# **Hi-Res** EBS-2600
# SAFETY
# AND IMPORTANT
# INFORMATION

## Industrial **DROP-ON-DEMAND Printers**

2023.05.25
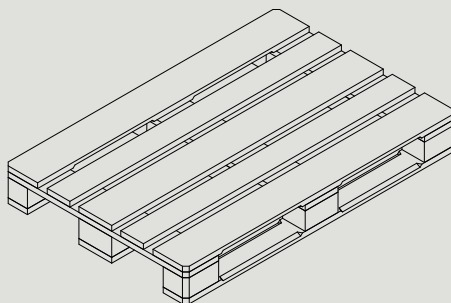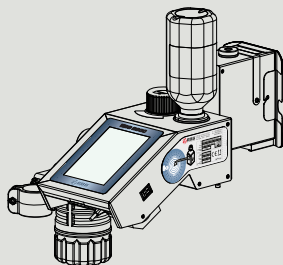
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# Safety and Important Information

(Original instructions)

⚠️ Before using the **Hi-Res** EBS-2600 printer, please read carefully the documentation that accompanies the printer as well as the data sheets for the consumables (**MSDS**) that have been or will be used.

This information brochure should be easily accessible and ready to use whenever the need to do so arises over the printer's entire service life.

The product delivered to you corresponds to your specific order, and it may happen that the options and functionality of your printing system differ from some descriptions or illustrations. As we need to keep pace with new technological advancement and wish to meet individual requirements of our clients, we reserve the right to introduce changes in the design and construction as and when necessary. Therefore, no claims can be made regarding differences in data, illustrations or descriptions contained in the accompanying documentation. Should your printer be equipped with options or software that are not illustrated or described in the accompanying documentation or should you have additional queries after having read the documentation, please contact any authorized representative of **EBS Ink Jet Systeme GmbH** for more information.

These instructions 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.

The printer is accompanied by the following documentation:
- **User Manual**\*: it contains a description of the printer, the information on how to switch it on and off, start/pause printing, prepare a project for printing, set printing parameters, perform basic maintenance and fix problems, as well as the printer's technical data; the document is available in **PDF** format on a **USB** flash drive attached to the printer and also on the Web,
- **Basic User Manual**\*: it contains a basic description of the printer, the information on how to switch the printer on and off, start/pause printing, open a project for printing, perform basic maintenance and replace an ink bottle; the document is available in **PDF** format on a **USB** flash drive attached to the printer and also on the Web,
- **Safety and Important Information**: it contains any information that is necessary for safe installation, operation, transport and storage of the printer; the document is available in a printed paper copy supplied with the printer and in **PDF** format on a **USB** flash drive attached to the printer and also on the Web.

ℹ️ \* - the availability of language versions of the selected documentation and the method of its delivery with the device may vary depending on the country.

## DEFINITIONS

**Ordinary person**: any worker (different from an **instructed person**) who can operate the printer, have access to the printer or be near the printer.

**Instructed person**: a worker who has been instructed and trained by **a skilled person** or is supervised by **a skilled person**.

**Skilled person**: a member of the manufacturer's authorized service staff, who has specialist knowledge and experience in operating, maintaining and servicing printers.

## INTENDED USE OF THE PRINTER

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 the immovable printhead.

**Any other application of the printer is forbidden.** The user shall be responsible for any consequences of an undesigned application.

## RESPONSIBILITY

**EBS Ink Jet Systeme GmbH** shall not be liable for damage or personal injury that might occur during installation, operation or servicing of the **EBS Ink Jet Systeme GmbH** printers due to the failure to follow safety provisions as well as the industry-wide good manufacturing practices and safety standards.

**EBS Ink Jet Systeme GmbH** shall not be liable for any failure or damage caused by printer modifications or the application of the printer to purposes other than those for which it is intended. The user shall be responsible for taking any safety measures that are required each time the **EBS Ink Jet Systeme GmbH** printers are used.

The **EBS Ink Jet Systeme GmbH** consumables, spare parts, accessories and cabling, hereinafter referred to as components, are designed for operation with the **EBS Ink Jet Systeme GmbH** printers and they are tested together with these printers according to the relevant regulations and safety standards.

The application of components that are not manufactured by **EBS Ink Jet Systeme GmbH** or are not recommended by the firm for use in a particular printer may be inconsistent with the testing conditions and may affect the printer's compliance with certain standards. The use of such components may impair specified printer parameters, properties or performance, cause incorrect printer operation or lead to printer damage, and it will void any warranty claims.

