUBLESHOOTING




9.1. MESSAGE HANDLING

Important information concerning printer operation is signaled in the following way:

- The icon  /  /  is displayed on status bar **A** (see [Fig. 41 on page 49](#)); the color of the icon indicated a type of message,
- The relevant message is displayed in the dialog box:

Attention! The message list contains new information, which must be read and confirmed.








The list of messages is displayed when the icon  /  /  on status bar **A** is pressed.

All the types of messages are displayed in dialog boxes and saved in message history, which is available after pressing   or the icon  /  /  on status bar **A**.



For more details see [“6.1. Message History”](#).

Message history is divided into four tab sheets:

- All messages ,
- Error messages ,
(the messages are displayed in red, and the icon  is displayed on the status bar),
- Warning messages ,
(the messages are displayed in yellow, and the icon  is displayed on the status bar),
- Informational messages ,
(the messages are displayed in green, and the icon  is displayed on the status bar).

9.1.1. ERROR MESSAGES

Error messages (see drawing) are displayed in the dialog box when a fault or an error occurs.

When the dialog box containing an error message is displayed, the display background flickers red.





Error messages concern:

- Errors that make printing impossible, e.g. an empty bottle.
The printer goes into an error state in which:
An optional status beacon glows red,
The conveyor belt can be halted.



If an error message is displayed, the handling procedure depends on the reason.

If an error message is displayed due to an error in the printer (e.g. the empty ink bottle) and the printer automatically goes into an error state:

- View the contents of the error message.
- Press  to acknowledge the message or  to display more details about the error.
- Take an action that is adequate for the message, e.g. install a new bottle of ink.
- Press  to delete a single message or  to delete all messages.

The printer goes out of the error state.



 Message deleting is not available to **operator**-type users.

- If the error pauses printing, resume printing.

9.1.2. WARNING MESSAGES

Warning messages (see drawing) are displayed in the dialog box when a condition that requires user intervention occurs.

When the dialog box containing a warning message is displayed, the display background flickers yellow.

Warning messages concern:

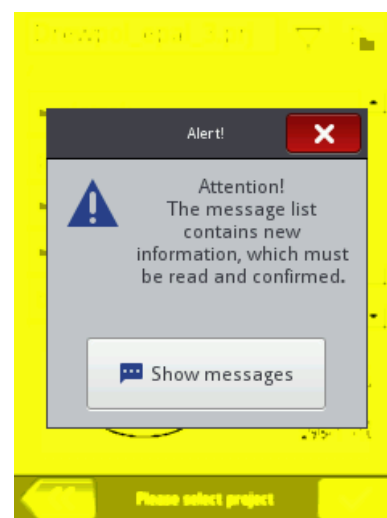
- A situation that has occurred in the printer and requires user intervention, e.g. prints are triggered too fast.

The printer **goes** into a warning state where:

Printing may be turned on/continue,





An optional status beacon glows yellow.

- A situation that may arise from the operation currently carried out by the user.
- The printer **does not go** into a warning state.



If a warning message is displayed, the handling procedure depends on the reason.

If a warning message is displayed due to a situation that has occurred in the printer and requires user intervention (e.g. when prints are triggered too fast) and the printer automatically goes into a warning state:

- View the contents of the warning message.
- Press  to acknowledge the message or  to display more details about the warning.
- Take an action that is adequate for the message, e.g. set an appropriate interval between the moments when successive prints are triggered.
- Press  to delete a single message or  to delete all messages.

The printer goes out of the warning state.



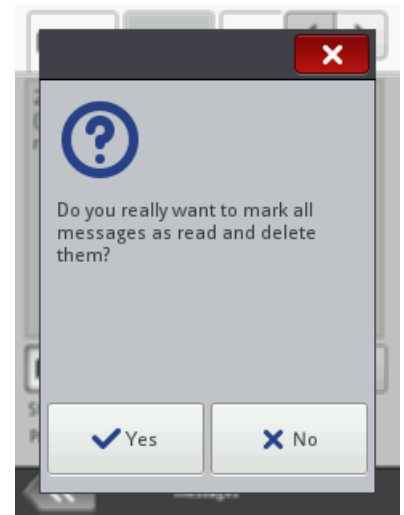
 Message deleting is not available to **operator**-type users.

9.1.3. INFORMATIONAL MESSAGES

Informational messages (see drawing) are displayed in the dialog box when the necessity to inform the user of the existent situation arises or when the user is expected to decide on further actions.

Printing may be turned on/continue.

The printer does not change its status.



The handling of an informational message depends on whether the occurrence of the message involves the necessity for the user to decide on further actions or not.

If an informational message is displayed to inform the user of the existent situation:

- View the contents of the message.
- Press to acknowledge the message or to display more details about the message.

If an informational message is displayed to prompt the user to make a decision on further actions:

- View the contents of the message.
- Make a decision on further actions by pressing the relevant button, e.g. or .
- The printer carries out an appropriate operation, e.g. restarts itself.

9.2. DIAGNOSTIC

9.2.1. PRELIMINARY CHECKS

Before you proceed to locate a faulty component, it is advisable to conduct preliminary checks such as:

- Visual inspection, to detect problems such as dirty parts, ink leaks, or damaged/disconnected cables/tubes,
- Verification of messages, information about the printer, consumables and settings, which can help identify the source of the problem.

