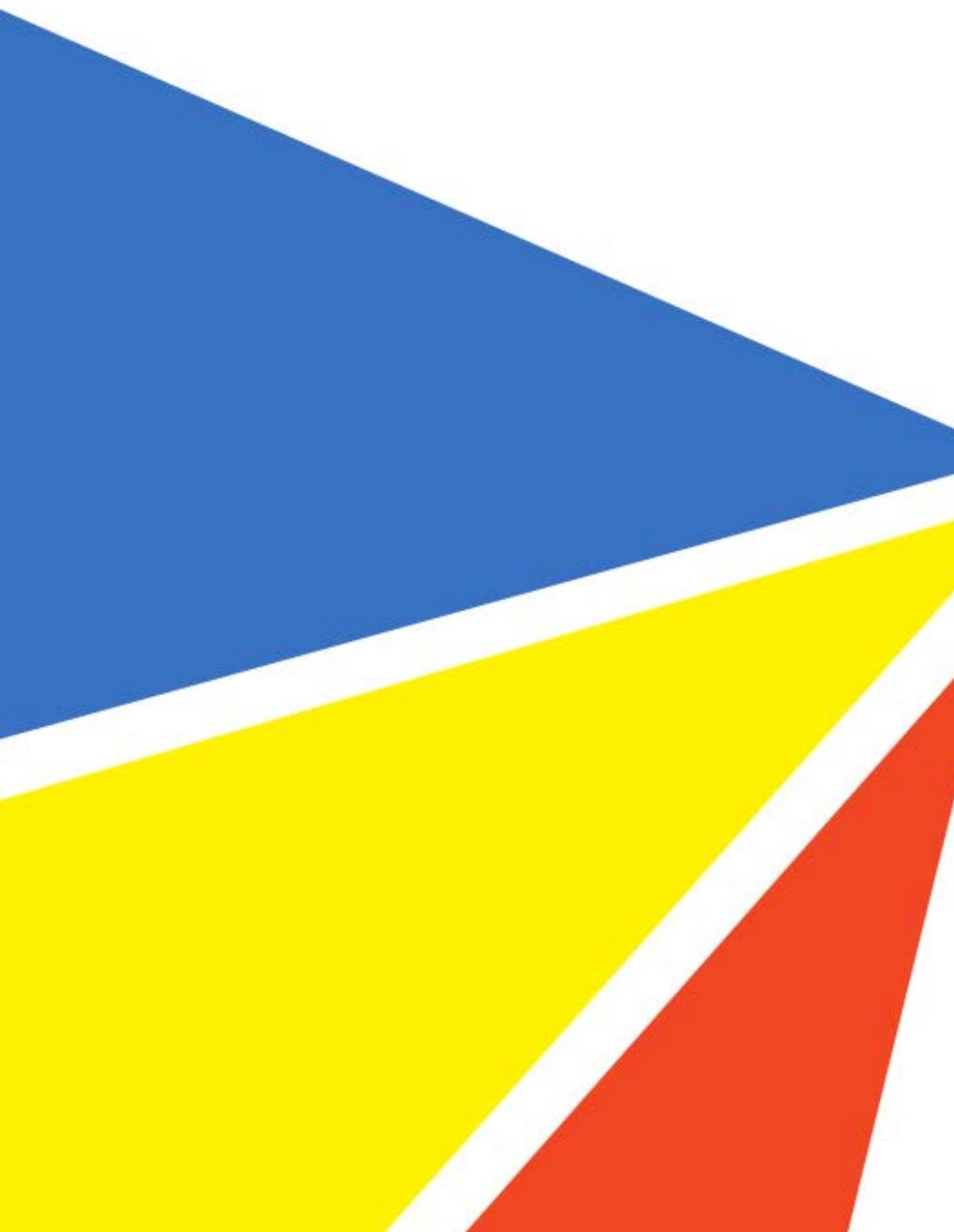


Trojan ③

User Guide

Revision 3.8
22834693-EN-E



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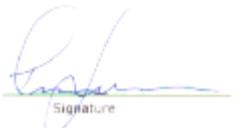
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1 Specification and General Information

1.1 Certificate and Compliance

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



EC DECLARATION OF CONFORMITY 2006/42/EC Annex II A Original			
Manufacturer and authorised to compile the technical file:			
 Trojanlabel Marielundvej 46A, 2. 2730 Herlev Denmark			
Hereby declares that machine type:			
Trojan ③			
TrojanThree digital printer			
Is produced in accordance with the following EU directives:			
<ul style="list-style-type: none">- 2006/42/EC Machinery directive- 2004/1008/EC EMC directive			
 Signature			
Thomas Jensen Name	Product Director Occupation	Herlev Place	1-9-2016 Date

1.2 Introduction

Original instructions

These instructions are original instructions made by Trojanlabel for the Trojanlabel digital over-printer (henceforth called the machine or TrojanThree).

Purpose

The purpose of these instructions is to ensure correct installation, use, handling and maintenance of the machine.

Accessibility

The instructions are to be kept in a location known to the staff and must be easily accessible for the operators and maintenance personnel.

Knowledge

It is the duty of the employer (the owner of the machine) to ensure that anyone who is to operate, service, maintain, or repair the machine have read the instructions. As a minimum, they should have read the part(s) relevant for their work. In addition, anyone who is to operate, service, maintain, or repair the machine is under obligation to look for information in the instructions themselves.

1.3 General Information

Manufacturer

The machine has been manufactured by:

Company name: Trojanlabel

Address: Marielundvej 46A 2 sal

2730 Herlev

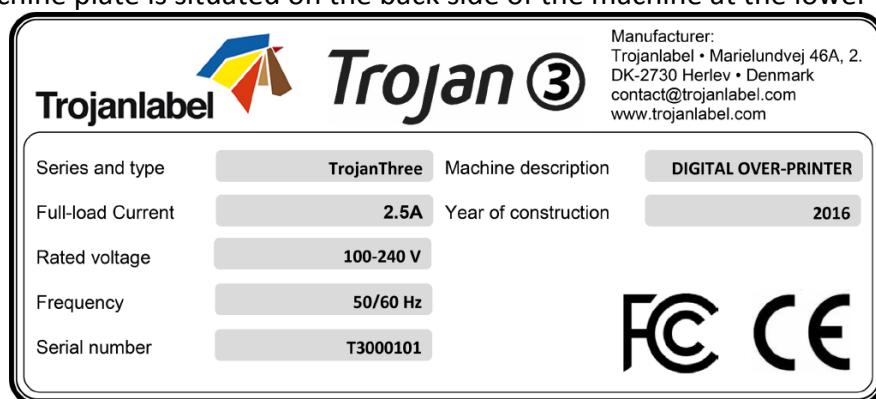
Denmark

The machine's designation

The machine's complete designation is Digital Over-Printer type Trojan③.

Machine plate

The machine plate is situated on the back side of the machine at the lower right corner:



1.4 Specification and Application

☞ General description

The machine consists of a metal cabinet, ink delivery system, service door, print engine, embedded PC, touchscreen, media sensor (optional), printhead and 4 ink tanks.

If any changes or alterations are made to the machine, these changes or alterations must be reflected in these instructions as necessary.

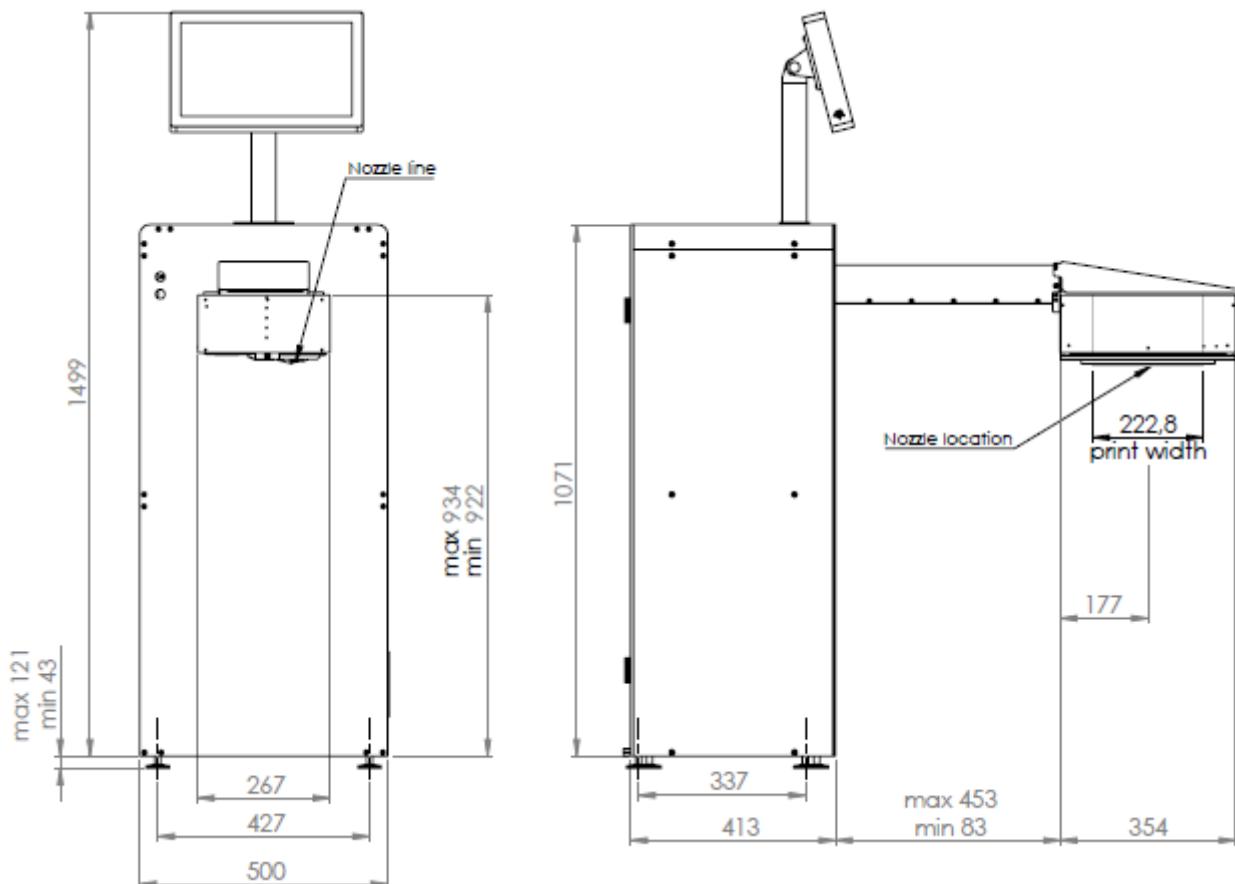
☞ The machine's purpose and intended use

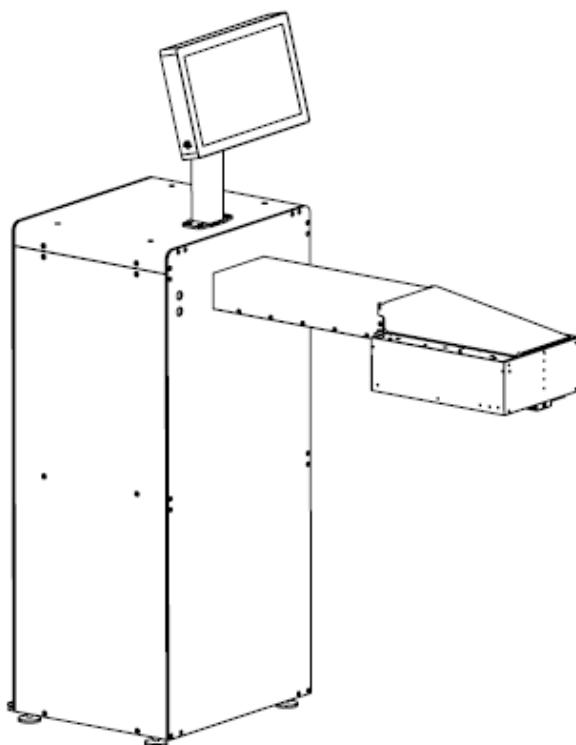
Application: The machine is only to be used to print labels (label printer /LP/ version) or to print on packaging materials (over printer /OP/ version) which meet the material specification requirements. The machine must not be used for any other purpose than the purpose mentioned above.