Every user who modifies or repairs the **EBS Ink Jet Systeme GmbH** printers using components different than those supplied by **EBS Ink Jet Systeme GmbH** or whose specifications vary from **EBS Ink Jet Systeme GmbH** specifications, shall be aware that they do this on their own responsibility and therefore shall not be entitled to make claims under the terms and conditions of warranty.

This printer comes with the EU Declaration of Conformity which authorizes the manufacturer to mark the product with the marking

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## EC DECLARATION OF CONFORMITY

The full text of the EC Declaration of Conformity is available at the client's request from **EBS Ink Jet Systeme GmbH**'s authorized representatives.

## SAFETY RULES

**This equipment is not suitable for use in locations where children are likely to be present.**

The printer should be operated by **instructed persons**.

It is recommended that the printer be supervised during operation.

**An ordinary person** can only perform basic operations such as:
* starting the printer up/shutting the printer down,
* opening a project for printing,
* enabling/pausing printing,
* replacing the ink bottle,
* emptying the waste bottle.

However, any maintenance operations, including:
* purging/venting the printhead,
* replacing the air filter,

basic service operations such as:
* cleaning the nozzle plate,
* cleaning the drip rail and ink filter,

and also:
* basic installation operations in compliance with **The User Manual**,
* moving the printer into another place (internal transportation)

should be carried out by **instructed persons**.

Any service operations, including:
* advanced installation and removal of the printer,
* preparing the printer for storing over 1 week,
* preparing the printer for transporting outside the premises,
* operations requiring any printer guard or cover to be removed

can be carried out by **skilled persons** only.

No efforts have been spared to design the printer diligently so that its operation is safe and reliable. However, the knowledge and observance of a few safety rules and precautions are the prerequisite for safe use of the printer.

- Do not print on objects whose temperature exceeds **100°C** (**212°F**) at the time of labeling.
- <u>Never</u> direct the printhead outlet towards persons or animals. Do not do that even if the printer is shut down.
- Wear protective clothing, gloves that are resistant to wash-up/ink, and goggles to carry out any operations in the drip system and printhead.
- While installing an ink bottle or replacing the ink bottle and emptying the waste bottle be careful not to get splashed and not to dirty the printer or surroundings.
- Do not use plastic vessels for washing. Metal vessels or other vessels that do not collect electric charges are recommended.
- If you need to disconnect the supply voltage, detach the power cord from the mains or from the control unit.
- Do not use the printer if it is not fully operational.

## HEALTH / HYGIENE / ENVIRONMENT

### IN CASE OF ACCIDENT

When ink spills, wipe the spilled liquid with absorbent material and dispose of it following the fire and health and safety at work regulations.

Take the splashed clothes off as soon as possible.

If eyes or skin get irritated:
- **EYES** rinse with running water until the product is removed; contact an ophthalmologist,
- **SKIN** wash with water and pH-neutral soap.

When swallowed, do not induce vomiting, contact a physician.

When inhaled, make sure that the sufferer has access to fresh air.

## HAZARDS IN THE WORKPLACE

Certain consumables require that contact lenses should not be worn.

While cleaning with wash-up, it is advisable to wear wash-up-resistant gloves and safety goggles.

*All chemicals - including inks - can be dangerous and therefore shall be handled with care.*

Maximum noise level emitted by the printer **< 70 dBA**.

## FIRE PREVENTION

*Follow strictly the instructions that are given in the data sheet (**MSDS**) for every type of ink and wash-up.*

The **Hi-Res** EBS-2600 printer prints with non-flammable inks whose physical and chemical properties are available in the relevant material safety data sheets (**MSDS**).

It is recommended that a fire extinguisher designed for electrical fires is put near the printer.

Do not print in the areas where an explosion hazard exists.

Do not leave ink or wash-up in open containers.

Before coming near the printer, touch a grounded metal object to dissipate the electric charge that could potentially have collected on your body.

Ensure good ventilation in the area where the printer is installed and where consumables are stored.

## RECYCLING

The waste consumables must be managed in compliance with the local waste management and hazardous materials transportation regulations.

## WORKING ENVIRONMENT

| | |
|---|---|
| Operating temperature | **+5 to +40°C (+41 to +104°F)** |
| Humidity | **10 to 85% RH with no condensation** |
| Maximum altitude (above sea level) | **2000 m (6561 ft)** |
| Pollution degree (PD) | **2** |

The use of certain inks may limit the temperature and humidity ranges (see the data sheet for a given ink).