9.2.1.1. VISUAL INSPECTION

Part to be checked	Potential problems
Printer (control unit and printhead).	<ul style="list-style-type: none"> - Dirty nozzle plate. - Ink system valve is set at the TRANSPORT position during printing. - Ink leaks from the printhead. - Waste bottle overflow. - No ink bottle. - Ink bottle is not screwed in completely. - Damaged LCD.
Cabling/accessories.	<ul style="list-style-type: none"> - Damaged/detached cables. - Power cord detached from mains electricity or from control unit. - Dirty photodetector. - Connector of external photodetector, encoder is detached.
Others.	<ul style="list-style-type: none"> - Objects to be labeled are beyond the reach of the photodetector selected as the source of the trigger signal. - Space between successive objects on the conveyor belt is too small. - Unsteady contact between the encoder roll or guide wheel and the conveyor belt. - Objects to be labeled move in front of the print-head face from a wrong side (from the slide side).

9.2.1.2. VERIFICATION OF MESSAGES, INFORMATION AND SETTINGS

To facilitate diagnostic, verify the following:



Project and project parameters editing as well as general settings editing are not available to operator-type users.

- Contents of the project that is open for printing/being printed.
You can start editing the project that is open for printing/being printed by pressing ► **Project**.
- Parameters of the project that is open for printing/being printed.
You can start modifying parameters of the project open for printing/being printed by pressing ► **Parameters**.
- The printer's general settings.
You can start editing the printer's general settings by pressing ► ► ► .
- Messages.
The list of messages can be displayed by pressing ► or / / on status bar **A** (see [Fig. 41 on page 49](#)).
- Information about consumables.
Access to information about consumables can be gained by pressing the icon on status bar **A**.

9.2.2. PROBLEM SOLVING DIAGRAM

The problem solving diagram contains a list of potential irregularities and a list of recommended actions that should be taken after a given irregularity has occurred.

Before you proceed with further diagnostic, it is necessary that preliminary checks be made.



For more details see "9.2.1. Preliminary Checks".



Then, identify the irregularities on the list and take the actions that are given in the following diagram.

After solving the problem, acknowledge the message displayed.

If you have not managed to solve the problem by yourself, contact an authorized representative of EBS Ink Jet Systeme GmbH.



 Some of the settings listed below are not available to **operator**-type users.

Irregularity	Recommended action
The printer does not start. The LCD display is blank.	<ul style="list-style-type: none"> - Check the power cord and whether it is connected to mains electricity and the control unit or not. - Check mains voltage.
Touch screen is not working.	<ul style="list-style-type: none"> - Contact an authorized representative of EBS Ink Jet Systeme GmbH.
System time or date are incorrect.	<ul style="list-style-type: none"> - Set the correct date and time in the printer.
Printing cannot start.	<ul style="list-style-type: none"> - Wait until the printer is ready to print. - Open a correct project to print.
Existing project is not shown in the project list.	<ul style="list-style-type: none"> - Make sure that no filter is active in the project library.
Incorrect project contents.	<ul style="list-style-type: none"> - Review and correct project contents.
Uneven print resolution in a horizontal direction when printing is timed by the printer's internal generator, <i>i.e.</i> the project parameter  ► Impulse generator source = Internal generator.	<p>Conveyor belt travel speed is not steady.</p> <ul style="list-style-type: none"> - Apply an encoder. - Change the timing source to encoder, <i>i.e.</i> the project parameter  ► Impulse generator source = External source.

Irregularity

No proportional square, circle or 2D code can be obtained.


Euro-pallets are incorrectly labeled in an application where one photodetector is used.

Prints are too pale or too bold.



Blurred prints.

Recommended action



The setting of print resolution in a horizontal direction does not equal print resolution in the vertical direction.

- Set the project parameter  ► **Resolution** at 7086 dots/m.

Conveyor belt parameters are incorrectly set.

- Set the parameter **Conveyor speed** at the value equal the conveyor belt's real speed (if the project parameter  ► **Impulse generator source = Internal generator**)
- Set the parameter **Encoder constant** at the value equal the encoder's real data (if the project parameter  ► **Impulse generator source = External source**)

- Apply a combination of two photodetectors, where the second photodetector is used for synchronizing printouts with Euro-pallets.

- Adjust print legibility to the type of surface by setting the project parameter  ► **Dot size**.
- If the need for changing intensity of a print occurs, apply **Intensifier**-type objects  to the project.

Objects move in front of the printhead face from a wrong side. An object and the slide are in contact and smudge the ink.

- Select the type of slide for objects to be labeled.
- Change the direction in which objects move in front of the printhead face.

Irregularity	Recommended action
<p>Print quality is unsatisfactory. Irregular print distortions or fading.</p>	<p>Dirty nozzle plate in the printhead/Unvented printhead.</p> <ul style="list-style-type: none"> - Check whether the printer is adequately leveled or not. If it is not, adjust the printer position. - Check whether the ink-system valve is in the PRINTING position or not while the printer is printing. If it is not, set it at that position. - Carry out the short purging/venting procedure for the printhead once or several times. - Carry out the long purging/venting procedure for the printhead: - Assess how dirty the air filter is and replace it with a new one, if need be. - Carry out the nozzle plate cleaning procedure using a cleaner. - Contact an authorized representative of EBS Ink Jet Systeme GmbH.
<p>Leakages of ink from the drip rail during purging procedures.</p>	<ul style="list-style-type: none"> - Check what the amount of waste in the waste bottle is and empty the bottle, if need be. - Carry out the drip rail cleaning procedure.
<p>Prints are incorrectly positioned on objects.</p>	<ul style="list-style-type: none"> - Review and correct project parameters and the printer's general settings.
<p>Irregular splashes of ink around prints.</p>	<ul style="list-style-type: none"> - Reduce the distance between the printhead and objects to be labeled; the maximum distance between objects to be labeled and the printhead face is 4 mm (about 0.16 in.).
<p>Empty ink bottle.</p>	<ul style="list-style-type: none"> - Replace the ink bottle.