☞ Warning about foreseeable misuse

The TrojanThree may not be used with inks not endorsed by Trojanlabel. All inks purchased from Trojanlabel or from official Trojanlabel distributors worldwide are endorsed by Trojanlabel.

☞ Physical specifications in millimeters





Weight approximately 85kgs including inks

Electrical:

- Nominal supply voltage: 110-240V
- Nominal supply frequency: 50-60hz
- Estimated peak consumption: 150W
- Machine power supply:
150 W (48 VDC, 3.2 A), please see "Meanwell SP-150-spec.pdf" for details:
<http://www.trojanextranet.com/media/58025/sp-150-spec.pdf>

Technical Specifications:

- Simple cleaning station ensures high print quality over long runs
- Ink drop size is 1-2 Pico liter
- Spring loaded blade for controlling media just before printhead
- Print head height adjustable:
Electronically: 3 mm, both directions
Mechanically: unlimited, depending on design
- Remote access for control and service

Performance

- Print speed 9 m/minute or 18 m/minute (+/- 5%)
- Print resolution – 1600 x 800 dpi or 1600 x 1600 dpi
- Printer Data connectivity – Ethernet 10/100/1000
- Dye ink in 4 individual 2000 ml CMYK color ink tanks

Operating positions, location and arrangement

The machine is intended to be used in a light industrial/office environment. The operator operates the machine in a standing or sitting position.

Temperature

Recommend operational temperatures

- Operation: 15° to 30° Celsius at RH 22-80% (non-condensing)
- Storage: -5° to 50° Celsius at RH up to 85%, non-condensing at 65°

If transferring the machine from different temperature conditions, ensure that the machine has time to acclimatize.

Operating Environment

It is important that the machine is placed in a clean environment as possible, with sufficient air conditioning/cleaning. Avoid placing it in an environment with dust and paper debris, as the print head nozzles are sensitive to this.

Label Materials

The machine requires ink jet coated materials for optimal print quality; some non-coated materials like cardboard or other packaging materials will also work. Please contact Trojanlabel or your distributor for recommendations of suited materials.

It is imperative to have a local source of material, to ensure a stable production.

Media Handling

- Maximum printable width – 222,8 mm
- Maximum printable length – 1500 mm without stitching,
- Unlimited length width stitching
- Media width – depends on installation
- Media thickness – User controlled, adjusted through user interface

Usability & Serviceability

- User friendly interface called TrojanControl software
- 15.6" color HD capacitive touchscreen (Optional)
- Ethernet 10/100/1000.
- 120GB storage
- Remote access for control and service
- Easy setup, troubleshooting and servicing
- Stainless steel and aluminum with industrial-grade ruggedness
- Printer driver compatibility – 32/64-bit Windows XP, Vista, 7, 8, 10,
- Supported Network protocol – Automatic (DHCP) or Manual TCP/IP settings
- Automatically upgradable firmware and software
- Easy replaceable print engine for quick swap out.

2 Setting up the TrojanThree for printing

2.1 Unpacking and Physical setup

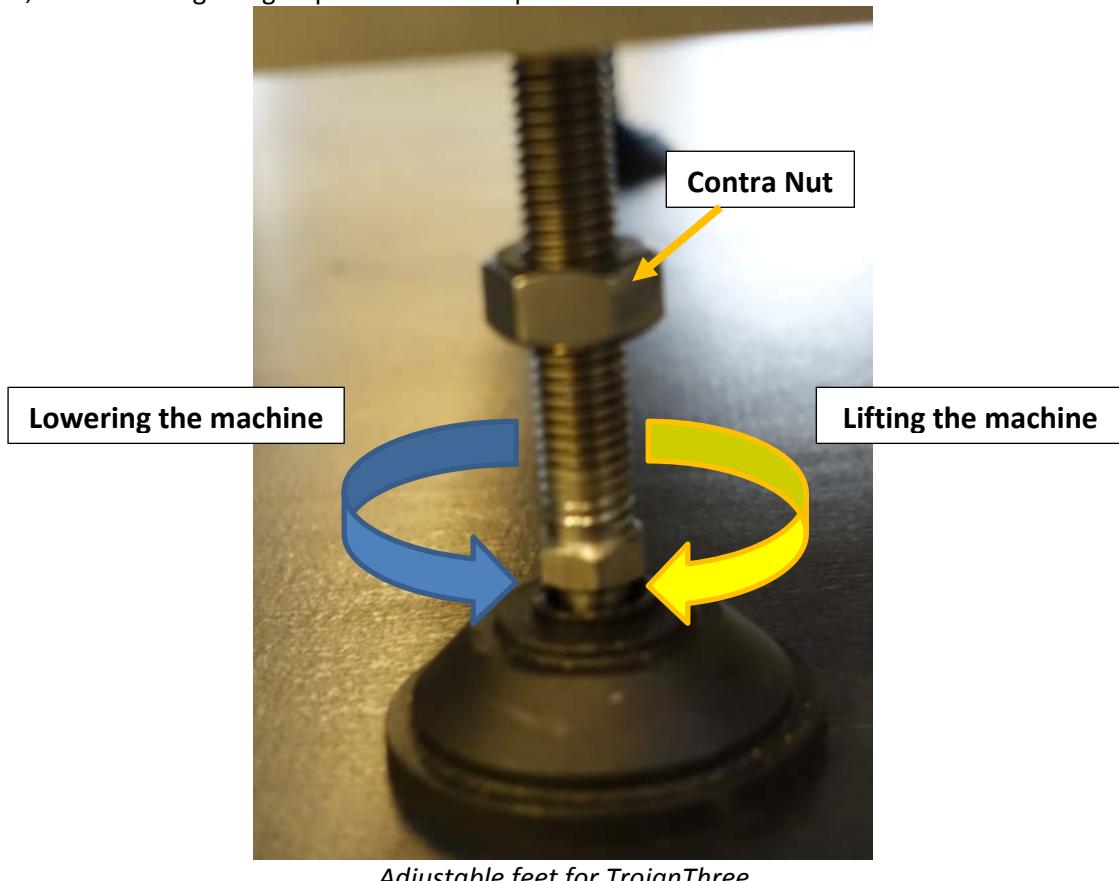
The TrojanThree is packed in a wooden crate (dimensions: 74x59x158cm) and shipped strapped on top of a wooden pallet (total weight of the package including the crate is around 125kgs). After opening the wooden crate the machine must be lifted out from the crate. The approximate weight of the machine is 70kgs, therefore it is advised to lift the machine out of the box by multiple persons to avoid injury.

Content of package:

- TrojanThree Digital Over-Printer in a metal cabinet
- Touchscreen with cables and screws (4 screw to mount)
- Power Supply Cable (matching with the regional standard)
- Print Engine module
- Packing list

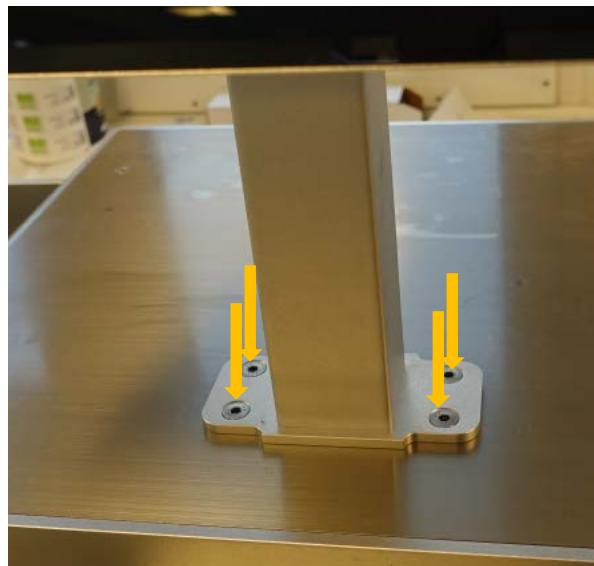
2.1.1 Setting the adjustable feet:

The machine is standing on 4 adjustable feet. The height of the feet can be set from 43mm to 121mm. The feet height can be adjusted by turning the foot clockwise (lifting the machine) or turning the foot counter-clockwise (lowering the machine). The contra nut on each foot ensures that the feet's height position will not change accidentally. Make sure all 4 feet are set to the same height and machine is leveled, check leveling using a spirit leveler. See picture below:



2.1.2 Mounting the touchscreen and connecting the cables for the screen:

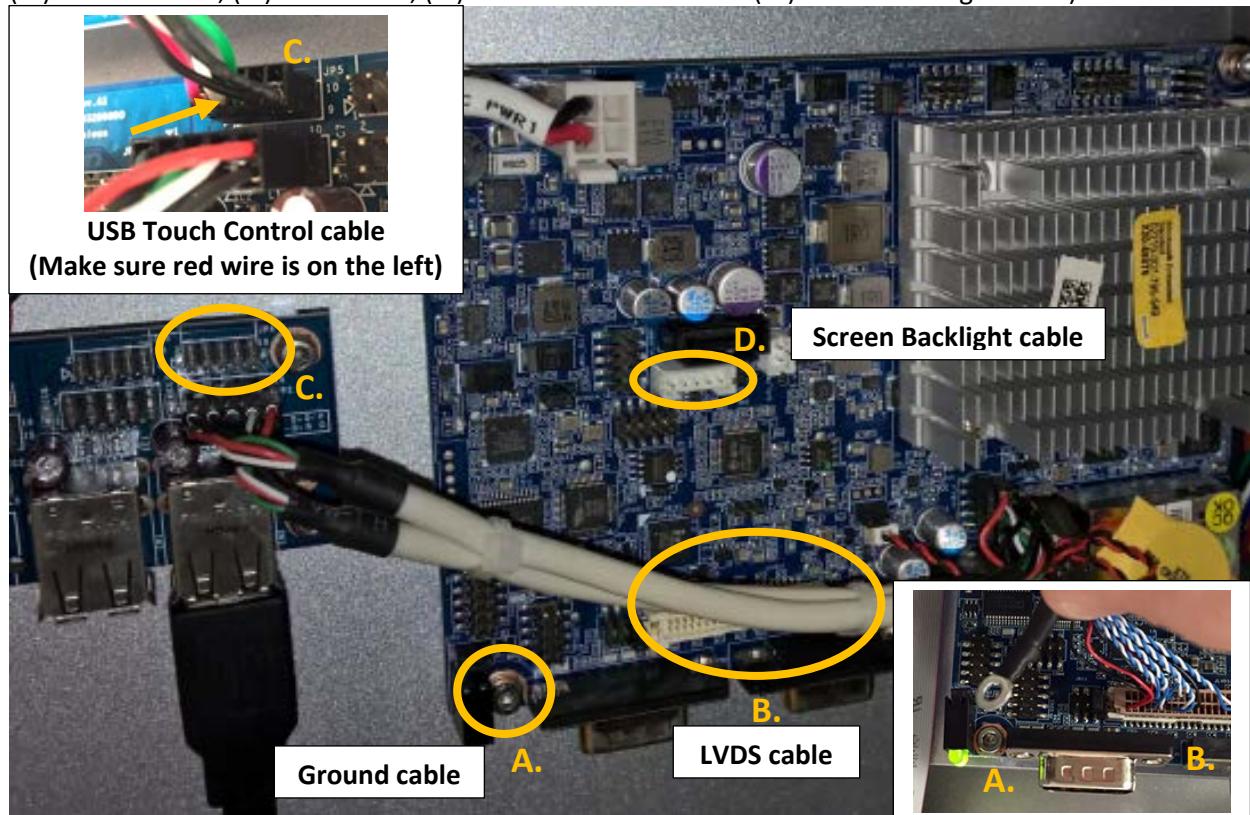
Lead the cables of the touchscreen through the hole on the top of the machine cabinet. Then fix the touchscreen stand with 4 screws to the top of the machine cabinet.