## EUROPEAN RADIO EQUIPMENT DIRECTIVE (RED NO. 2014/53/EC) COMPLIANCE STATEMENT

Working frequency of the **IMS** (Ink Monitoring System) is **13.56 MHz**.

The magnetic field strength at 10 m distance from the **IMS** is **max. -53.7 dBµA/m.**

## HANDLING

The printer should be handled (transported internally) by **instructed persons**.

| | |
|---|---|
| Total weight of the printer with a **0.5 l (16.91 fl oz)** bottle of ink | **≈ 7.3 kg (16.1 lbs)** |

Weight of printer components*:

| | |
|---|---|
| Control unit with the printhead and a **0.5 l (16.91 fl oz)** bottle of ink | **≈ 4.8 kg (10.6 lbs)** |
| Installation kit (beams, holders) | **≈ 2.5 kg (5.51 lbs)** |

| Bottle of ink, with a capacity of: | |
|---|---|
| 0.25 l **(8.45 fl oz)** | **≈ 0.25 kg (0.55 lbs)** |
| 0.5 l **(16.91 fl oz)** | **≈ 0.5 kg (1.10 lbs)** |

*Without options and cabling.

The printer can be transported **in a horizontal position only**. The ink system valve must be set at the **TRANSPORT** position. Be careful not to damage the nozzle plate, control unit screen or cables during transport. It is advisable to secure the nozzle plate with a sealing cover.

The printer should be prepared for transporting outside the premises by **skilled persons** only.

## INSTALLATION

The basic installation and relocation of the printer can only be done by an **instructed person** who shall follow the recommendations given in **The User Manual**.

Advanced installation (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.

## WORKPLACE

⚠️ *Before use, the printer should be installed on a belt conveyor or another object that is firmly fixed to the floor, wall or another stable part of the structure with dedicated fixing elements. Dedicated racks can also be used.*

The printer must be installed indoors, in a ventilated location, away from any source of heat or flames.

The control unit with the printhead and a photodetector (photodetectors) should be placed where objects can be labeled conveniently; the printer should be put in a place that is free from vibration, shocks, excessive dust, dirt and aggressive or easily flammable vapors and gases.

Objects to be labeled must move in front of the printhead face from the slide and photodetector side.

The printer can be installed **in a horizontal position only**. Use the level that is installed on the printhead to level the printer.

The lighting in the area where the printer is installed should conform to local regulations.

The printer installation on the production line must not generate any risks for staff.

The area that surrounds the printer should be large enough to ensure that the operators as well as the maintenance and service staff can do their jobs.

For detailed information about installation see The **User Manual**.

The drawing below shows an example of how to install the printer on a belt conveyor.
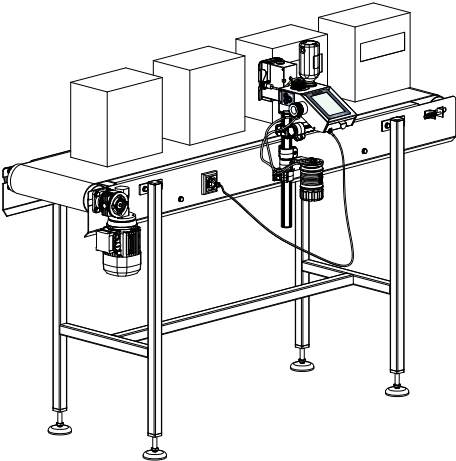


## CABLING

Clamps, clips or holders are recommended for fastening running cables.

The printer should not be installed where the cables (including the power cord) may be subject to mechanical stresses. The cables must be secured against any damage. They must not dangle or lay on the floor.

## POWER SUPPLY

**The printer is not equipped with a disconnecting device (power switch) and as such it must be plugged into a power outlet which is close to it and which is easily accessible.**

The printer shall be energized from a source whose nominal voltage falls into the range given on the printer nameplate. If in doubt, contact the **EBS Ink Jet Systeme GmbH** service department.

| | |
|---|---|
| Supply voltage | **100 to 240 VAC, 50/60 Hz** |

| Maximum current consumption | 0.45 to 0.21 A |
| --- | --- |
| Overvoltage category (OVC) | II |
| Electric shock protection class | I |

The product is intended for use with **TN** power distribution systems.