Irregularity	Recommended action
No prints although no error is signaled.	<ul style="list-style-type: none"> - Review and correct the contents of the project that is open for printing. - Check whether the photodetector selected as the source of the trigger signal is clean or not. - Check whether the objects to be labeled are within the reach of the photodetector selected as the source of the trigger signal. - Check the photodetector setup. - Check the printing parameters that relate to print triggering. - Make a test print.
Some prints are skipped.	<ul style="list-style-type: none"> - Reduce printing speed. - Increase the space between objects to be labeled.
Ethernet is not working.	<ul style="list-style-type: none"> - Detach the printer from mains electricity and connect it again.
Ink bottle or IMS (Ink Monitoring System) errors.	<ul style="list-style-type: none"> - Replace the ink bottle with a correct one. - Contact an authorized representative of EBS Ink Jet Systeme GmbH to enter service mode (in which printing can continue for a period of 50 hours).

9.3. SERVICING

9.3.1. CLEANING THE NOZZLE PLATE



The nozzle plate can be cleaned by instructed persons.



Tools required:

- a sprayer with wash-up (Part No. XS21602),
- a cleaner supplied by EBS Ink Jet Systeme GmbH,
- a cross head screwdriver,
- protective gloves that are resistant to ink/wash-up,
- safety goggles.




The nozzle plate in the printhead is cleaned to remove dry ink residues and dirt, which may be the reason for impaired print quality.

It is advisable to carry out the nozzle plate cleaning procedure if purging/venting has not improved print quality.



For more details about printhead purging/venting see **"8.1. Purging/Venting the Printhead"**.

To clean the nozzle plate:

1. If the printer is printing, pause printing using the icon  on menu bar **C** (see **Fig. 43** on page **52**) on the main screen.
2. Use the cross head screwdriver to loosen two screws **5d** (see **Fig. 65**) that fasten slide **5** to printhead **2**.

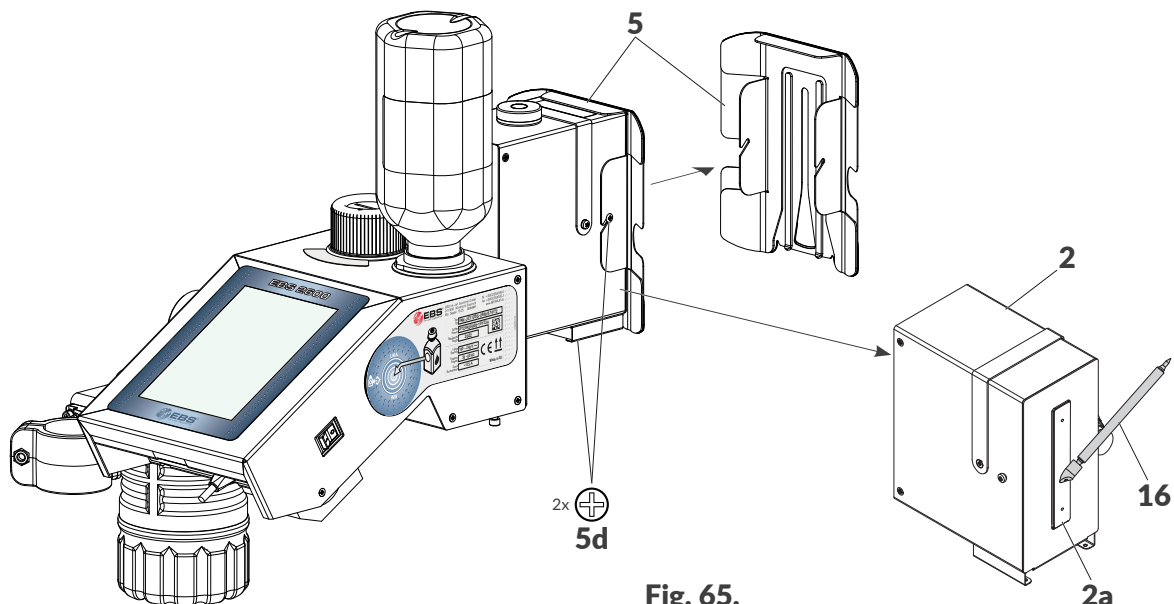


Fig. 65.

3. Remove slide **5** to gain access to nozzle plate **2a**.
4. Use the sprayer to spray wash-up over nozzle plate **2a**.
5. Clean nozzle plate **2a** gently using cleaner **16** supplied by EBS Ink Jet Systeme GmbH.

Nozzle plate **2a** must be cleaned with cleaner **16** from top to bottom.

The contact of cleaner **16** with nozzle plate **2a** must be reduced to an absolute minimum in

order to minimize the risk of damage to that nozzle plate **2a**.




NOTE: The nozzle plate is at risk of getting damaged!