Mounting touchscreen stand...

Connecting touchscreen cables:

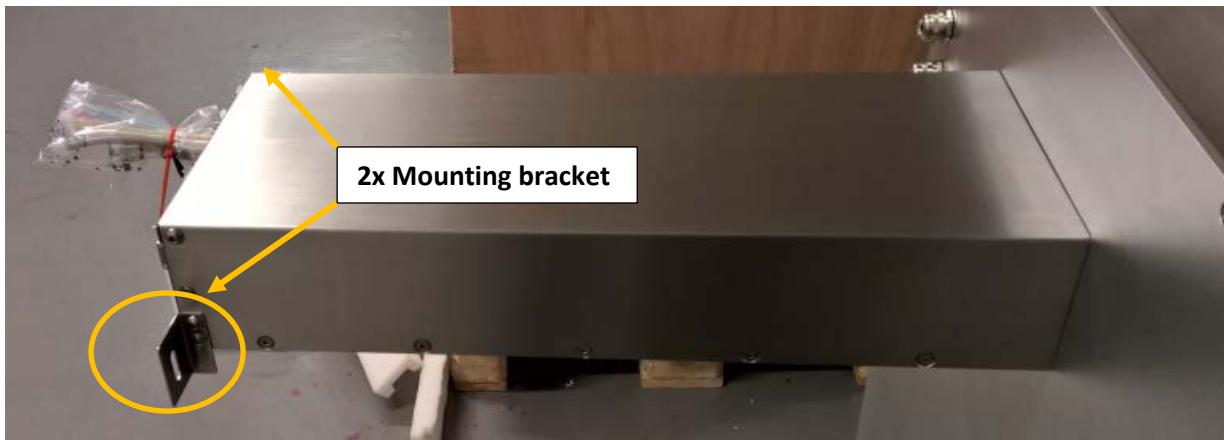
(A.) Ground cable, (B.) LVDS cable, (C.) USB Touch Control and (D.) Screen Backlight cable)



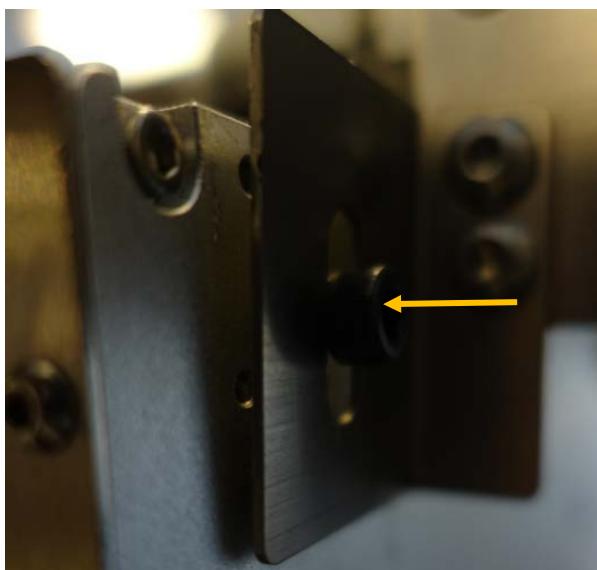
Embedded PC Motherboard inside the machine cabinet

2.1.3 Mounting Print Engine

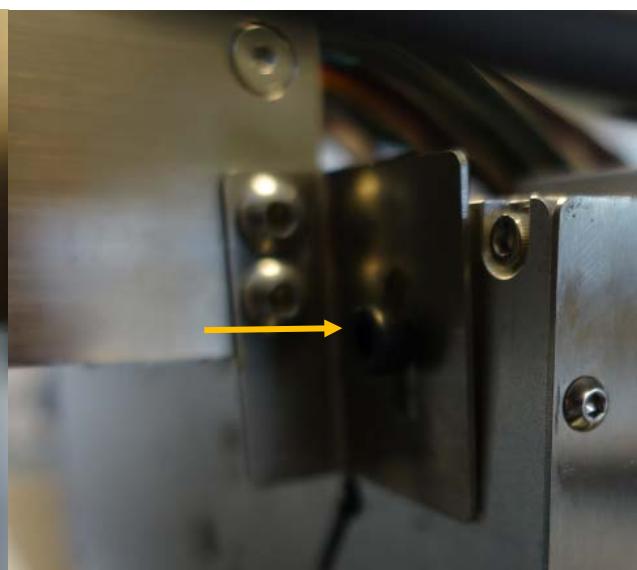
There are 2 mounting brackets to attach the print engine module to the machine cabinet. Each mounting bracket has to be fixed with 2 screws.



After fixing the mounting brackets, the print engine module can be fixed by the mounting brackets with 1 screw on each side.



Left side mounting bracket

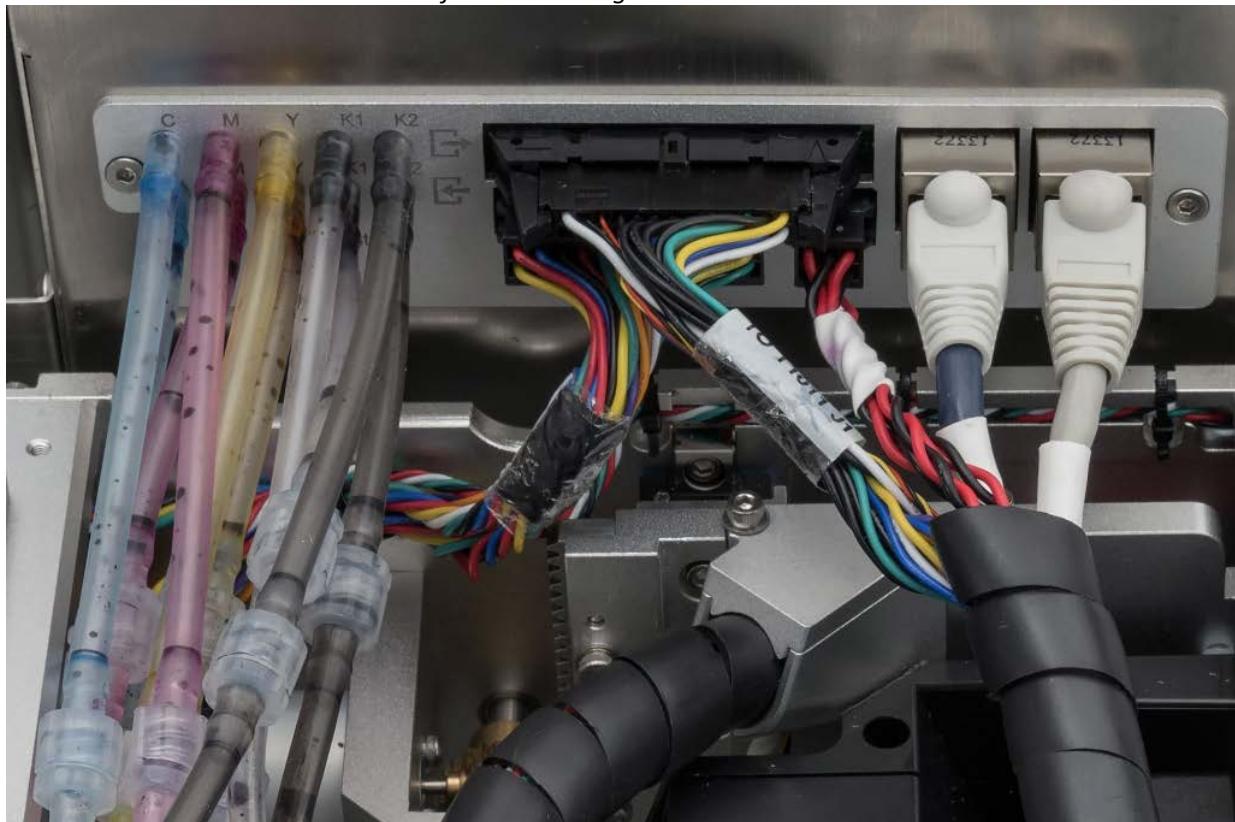


Right side mounting bracket

Connect all the tubes and cables between print engine module and machine cabinet.



Before connecting tubes and cables



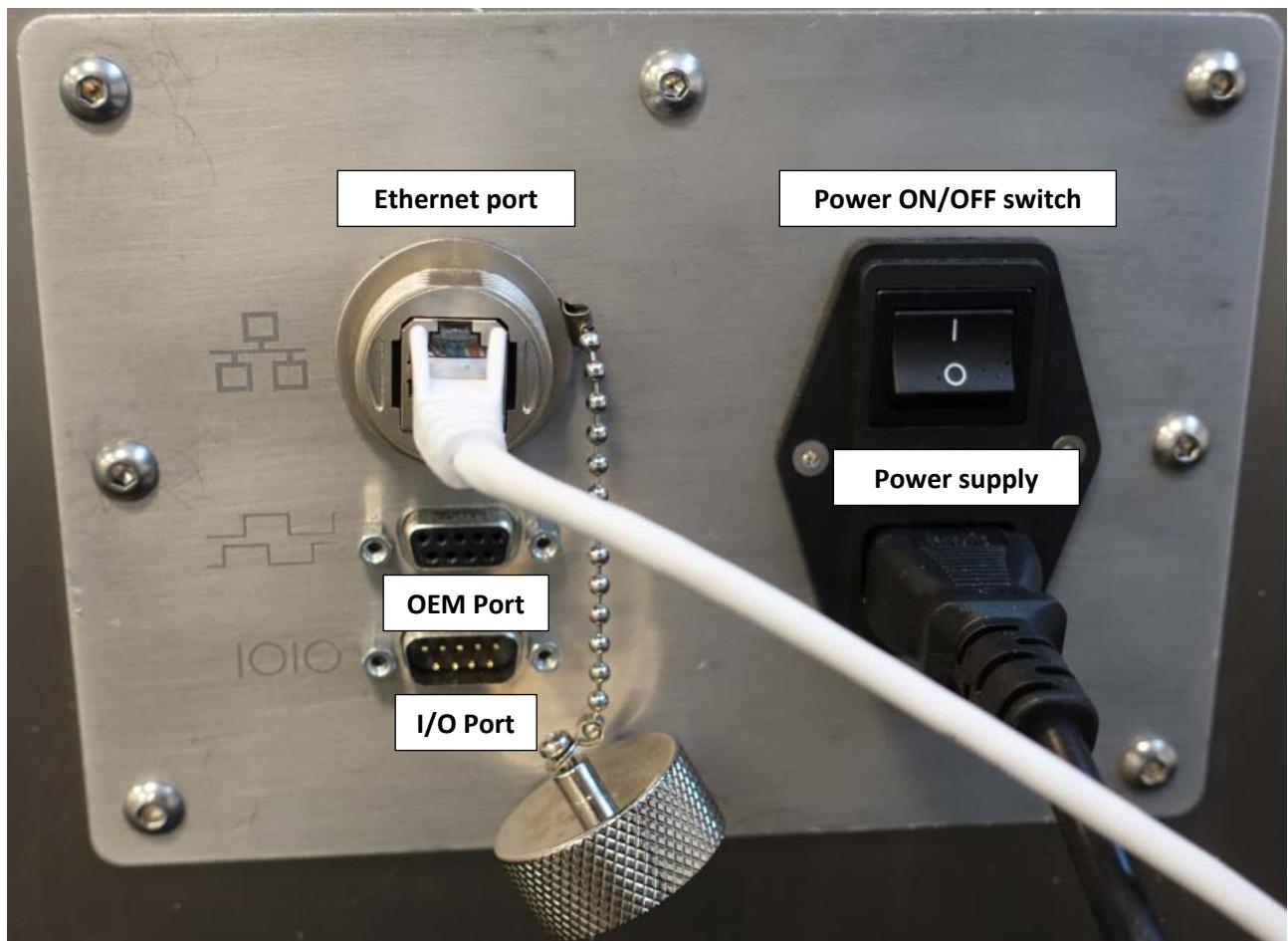
NOTE: The luers are matching for the ink tubes at incoming and return ink lines so the tubes cannot be connected wrong. Make sure the colors of the tubes are matching when connecting the tubes. The 2 Ethernet cables are labeled with the proper port number (J4, J5). All other connectors are unique.