The power supply circuit of the printer must be secured with a cut-out device, whose rated current is:
- max. **13 A** for **Great Britain and Ireland**
- max. **16 A** for **the EU countries**
- max. **20 A** for **the USA and Canada**,
- for the other countries - in compliance with the applicable regulations.

The printer comes with a grounded power cord. The grounding is used for ensuring safety. **The power cord must be connected to a grounded power outlet**. Efficiency of grounding shall meet the applicable standards.

The type of plug that is part of a detachable power cord must be selected according to the type of sockets used in a given country.

Any use of extension cords is inadvisable. The use of extension cables that are not equipped with a protective wire is forbidden.

The electrical installations upstream of the printer must comply with applicable regulations.

## IT POWER DISTRIBUTION SYSTEMS

This printer has been designed for connection to an IT power distribution system.

## INTERFACES

### Ethernet

Cables used for connecting the printer to an **Ethernet** network shall be:
- unshielded,
- in conformity with the **Ethernet** requirements,
- CAT 5, as a minimum,
- not more than **100 m** (**328.08 ft**) in length.

The **Ethernet** interface cable connected to the printer must not run outside the building. It must be connected to the network infrastructure inside the building.

The **Ethernet** cable can be connected to the printer only when the control unit is detached from the mains.

### RS-232/RS-485

Cables used for **RS-232/RS-485** communications should be:
- shielded,
- in conformity with the **RS-232/RS-485** requirements,
- not more than **15 m (49.21 ft)** in length.

## LOCAL INSTALLATION REQUIREMENTS

### Requirements for the USA/Canada

The printer is not intended for use in server rooms.

### Statements for China

The printer **is not designed** for operation at heights that exceed **2000 m** (**6561 ft**) above sea level.

仅适用于海拔2000米以下地区安全使用。

The printer **is not designed** for operation in tropical conditions.

仅适用于非热带气候条件下安全使用。

## STORAGE

Store the printer in a dry place.

| | |
|---|---|
| Consumables storage temperature | **0 to +50°C (+32 to +122°F)** optimal: **10 to +25°C (+50 to +77°F)** |
| Humidity | **10 to 90% RH with no condensation** |

The use of certain inks may limit the temperature range (see the data sheet for a given ink).

While storing consumables, the following should be avoided:
- direct exposure to sunlight,
- sources of heat, radiation and electrostatic charges.

The printer can be stored **in a horizontal position only**.

When shut down in regular mode, the printer can be stored over **1 week**. If the printer is operated in a heavily contaminated environment, it is advisable to apply a sealing cover to the nozzle plate each time the printer is idle.

With certain inks, the printer can be stored for a different period (see the date sheet for a given ink).

Only **skilled persons** can prepare the printer for storing over a period **longer than 1 week**.

## MAINTENANCE / FAULT FIXING

**Maintenance** operations should be performed by **instructed persons**, who wear suitable personal protection equipment (protective clothing, goggles, protective gloves, etc.). Any maintenance operations that are not described in **The User Manual** can be performed exclusively by **skilled persons**.

Any **service** operations that require that protective covers of the printer be opened or removed should be performed exclusively by **skilled persons**.
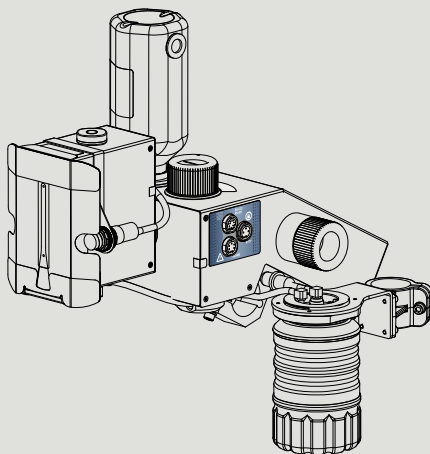
Disconnect the printer from the power source before commencing any intervention that involves the removal or replacement of a part. Appropriate tools should be used only.

If the nozzle plate needs cleaning, use appropriate wash-up supplied by **EBS Ink Jet Systeme GmbH**. 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 may get damaged. Contact with the nozzle plate should be limited to a minimum to avoid damage. Damage to the nozzle plate can reduce printhead efficiency.

The printer has a non-replaceable lithium battery. Such a battery is potentially explosive and may release hazardous chemicals. The control unit containing the board with the damaged battery can only be opened by **a skilled person**. The battery must not be crushed, punctured or thrown to a fire or to water to reduce the risk of fire or burns.

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