No tools different from the cleaner supplied by **EBS Ink Jet Systeme GmbH** must be used to clean the nozzle plate as otherwise the plate and the nozzles may get damaged.

The foam cleaner must be thrown away after use. The cleaner handle can be used many times.

The nozzle plate must not be cleaned if it is not sprayed with wash-up beforehand.

6. Re-install slide **5**. Use the cross head screwdriver to tighten two screws **5d** to fasten slide **5** to printhead **2**.
7. Press the icon  on menu bar **C** to resume printing.
8. Assess print quality.

If print quality does not improve sufficiently although procedures for purging/venting the print-head have been carried out and the nozzle plate has been cleaned, contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

9.3.2. CLEANING THE DRIP RAIL AND INK FILTER



The drip rail and ink filter shall be cleaned by *instructed persons*.



Tools required:

- a sprayer with wash-up (Part No. **XS21602**),
- protective gloves that are resistant to ink/wash-up,
- safety goggles,
- absorbent material or a metal vessel for collecting waste,
- paper towels or other material to clean the drip rail,
- a cross head screwdriver.



The drip rail should be cleaned when:

- Impurities have accumulated in the rail, e.g. in the form of a mixture of ink and Euro-pallet shavings),
- Ink flows out of the rail while purging/venting procedures (even short ones) are carried out.

To clean the drip rail and ink filter:

1. Shut the printer down in regular mode.



For more details see **"4.2.1. Shutting down in Regular Mode"**.

2. Put absorbent material under drip rail **3b** (see **Fig. 66 on page 171**).

- Use the cross head screwdriver to remove screw **3h** that fastens drip rail **3b** to printhead **2**.

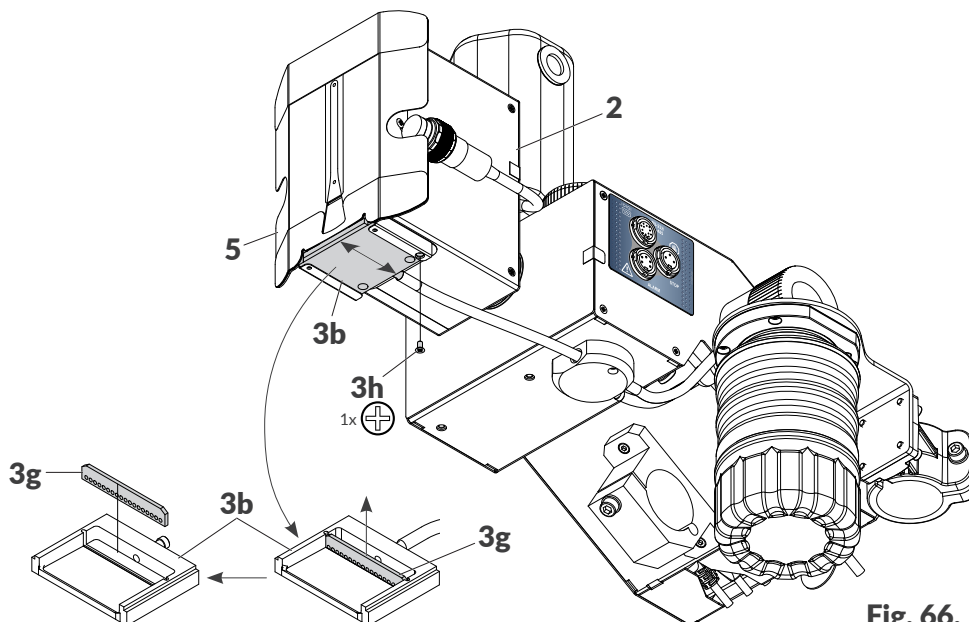


Fig. 66.

- Pull drip rail **3b** out of the guides towards the back of the printer.



Should the removal of drip rail **3b** be difficult, it is advisable to loosen or completely remove slide **5**.

- Remove ink filter **3g** from drip rail **3b**, pulling it out of the rail guides upward.
- Use a paper towel or other material to thoroughly clean drip rail **3b** and ink filter **3g**.
- Use the sprayer to spray wash-up over drip rail **3b** and ink filter **3g** and then remove the remaining impurities.



When drip rail **3b** is removed, it is advisable to clean the ink remnants from the bottoms of printhead **2** and guides.

- Fasten ink filter **3g** to drip rail **3b**.



NOTE: The ink filter must be installed correctly!
Ink filter **3g** is a directional element. It must be installed in drip rail **3b** in such a way that the holes are on the bottom surface of the rail (see Fig. 66).

- Push drip rail **3b** (together with filter **3g**) into the guides on the bottom side of printhead **2**.



NOTE: The drip rail must be installed correctly!
While installing drip rail **3b** make sure that:
- It runs parallel to the guides,
- It evenly extends about 2 mm beyond the printhead edge.

- Use the cross head screwdriver to tighten screw **3h** to fasten drip rail **3b** to printhead **2**.
- Start the printer up.



For more details about printer startup see [“4.1. Starting the Printer up”](#).

9.3.3. RELEASING PROTECTIONS

By releasing printer protections with a one-off unlock code, **OTP** (One Time Password), and a one-off activation code, **OTA** (One Time Answer), you can carry out basic service operations without serviceman intervention.