2.2 Cabling (network and power supply)

The machine has 4 cable inlets:

1. Power Supply
2. Ethernet
3. OEM Port for encoder signals
4. I/O port

Only the power supply cable is necessary for powering up the machine. The network cable is necessary for sending new print jobs to the TrojanThree and for remote support/software updates.



NOTE: Ethernet cable is not included in the TrojanThree package

3 Power On

3.1 Safety Check

Before powering on the TrojanThree, visibly ensure that no foreign objects are interfering with the print engine module.

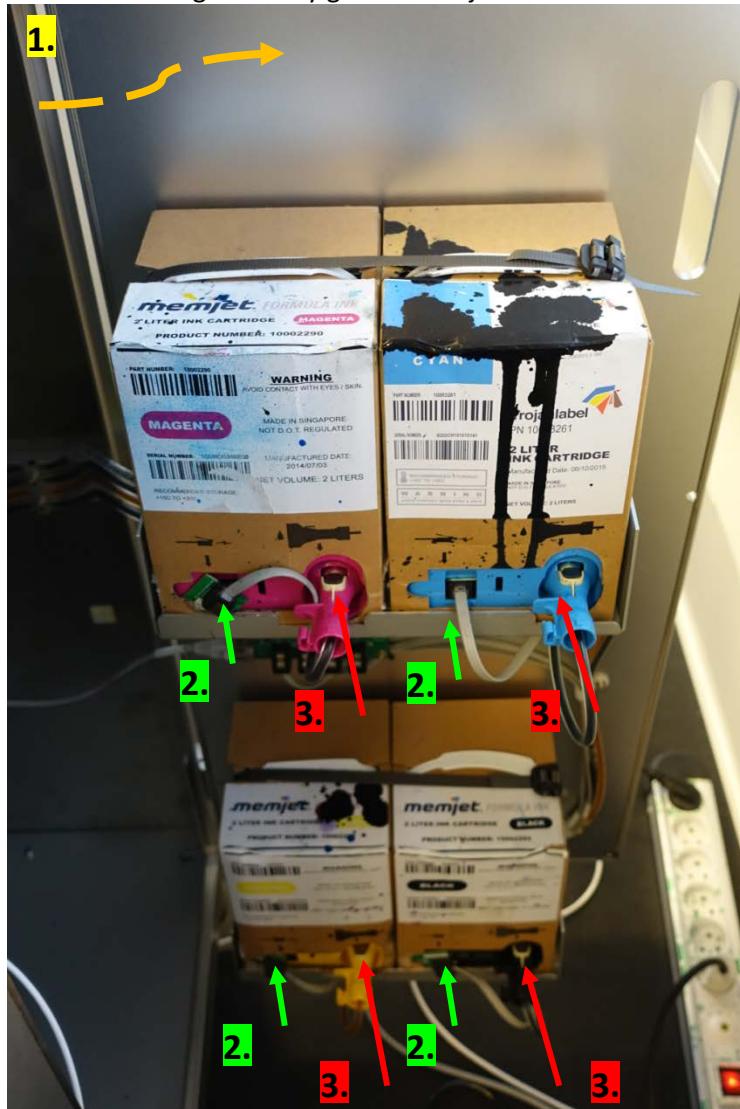
3.2 Power On Process

1. Press the physical power switch on the side of the TrojanThree, switching it from 0 to 1.
Turning the main power switch on starts up TrojanControl touch screen and print engine.
2. The machine is fully functional, when the TrojanThree tab is visible on the TrojanControl software and at right side status bar the 'system state' field is online and 'media path state' is ready.

3.3 Installing Ink Tanks and Printhead

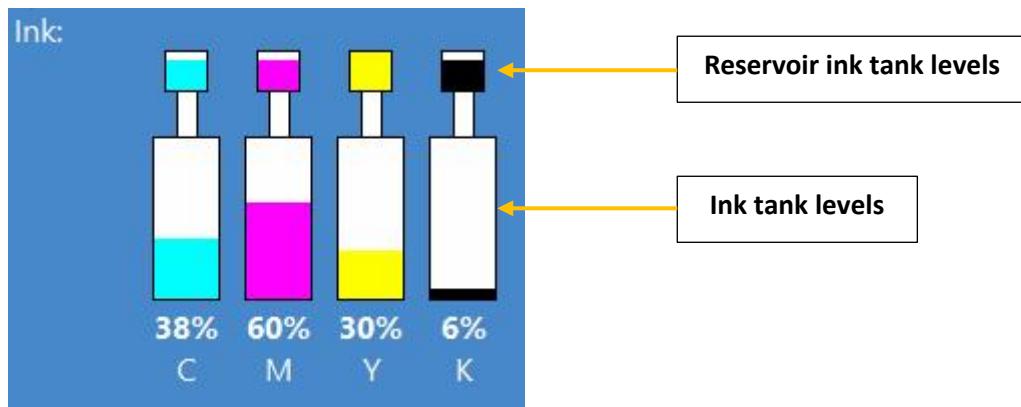
3.3.1 Installing ink tanks

The TrojanThree printer uses CMYK ink tanks, each contain 2 liters of ink when opened. Every TrojanThree ink tank is QA chip protected ensuring that only genuine Trojanlabel ink tanks can be used.



1. Open door on back side of the cabinet to gain access to ink tanks (orange arrow on picture above).
2. Connect QA chip reader cable (green arrow on picture above). The connector clicks onto the slot when properly connected.
3. Connect tube with connector (red arrow on picture above). The connector clicks onto the slot when properly connected.

When ink tank is connected the proper ink level and percentage is displayed at status bar on the touch screen:

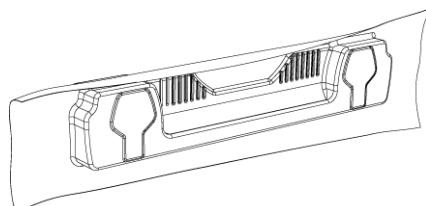


NOTE: TrojanThree ink tanks are not refillable and shall be treated as hazardous waste when empty.

3.3.2 Installing the printhead

- **Unpacking printhead:**

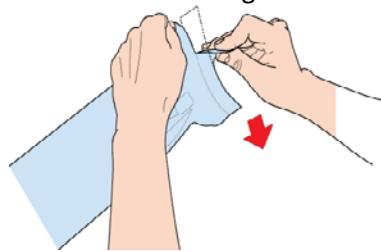
1. Open the end of the printhead package outer box and slide out the foil bag.



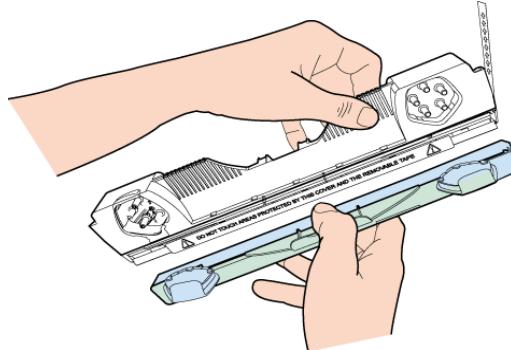
Inspect the integrity of the foil vacuum sealing. The foil bag should be formed tightly to the contours of the printhead cartridge as shown above. If the foil is loose to any degree then the seal has been compromised.

NOTE: If a poor seal is suspected, **DO NOT USE** the printhead. Report the issue to your supplier.

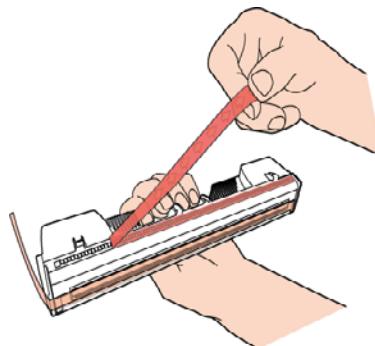
2. Carefully rip the foil packaging open at the notch. Use scissors if your foil bag does not have a notch or you are finding it difficult to tear the bag.



3. Remove the printhead from the foil bag.
4. Remove the orange protective plastic cover from the printhead cartridge. Holding the printhead cartridge by the handle
 - a. Release the flaps covering the ink ports
 - b. Release the clip retaining the cover near the center of the printhead cartridge
 - c. Carefully remove the protective cover

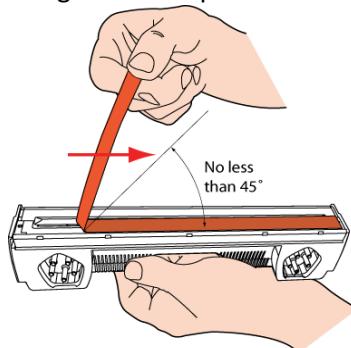


5. Remove the protective strip from the electrical contacts. While holding the printhead cartridge by the handle with one hand, grasp the pull tab with the other hand and, slowly and carefully, peel back the plastic strip covering the electrical contacts.



NOTE: Dispose of the removed strip immediately and do not allow the removed strip to contact the electrical contacts.

6. Remove the protective strip from the printhead nozzles. While holding the printhead cartridge by the handle with one hand, grasp the pull tab with the other hand and slowly and carefully peel back the plastic strip covering the printhead nozzles. Maintain an angle of no less than 45° with the printhead surface when pulling on the strip.



NOTE: Dispose of the removed strip immediately and do not allow the removed strip to contact the electrical contacts or the printhead nozzles.

CAUTION!

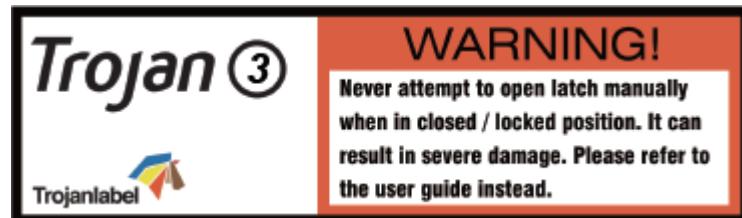
- **DO NOT** touch the printhead cartridge's ink couplings, nozzle surface or the electrical contacts when installing the printhead cartridge. Hold the printhead cartridge **ONLY** by the handles.
- **DO NOT** unpack the printhead cartridge until the machine is ready for installation. Once unwrapped, delay in installing the printhead can compromise print quality due to dehydration.
- **DO NOT** place an unwrapped printhead on any surface before installing. Protect the printhead at all times from dust, fibers, dirt and other contaminants.

IMPORTANT: Do not throw away the printhead packaging. The white box has the serial number, part number and manufacturing date of the printhead. Also it is recommended to store printheads which are currently not installed in the original packaging.

- **Installing printhead:**
 1. Open cover lid on TrojanThree to gain access to the print engine.



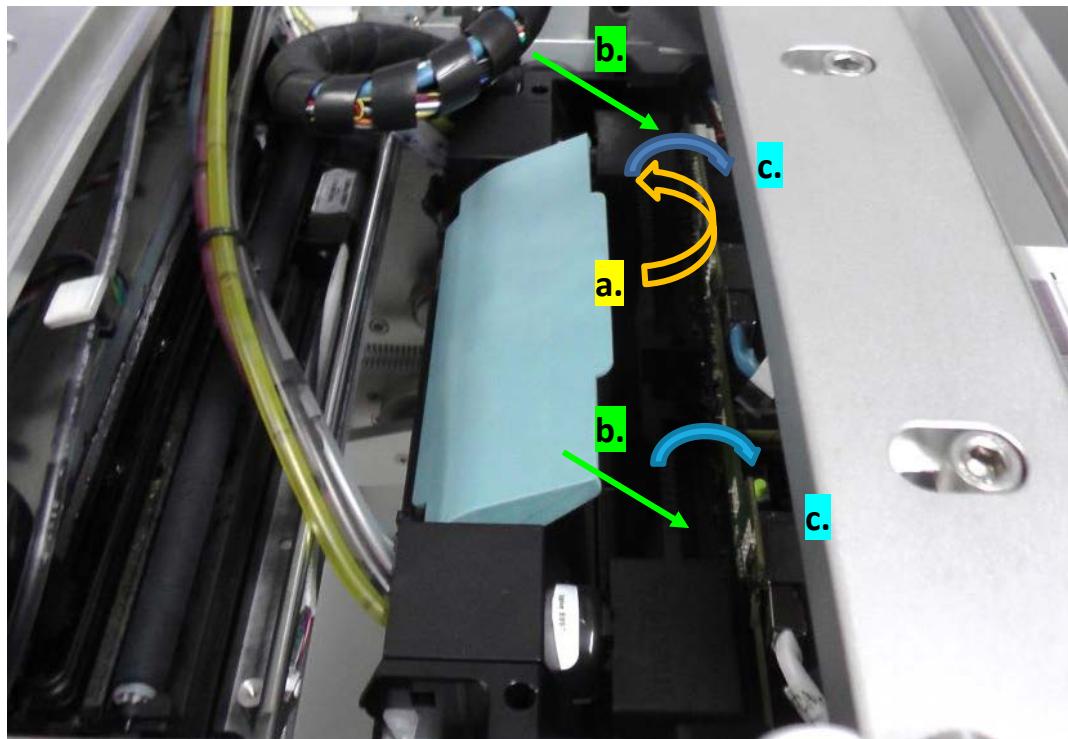
2. Press Release Printhead button in TrojanThree -> Maintenance menu to open printhead latch:



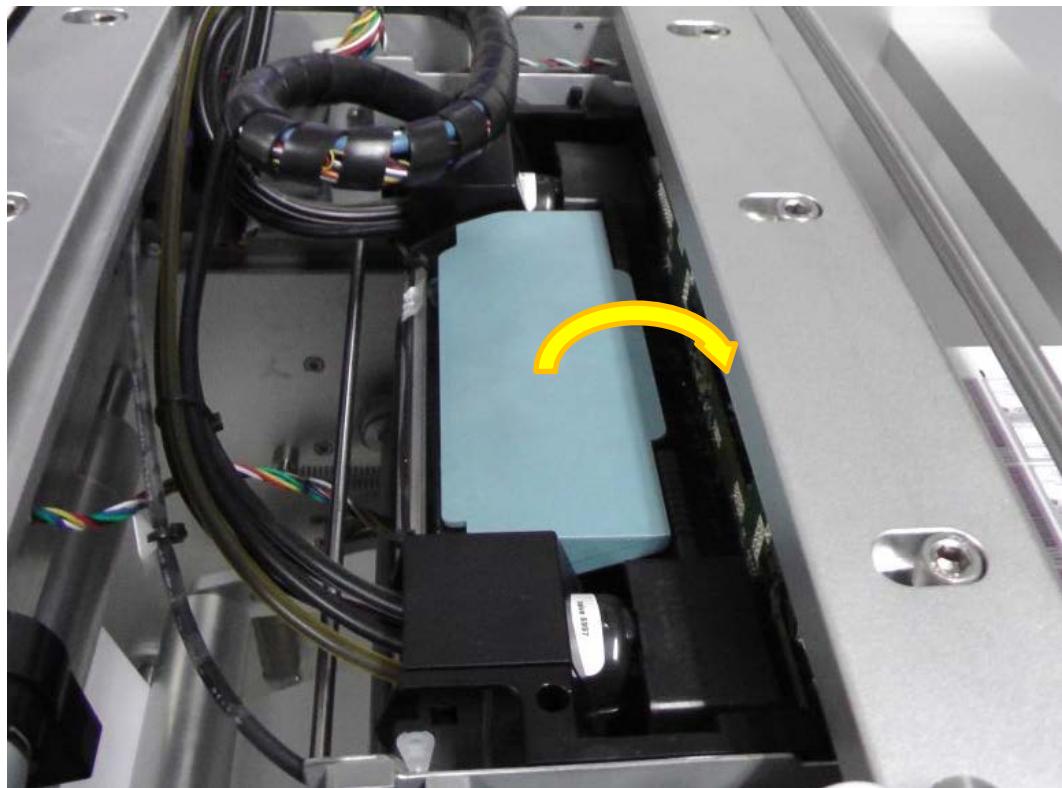
NOTE: The above warning label can be found on the printhead latch. Trying to open the blue plastic latch manually by the handle will most likely break the latch. Breaking the latch is considered as improper usage and therefore replacement is out of warranty. Breaking the latch also causes the machine to be non-operational until the broken part is replaced.

3. Insert printhead by the handle into the cradle.

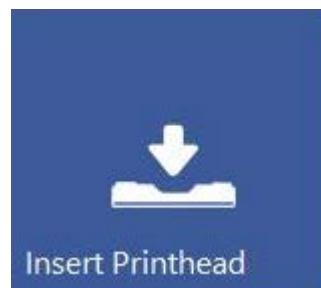
- a. Open printhead latch all the way up.
- b. Insert printhead into the cradle by the handles.
- c. Pull the printhead backwards until it snaps into the proper place standing upright.



4. Close printhead latch.



5. Press Install Printhead button in TrojanThree -> Maintenance menu to start priming up the printhead with ink.



NOTE: When the system is primed up for the first time (first installation when there has not been any ink in the ink delivery system and the reservoir ink tanks), printhead priming only begins when reservoir ink tanks are filled up with ink. This may take up to 20 minutes before actual priming of the printhead begins.

4 Integrating the TrojanThree OEM Print Module

The TrojanThree Digital Over-Printer can be integrated into 2 types of applications. These are:

1. **Over Printer (OP)** application where the TrojanThree is installed on the top of a conveyor system and printing on packaging materials directly.
2. **Label Printer (LP)** application where the TrojanThree is installed into existing finishing lines or flexo press lines to print labels as a roll to roll application using the web path system of the certain application

Each type of application has different requirements for integrating the TrojanThree from the physical build to synchronization of printing speed with the conveyor or web path movement. This section is only presenting the applications as the physical integration of the TrojanThree is done by the local Trojanlabel distributor or by Trojanlabel directly in areas where there is no official Trojanlabel partner. Trojanlabel has a separate technical integration document for detailed description and technical specification.

4.1 Over printer (OP) version



Example: TrojanThree built on a mail table to print on packaging materials or envelopes

Requirements:

The speed of the conveyor belt has to be able to do 9 meters / minute (6ips) or 18 meters / minute (12ips) constant speeds. The movement speed of the conveyor belt has to be synchronized with the TrojanThree printing speed.

Unique features:

- Media Present sensor (optional) can be connected to deliver media present signal to TrojanThree
- Job Ready Indicator LED (optional) for indicating when the TrojanThree is ready to print
- Print Engine Bracket (optional) for fixing the print engine module to the conveyor belt system
- Printing on typically non ink jet coated stock of packaging materials or envelopes (certain materials must be tested for ink compatibility)

4.2 Label printer (LP) version



Example: TrojanThree built on a GM DC330 mini finishing line printing labels on roll media

Requirements:

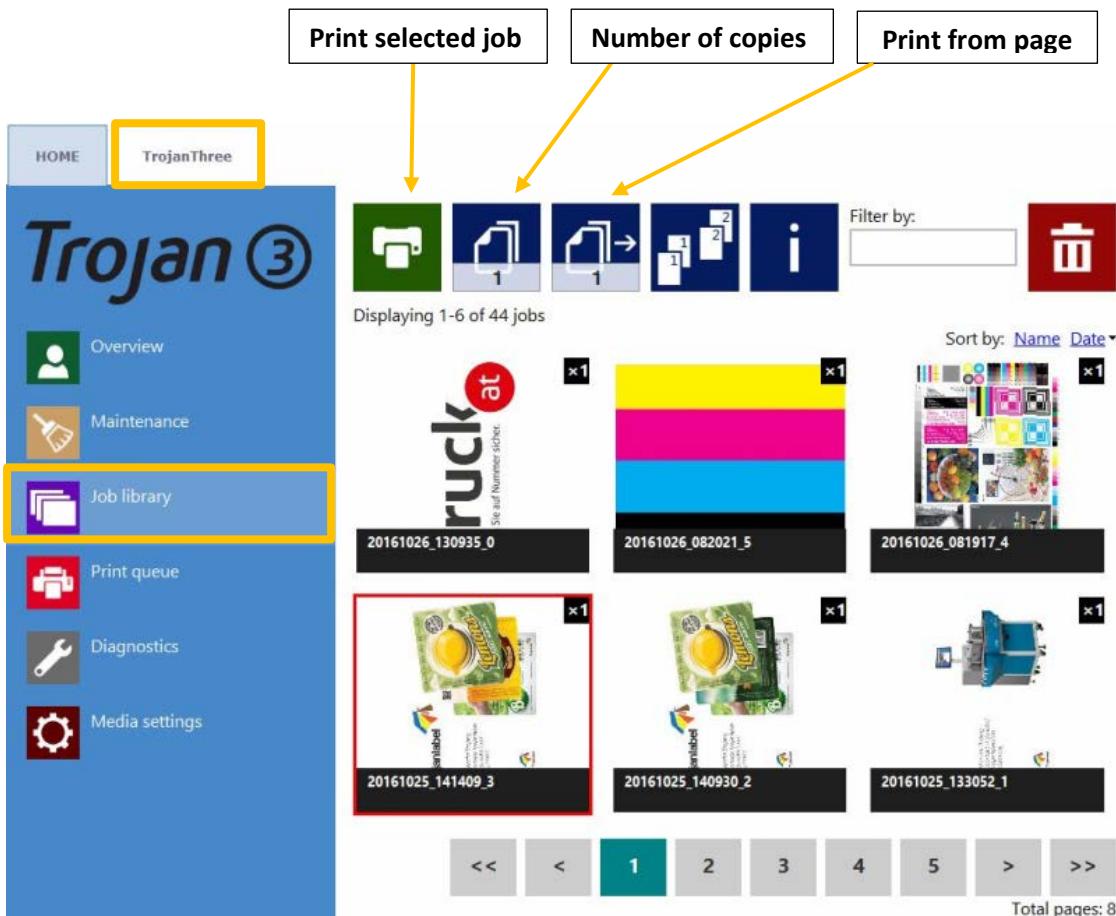
The speed of the finishing line has to be able to do 9 meters / minute (6ips) or 18 meters / minute (12ips) constant speeds. The movement speed of the web path has to be synchronized with the TrojanThree printing speed. Communication with the finishing line, like job start/stop/pause signals, print speed signal.