Owing to this function the printer enters service mode (to continue printing for a period of **50 hours**),



To obtain a one-off activation code (**OTA**) contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

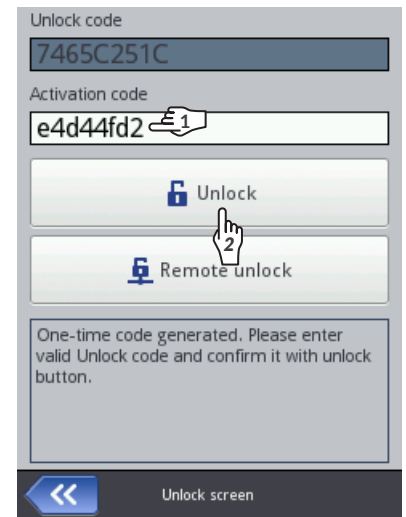
To release the selected protection:

1. Press ► ► .

The protection release screen is displayed, together with an automatically generated one-off unlock code **OTP (Unlock code)**.



NOTE: The risk that the OTP code becomes invalid!
Do not exit the protection release screen while this procedure is carried out as otherwise the **OTP** code becomes invalid. If the protection release screen is displayed again, a new **OTP** code is generated.





2. Contact an authorized representative of **EBS Ink Jet Systeme GmbH**, and then:
 - Give the one-off unlock code **OTP**.
 - Describe the operation you wish to carry out (e.g. entering service mode to continue printing for a period of **50 hours**).
 - The authorized representative of **EBS Ink Jet Systeme GmbH** generates a one-off activation code (**OTA**).
 3. Enter the **OTA (Activation code)** code you have obtained.
 4. Press .
- The selected protection is released.

If the **Hi-Res** EBS-2600 printer is linked into an **Ethernet** network, the selected protection can be unlocked remotely without the need for giving the **OTP** and **OTA** codes. To release the protection press on the protection release screen. An authorized representative of **EBS Ink Jet Systeme GmbH** will release the protection remotely at his/her earliest convenience.

9.3.3.1. ENTERING SERVICE MODE

If a **correct** bottle of ink is installed but the printer cannot identify it correctly, printing cannot continue. In such a case, service mode can be entered and printing can continue over a period of 50 hours, until a new bottle of ink is installed or a service intervention is made.

The situation described above is signaled with the icons  and  displayed alternately on status bar **A** (see [Fig. 41 on page 49](#)).




For more details see [“4.5. Using an Ink Bottle”](#).

To enter service mode:

1. Follow the protection release procedure described in [“9.3.3. Releasing Protections”](#).
2. Contact an authorized representative of **EBS Ink Jet Systeme GmbH** and notify him /her that you want to enter service mode, that is, enable printing over a period of 50 hours.

When the above procedure finishes, the icon  is displayed on status bar **A** (see [Fig. 41 on page 49](#)).



If the printer is in service mode, the icon  is displayed each time it starts up. On pressing it, you can learn how much time has remained till service mode expires.

The signaling of the allotted time for printing is displayed until a new, correct bottle of ink is installed or until the allotted time for printing elapses (and then the error is signaled again).

9.3.4. RESTORING THE DEFAULT SETTINGS



The function is not available to **operator**-type users .

The procedure for restoring the default settings requires that a password be obtained.

To obtain the above-mentioned password, contact an authorized representative of **EBS Ink Jet Systeme GmbH**.

The function restores all settings of the printer to their default values.



NOTE: User data will be lost!

When the default settings are restored, all projects, printer settings, user databases, statistics and imported files such as images, text files, scripts or user fonts are deleted.


It is advisable to copy all projects to a **USB** memory device before the system recovery procedure is followed. For more details see **"7.7.1. Exporting/Importing Projects"**.

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

To restore the default settings:

1. Press     .

The virtual keyboard is displayed and should be used to enter the password obtained from an authorized representative of **EBS Ink Jet Systeme GmbH**.

2. Enter a password.
3. Press  to acknowledge.

The following message is displayed.

Do you want to ERASE ALL internal memory contents and restore the default settings? All projects data and printer settings WILL BE LOST !

4. Press to continue restoring the default settings.

The printer's default settings are restored, and that fact is acknowledged by the message:

Internal storage contents successfully restored. Restart is required. Please press "OK", printer will be restarted.

5. Press to restart the printer.

The printer starts up again.

The default settings restoration procedure is completed.

If all projects are copied to a **USB** memory device before the default settings restoration procedure starts, you can restore these projects following the description given in **"7.7.1. Exporting/Importing Projects"**.

CHAPTER 10

TECHNICAL SPECIFICATIONS

10. TECHNICAL SPECIFICATIONS

Physical properties

Weight	Complete printer (control unit with printhead) and 0.5 l bottle:
	- about 4.8 kg (10.6 lbs)
	Bottle of ink:
	- 0.25-liter bottle: about 0.25 kg (0.55 lbs)
	- 0.5-liter bottle: about 0.5 kg (1.10 lbs)
	Installation kit (beams, holders):
	- about 2.5 kg (5.51 lbs)

Dimensions (printer: control unit with printhead and bottle of ink)