Unique features:

- Communication between finishing line and TrojanThree (job start/stop/pause signals, print speed signal etc.) via OEM or serial port.
- Print Engine Bracket (optional) for fixing the print engine module to the finishing system
- Printing on typically ink jet coated stock and roll to roll application

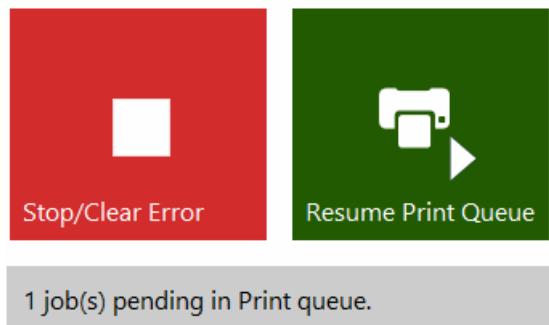
5 Sending, Starting, Selecting and Queuing Print Jobs

1. Print Jobs can be sent via the TrojanThree driver by default (see section 10 for driver features and installation) and/or via the Trojan RIP software (optional). All jobs sent through the TrojanThree driver or the Trojan RIP software are stored in Job Library menu (if feature is not disabled).
2. Select “Job library” (See section 11.3.3 for full Job Library description)



3. Select a job by pressing the image, the selection is indicated with a red box around the selection.
4. Choose number of copies or from which page to print, by pressing the ‘Number of Copies’ button or the ‘Print from Page’ button (printing job from a certain page number).
5. Send print to queue by pressing the green print button

6. If the Print Queue is paused, press the resume button on the overview screen. If the queue is active the print job will start immediately, and print job progress is viewed in the “Overview”-screen, which is automatically displayed when starting a print (when Auto switch to overview when printing from job library option is enabled in HOME -> Settings -> User Preferences menu).



Print queue is paused. Press Resume Print Queue button to start printing.



Print job in progress in overview menu.

6 Pause, Resume or Stop a Print Job

Pause, resume and stop of print job is done from the TrojanThree tab -> Overview menu.

- **Pause:** Press the Pause/Resume button. Print state will change to “Paused” at status bar.



System State:	Online
Error State:	NA
Print State:	Paused
Media Path State:	Ready
Media Speed:	
Maint State:	No
Maint Error:	No

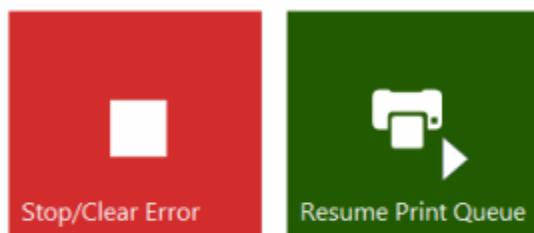
Print state changed at status bar to Paused

- **Resume of paused job:** Press the Pause/Resume button once more. Print state will change to “Printing”.

System State:	JobAvailable
Error State:	NA
Print State:	Printing
Media Path State:	Ready

Print Job resumed and TrojanThree is printing

- **Stop:** Press the Stop/Clear Error button. Print state will change to “NA” and current print job is canceled and removed from print queue.



No pending jobs.

Print job canceled, no job(s) loaded in print queue

System State:	Online
Error State:	NA
Print State:	NA
Media Path State:	Ready
Media Speed:	
Maint State:	No
Maint Error:	No
Print Queue State:	Running (0)

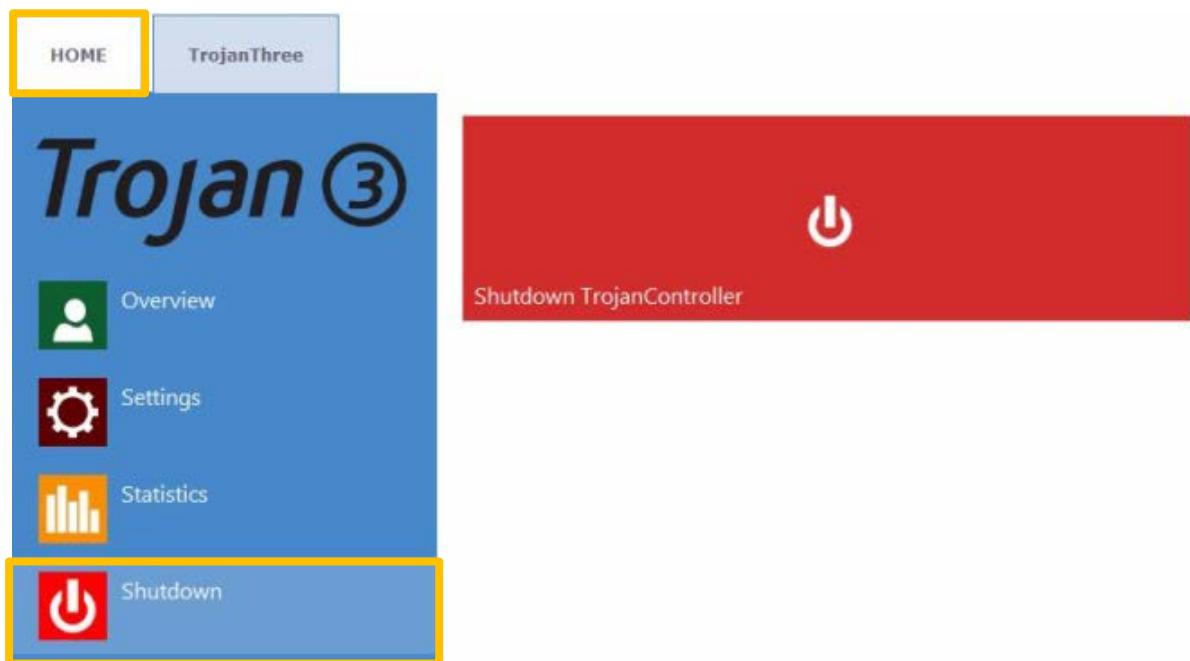
Status bar print state is NA

NOTE: NA = Not Available

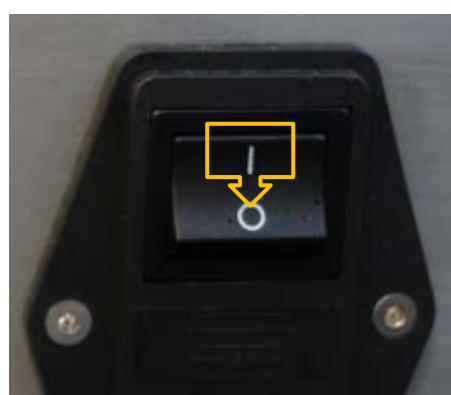
7 Shutting Down the TrojanThree

- **Shut down procedure:**

1. Go to HOME tab
2. Press 'Shut down' menu
3. Press the big red 'Shutdown TrojanController' button
4. Reconfirm by selecting ok.
5. Green information button is displayed about shutting down process, no need to press ok on that button



6. After shutting down the machine, turn off the power switch at the back of the machine to cut down power from the Power Supply Units.

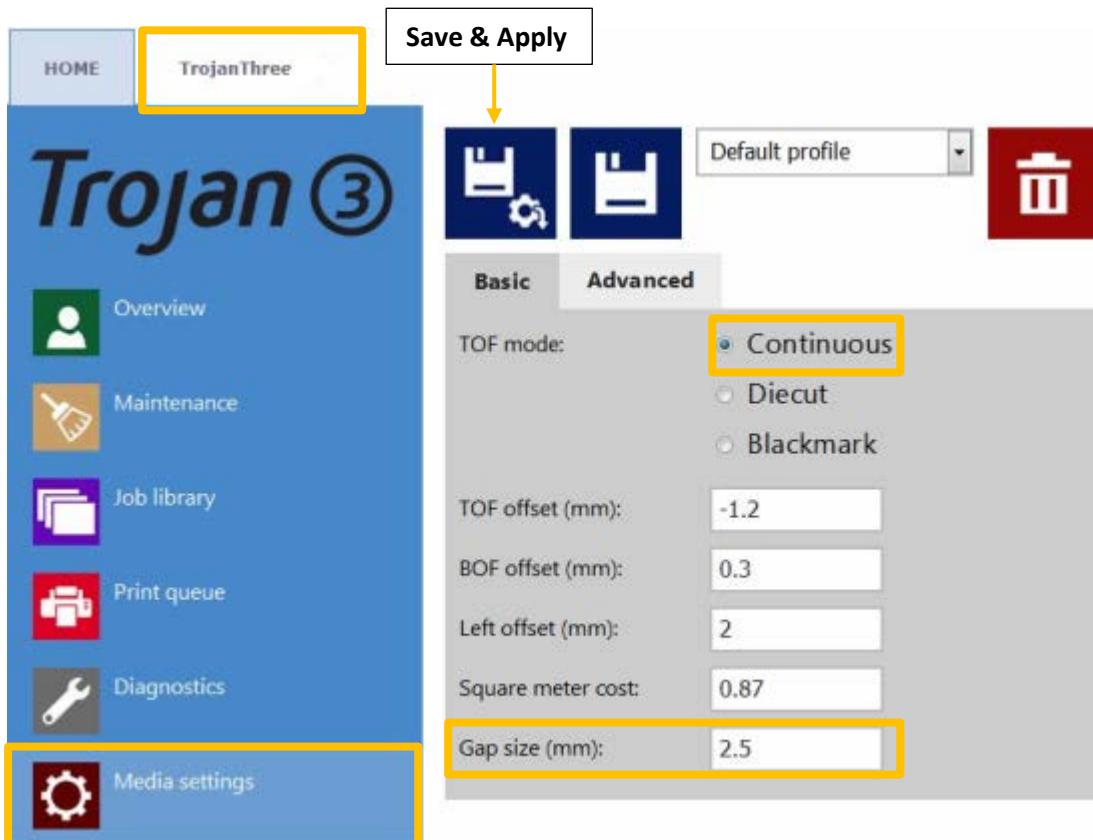


8 Printing Modes

Continuous and blackmark mode is only available for the Label Printer version of the TrojanThree.

8.1 Continuous Printing Mode (only available at LP version)

- To select continuous printing mode go to **TrojanThree -> Media Settings menu** and choose '**Continuous**' as TOF mode (TOF = Top of Form) to describe the top of form algorithm (how to detect the top of the next label). Press '**Save & Apply**' button to apply changes.
- Continuous label material has no gaps or blackmarks between the labels.
- The **gap between the labels** can be set at **TrojanThree -> Media settings menu**.



IMPORTANT: Because of inter-page actions the printed labels have to have:

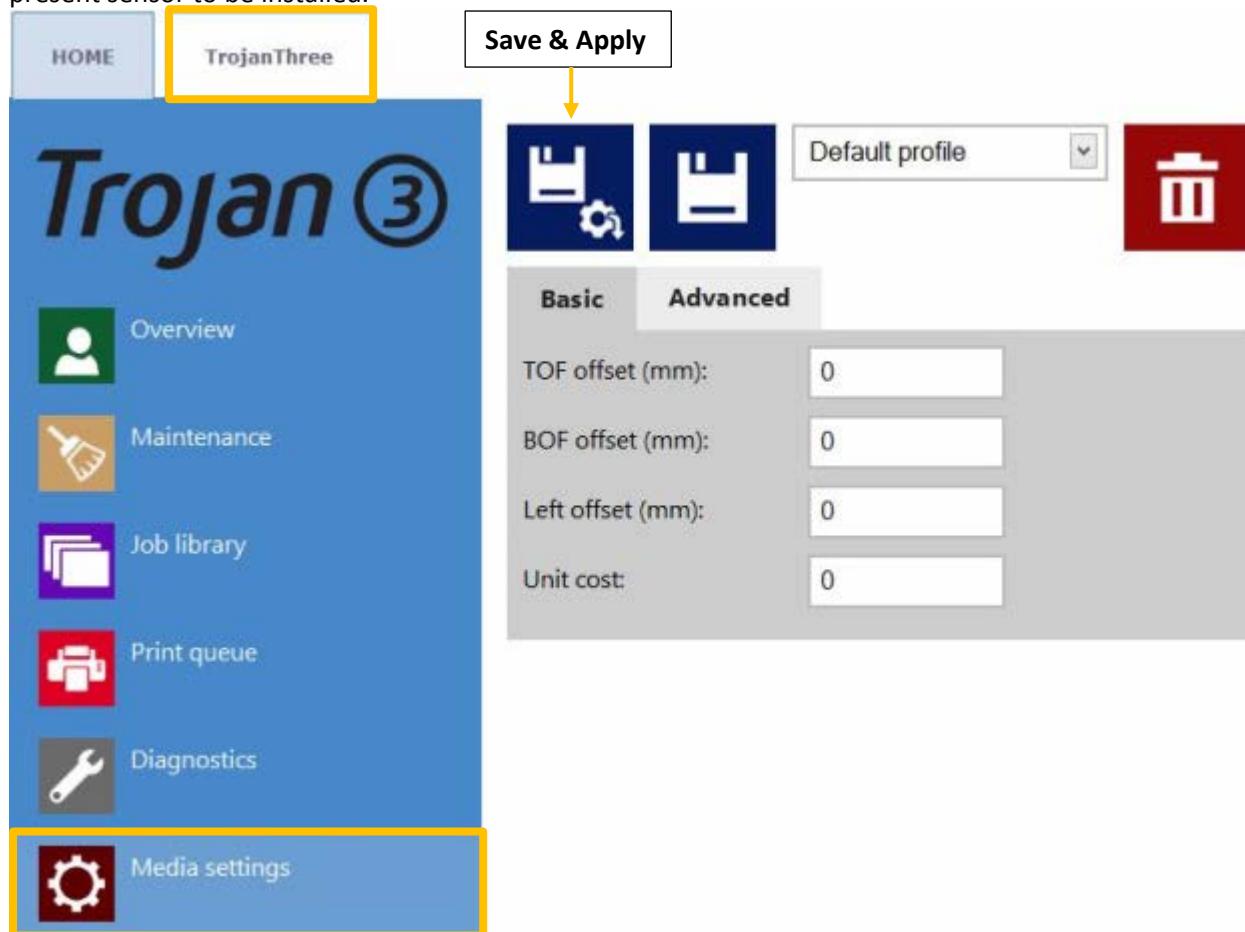
- Minimum 2.2 mm gap at 9m/min. (6IPS) mode
- Minimum 3 mm gap at 18m/min. (12IPS) mode.
- Maximum gap size is 65 mm

IMPORTANT: Setting label gap outside the minimum and maximum range can result in label skipping or enormously high label gaps or Missed TOF Error.

8.2 Diecut Mode (available for both LP and OP versions)

☛ TrojanThree Over Printer (OP) version:

Media gap mode is the only active TOF mode at the OP version of the TrojanThree. Requires media present sensor to be installed.



☛ TrojanThree Label Printer (LP) version:

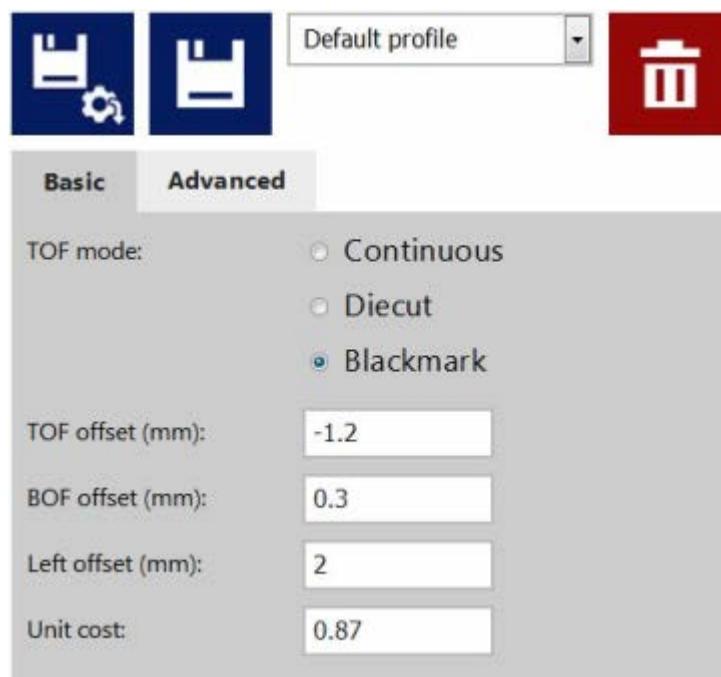
- To select diecut printing mode go to **TrojanThree -> Media Settings menu** and choose '**Diecut**' as TOF mode (TOF = Top of Form) to describe the top of form algorithm (how to detect the top of the next label). Press '**Save & Apply**' button to apply changes.
- Diecut label material has precut gaps between the labels.
- Diecut mode at LP version requires a label gap sensor installed at the application.**

Basic	Advanced
TOF mode:	
<input type="radio"/> Continuous <input checked="" type="radio"/> Diecut <input type="radio"/> Blackmark	

Diecut mode selected at Media Settings menu

8.3 Blackmark Mode (only available at LP version with sensor)

- To select blackmark printing mode go to **TrojanThree -> Media Settings menu** and choose '**Blackmark**' as TOF mode (TOF = Top of Form) to describe the top of form algorithm (how to detect the top of the next label). Press '**Save & Apply**' button to apply changes.
- Blackmarked label material has black registration marks called 'Blackmarks' preprinted between the labels.
- **Blackmark mode at LP version requires a label gap/blackmark sensor installed at the application.**



Blackmark mode selected at Media Settings menu

Size requirements for the blackmarks are the same as for the label gaps.

IMPORTANT: Because of inter-page actions the printed labels have to have at least:

- **Minimum 2.2 mm high blackmarks at 9m/min. (6IPS) mode**
- **Minimum 3 mm high blackmarks at 18m/min. (12IPS) mode.**

IMPORTANT: If the blackmark height is below the minimum size requirements, it can result in label skipping or Missed TOF error.

9 Label Gap Size Requirements and Print Speeds

TrojanThree Over Printer (OP) version:

The TrojanThree OP version has to have a media sensor installed which is detecting the packaging material on the conveyor belt. Therefore there are no gap size requirements. Based on the media sensor signals, the TrojanThree is printing when media is present on the belt and waiting for the next media signal for the next print. However there is a timeout of 15 seconds (by default) if the media is not arriving on the belt, then TrojanThree will report a 'Paper Path Feed Timeout' indicating that the printer is ready to print but there is no media to print on. This timeout period is necessary to protect the printhead nozzles from dehydration as in printing mode the printhead is not protected.

TrojanThree Label Printer (LP) version:

The minimum gap size and speed has a dependency due to the image processing in the print head. Therefore, we recommend these minimum gap size settings:

Speed	Minimum gap size
6 inches per second / 9 meters per minute	2.2 mm
12 inches per second / 18 meters per minute	3 mm

NOTE: the complexity of the image may also influence this. A very simple bar code image may allow for shorter gap sizes.

If the label gap size is set too low, TrojanThree will display an error in the 'Error State'-field called 'Paperpath Missed TOF' if this occurs:

System State:	Offline
Error State:	PAPERPATH MISSED TOF
Print State:	NA
Media Path State:	Ready
Media Speed:	
Maint State:	No
Maint Error:	No
Print Queue State:	Running (1)

Missed TOF Error in status bar

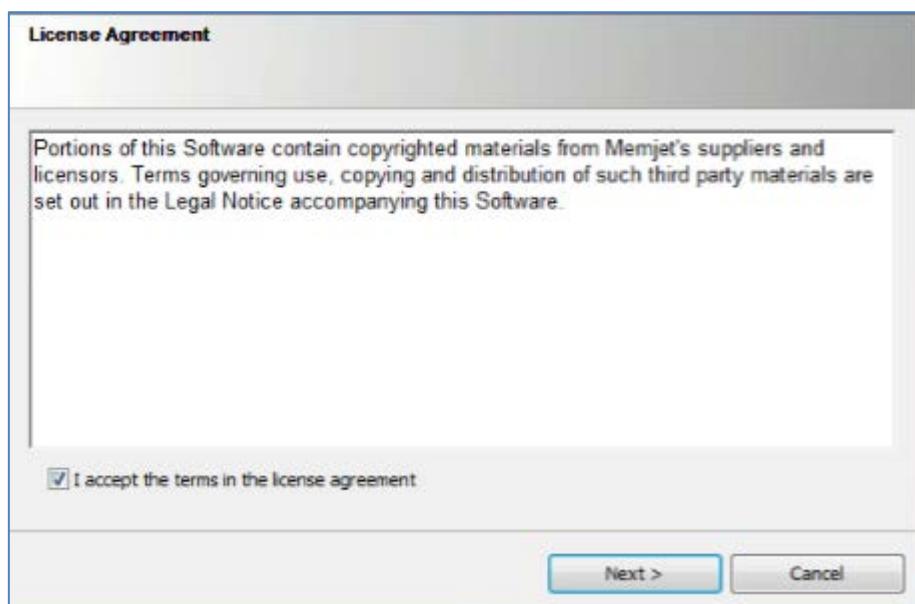
10 Driver Installation and Features

10.1 Driver Installation

- The TrojanThree driver can be found on the USB stick supplied with the TrojanThree package
- It is available for downloading on the Internet:
http://www.trojanextranet.com/media/58331/win_driver_13-sirius_r13.1-17nov2016.zip
- Open TrojanThree Driver installer on user's PC, run **WinSetup.exe** and choose 'Install Printer Software'

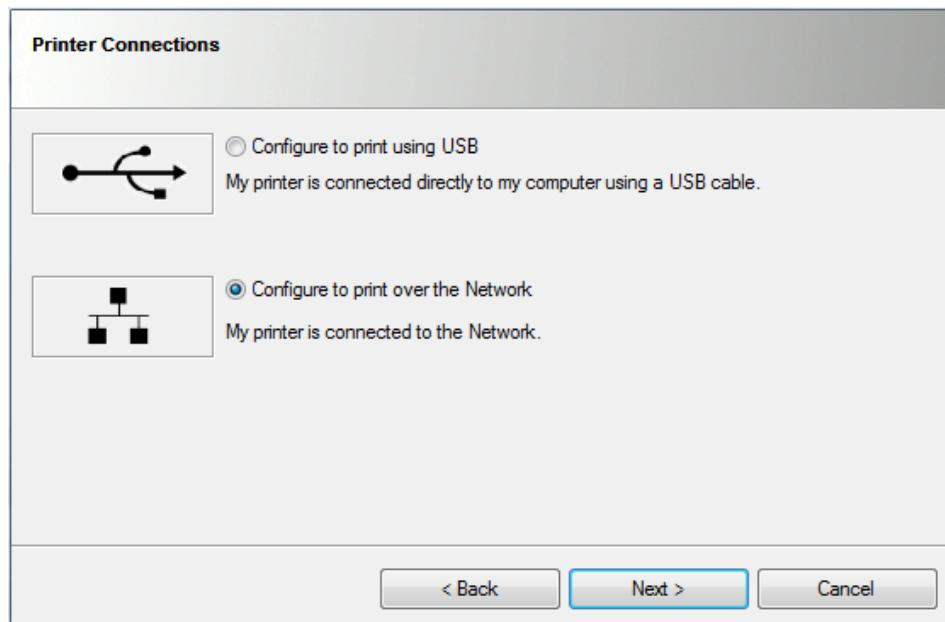


- Select 'I accept the terms in the license agreement' checkbox and press 'Next' button to continue