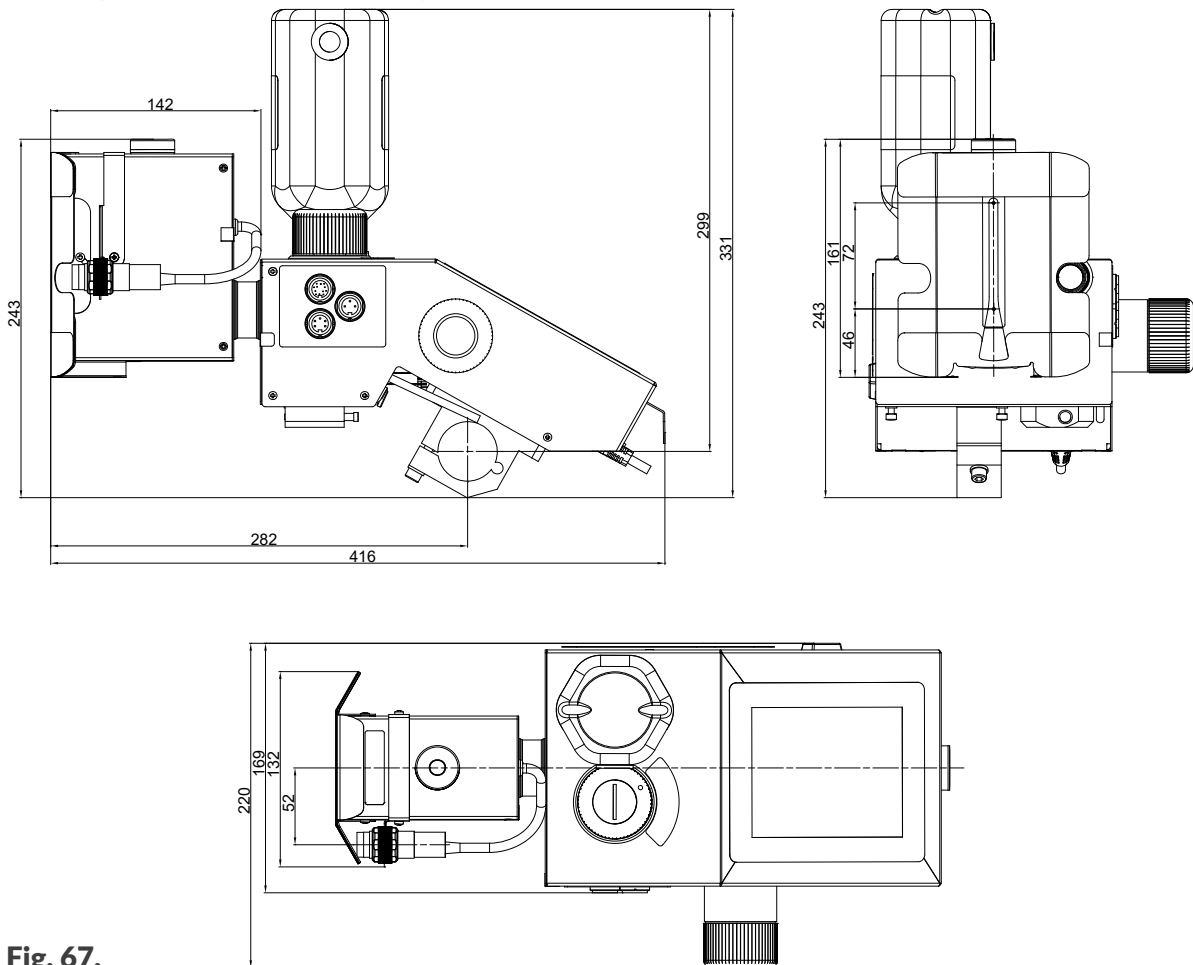


Fig. 67.

Dimensions (0.25-liter or 0.5-liter bottle of ink)

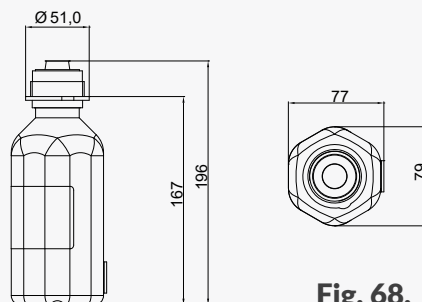


Fig. 68.

Dimensions (waste bottle)

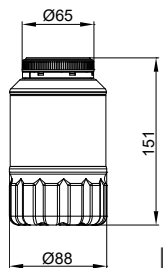


Fig. 69.

Dimensions (examples of Ø40 fastening elements)

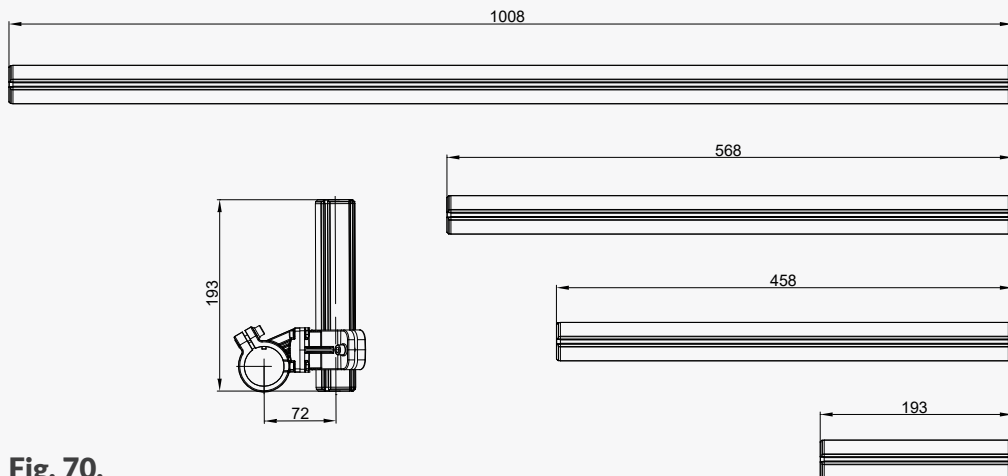


Fig. 70.

Material for housing - Stainless steel INOX 100%

Technical data

Project width	- Maximum width: 4000 pixels (vertical rows) , i.e.: about 56.5 cm / 22.24 in. (at 7086 dots/m in horizontal direction)
Maximum print height	- 71.8 mm (2.83 in.)
Resolution in vertical direction	- 180 dpi (dots per inch) / about 7086 dots/m
Maximum printing speed	- 60 m/min (at 7086 dots/m in horizontal direction and intensity of 1)
Print intensity range	- 10 levels - Homogeneous for whole printout or varying within printout (owing to the application of Intensifier -type objects I to project)
Printhead	- Number of printheads: 1 - Number of nozzles 510 - Ink drop volume: 32 pl/80 pl - Distance between nozzles: 141.1 µm (about 1/180 in.)
Ingress protection rating	- IP42
Max. noise level	- < 70 dBA

Connections

	<p>Control unit:</p> <ul style="list-style-type: none"> - USB; current efficiency 500 mA - Connector for external photodetector - Rotational speed sensor (encoder) input - Ethernet connector - RS-232/RS-485 connector - Status beacon output - Conveyor stoppage output
--	---

Functions

Control	<ul style="list-style-type: none"> - Built-in 5.7"/144.8 mm LCD with touch panel - EBS Web User Interface (WUI): to edit projects and control the printer remotely (online) via Ethernet (or direct connection to a PC) with any Web browser - Offline EBS Web User Interface (Offline WUI): a project editor for a PC with a Windows® operating system
Work modes	<ul style="list-style-type: none"> - Print triggering: <ul style="list-style-type: none"> print mode with trigger signal print mode with two photodetectors print mode without trigger signal - Automatic printing after startup - Synchronized starting/pausing printing for two-printer applications (recommended for labeling Euro-pallets)

Power supply

	<ul style="list-style-type: none"> - 100 to 240 V \sim, 50/60 Hz, max. 0.45 to 0.21 A - The power supply circuit of the printer shall be secured with a cut-out device whose rated current is: <ul style="list-style-type: none"> max. 16 A at 230 V \sim or max. 20 A at 110 V \sim - The printer is designed to be supplied from a TN-type supply system
Connection to the mains	<ul style="list-style-type: none"> - Pluggable equipment type A
Power cord	<ul style="list-style-type: none"> - Length: 150 cm (59.1 inch); depends on a given country - Plug: depends on a given country - Type: portable power cord
Overvoltage category	<ul style="list-style-type: none"> - II
Electric shock protection class	<ul style="list-style-type: none"> - I (the printer must be connected to a ground pin socket)

Inks	
Type	- Oil-based
Color	- Black
Ink bottle capacity	- 0.25 liter (starter bottle) - 0.5 liter
Ink consumption	- up to 0.5 million prints – at 500x500 dots, 10% filling to 0.5 liter of ink
Waste bottle capacity	- 0.5 liter

Working conditions

Working position of the printer	- Horizontal
Distance from printhead to object	- max. 4 mm (max. 0.16 in.)
Minimum distance between objects to be labeled	- 50 mm (1.97 in.)
Print triggering	- Photodetector (internal and/or external) - No triggering
Timing	- Internal Generator - Rotational speed sensor (encoder)
Ambient conditions	- Working temperature: +5 to +40°C (+41 to +104°F) - Relative humidity: 10 to 85% without condensation - Maximum altitude (above sea level): 2000 m - Vibration: max. 1 g, max. 10 Hz - Shocks: max. 1 g, max. 2 ms - Operation in tropical climates: no - Pollution degree (PD): 2
Storage conditions	- Temperature: 0 to +50°C (+41 to +122°F) - Relative humidity: 10 to 90% without condensation - Shocks: max. 1 g, max. 2 ms - Position: horizontal

Working environment - electromagnetic compatibility

The **Hi-Res** EBS-2600 printer is a class **A** device as defined by **EN 55022:2010** (an industrial environment). It can cause radio interference in a residential environment and in such cases, appropriate remedial measures can be demanded from its users.

Specifications

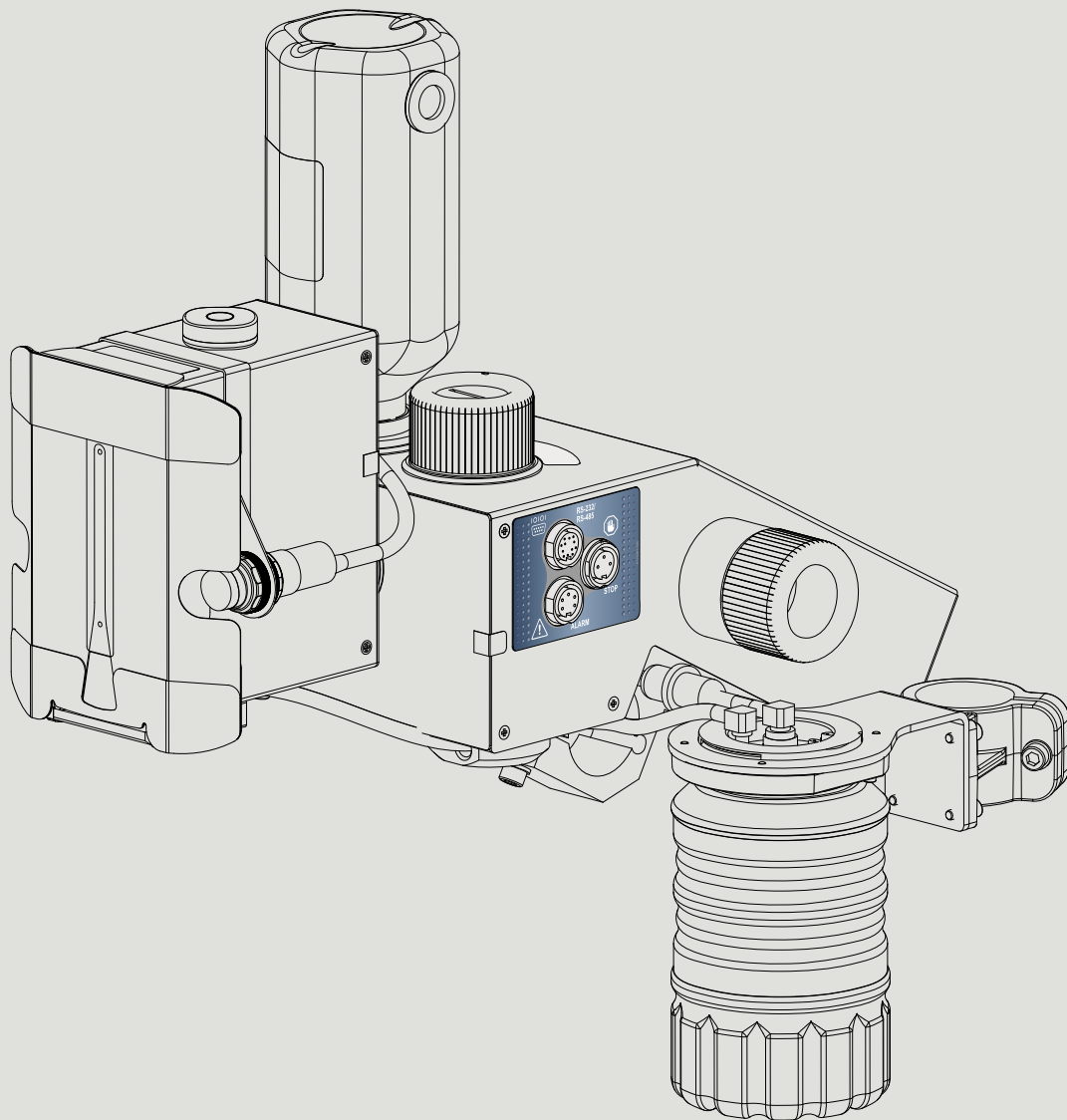
Objects	<p>Object are available when processed by both the printer's LCD and EBS Web User Interface:</p> <ul style="list-style-type: none"> - Text objects: Normal text, Date/Time, Counter, Communications port, Text file - Shapes: Line, Rectangle, Ellipse - Other objects: Barcode, Image, Line divider, Spacer, Intensifier <p>Object are available only when processed by EBS Web User Interface:</p> <ul style="list-style-type: none"> - Codes: Date/Time, Counter, Communications port, Text file
Fonts	<ul style="list-style-type: none"> - Types of fonts: matrix, TrueType - Additional TrueType fonts in *.ttf format or matrix fonts in *.xml format can be installed
Bar/matrix codes	<ul style="list-style-type: none"> - 1D codes: EAN-13, EAN-8, EAN-8 + EAN-2, EAN-8 + EAN-5, EAN-13 + EAN-2, EAN-13 + EAN-5, Code25 Industrial, Code 25 Interleaved, GS1-128 (UCC/EAN-128), Code 128, ITF-14, EAN-2, EAN-5, EAN-5 + EAN-2, Code 11, Code 25 IATA, Code 25 Data Logic, Code 39, Code 39 Extended, Codabar, Leitcode, Identcode, Code 16k, Code 93, GS1 DataBar-14, GS1 DataBar Limited, GS1 DataBar Expanded, Telepen Alpha, UPC-A, UPC-E, PostNet, MSI Plessey, Pharmacode One-Track, Pharmacode Two-Track, PZN, Australia Post 4-State, Royal Mail 4-State (RM4SCC) - 2D codes: 2D:Data Matrix, 2D:PDF417, 2D:PDF417 Truncated, 2D:QR Code, 2D:MicroPDF417
Graphics	<ul style="list-style-type: none"> - Graphics files in *.png format can be imported
Scripts	<ul style="list-style-type: none"> - Scripts in *.php format can be imported
Import/export via USB port	<ul style="list-style-type: none"> - Projects
User files	<ul style="list-style-type: none"> - Fonts (font manager in EBS Web User Interface) - Images (image manager in EBS Web User Interface) - Text files (text file manager in EBS Web User Interface) - Scripts (script manager in EBS Web User Interface)

CHAPTER 11

VERSION CONTROL

11. VERSION CONTROL

Version of manual	Date of issue	System version
2020/01/09#1.1EN	2020.01.09	1.02.45
G2023/04/26_1EN	2023.05.16	1.03.21


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