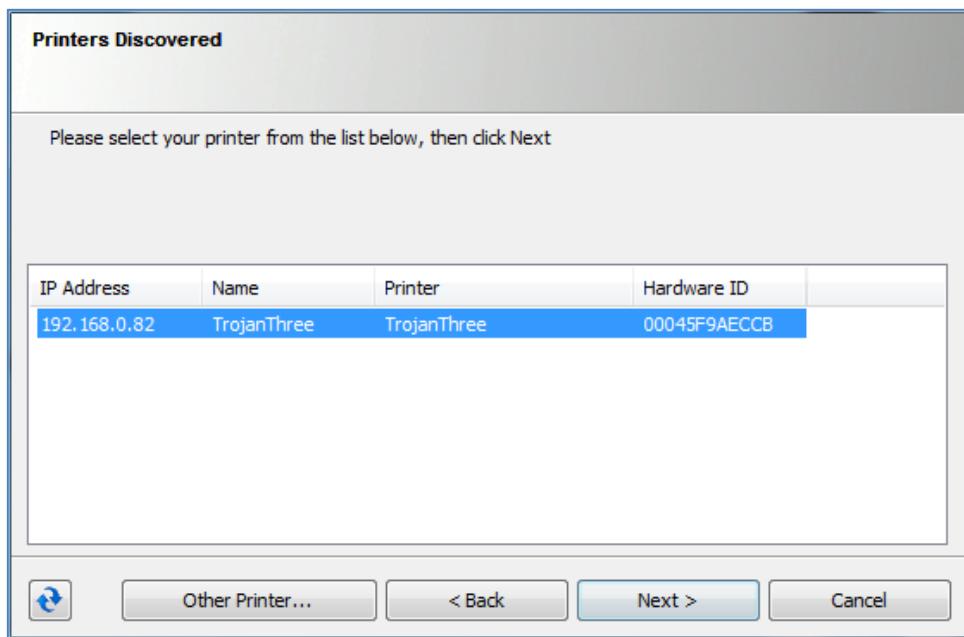


- Select '**Configure to print over the Network**'

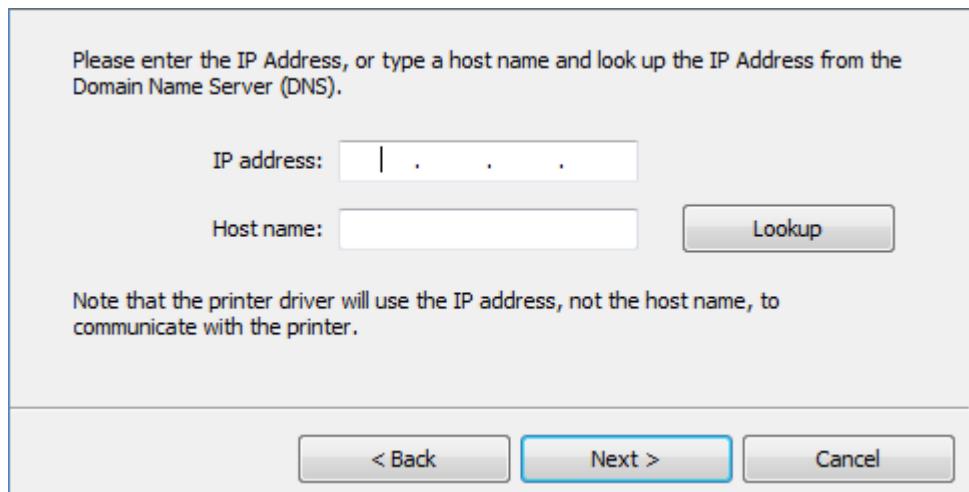
NOTE: USB printing is not supported for the TrojanThree.



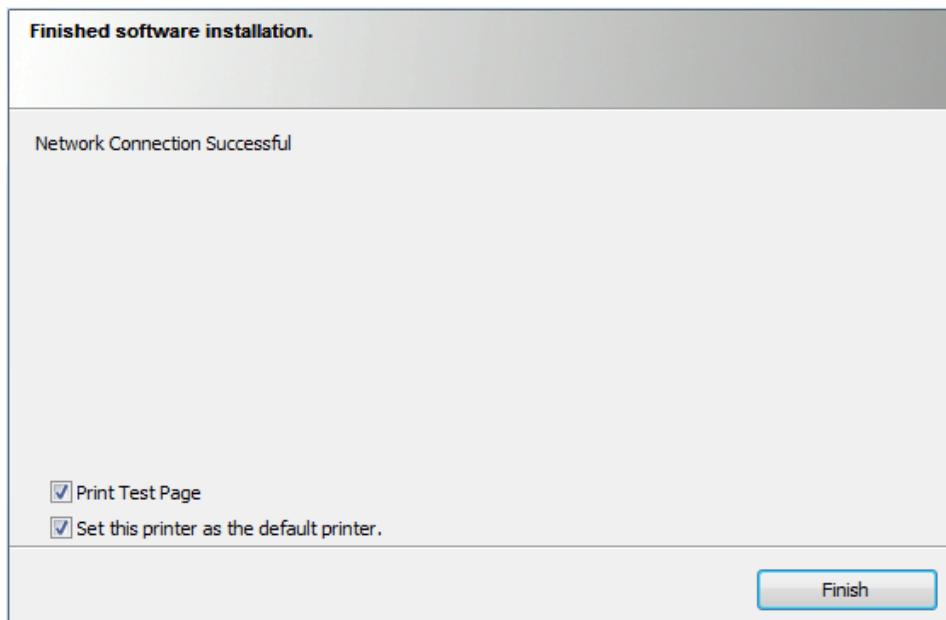
- During the setup process, the installer will detect the TrojanThree printer(s) on the network. Select the desired TrojanThree and press '**Next**' button to continue installation.



- Depending on Local Network policy there might be occasions when the auto detection of the TrojanThree is not working. This case type the IP address of the TrojanThree manually.
- NOTE:** Current IP address of the TrojanThree printer can be checked on the touch screen at **HOME -> Settings... -> Network** menu.

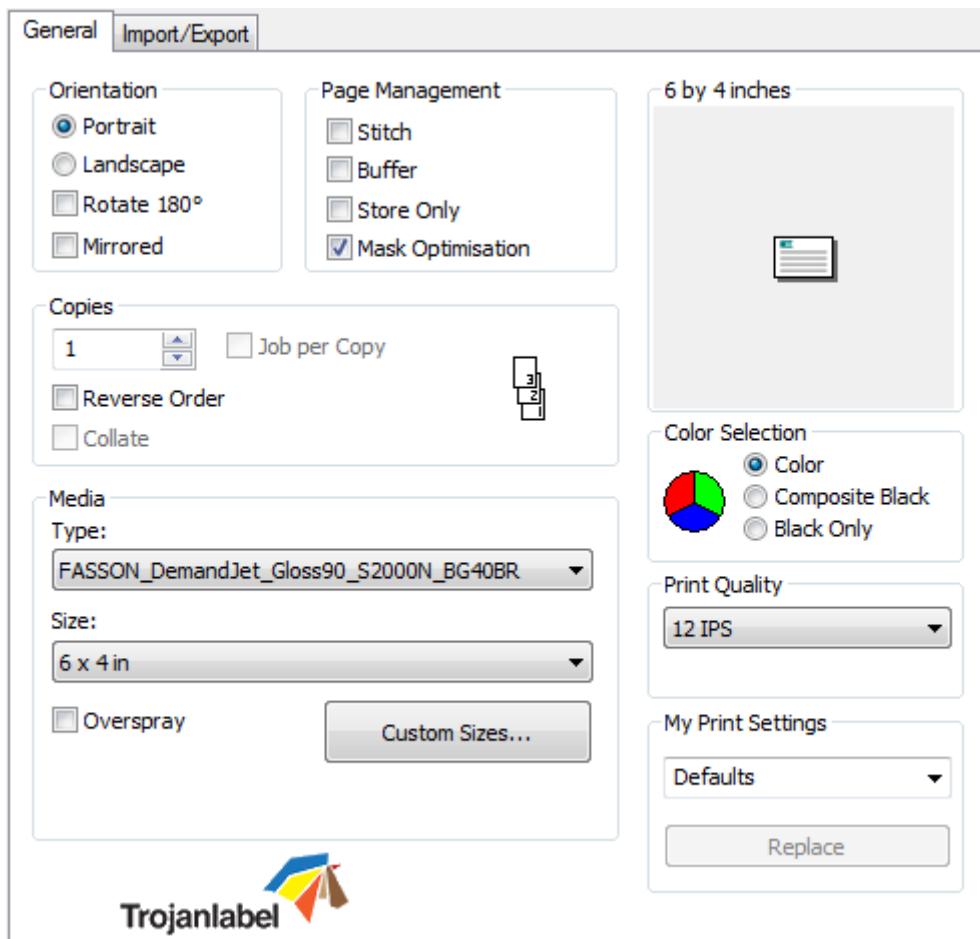


- You might be asked a couple of times (depending on Microsoft Windows OS version) to give permission to proceed with setup. Press 'Yes' or 'Unblock' each time and wait until the progress bar finishes the installation.
- When the installation is **finished** you might need to restart your PC to make sure that the installation process made all necessary changes in your operating system.
- Print test page** (test page is the regular Microsoft Windows test page set to A4 size cutsheet). Unselect if you do not want to print this out.



10.2 Driver Features and Functions

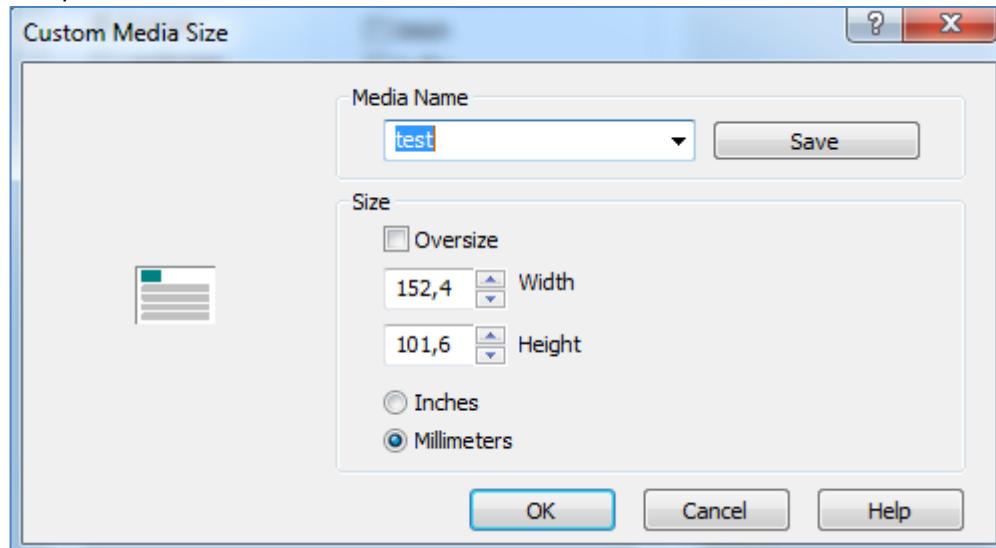
- The driver is compatible with Microsoft Windows XP, Vista, Win7, Win8, Win10 (both 32bit and 64bit versions) operating system versions.
- The TrojanThree printer can print from any software which is able to print from Microsoft Windows environment.
- Handles ICM color profiles (provided by Trojanlabel).
- General driver settings:**



- 👉 **Orientation:** Adopts software settings (like Adobe Reader)
- 👉 **Copies:** Number of copies times the number of labels in actual print job
- 👉 **My Print Settings:** Can create and load profiles from settings

Media:

- **Type:** List of available color profiles (5 profiles by default)
- **Size:** predefined size from the list or custom size



- **Media Name:**
Save custom size into the profile list
- **Oversize:**
Full bleed printing = oversizing the image by 1mm over the edges when printed.
Aspect ratio is locked
- **Overspray:** Overspray printed image over the label size by 0.5mm. Does not preserve aspect ratio.

Color Selection:

- **Color mode** (uses CMYK ink to mix out colors on labels)
- **Composite Black** (uses CMYK to mix out black color on labels)
- **Black Only** (uses only black ink for printing black color on labels)

Print speed:

- **6 IPS** (max. resolution 1600 x 1600 dpi) ~ 9 meters / minute
- **12 IPS** (max. resolution 1600 x 800 dpi) ~ 18 meters / minute

Page Management:

- **Stitching:** Stitching images together make one continuous image. This mode is for exceeding the maximum printable label length which is 762mm.

TIPS&TRICKS: The maximum printable label length is 762mm. If 762mm label height is not enough, then **stitching** is the workaround option. In practice, create a multipage PDF where the long image is cut into pieces. This way if stitching option is on, the TrojanThree printer will stick all images from the multipage PDF together and print it out as one continuous image without gaps between pages.

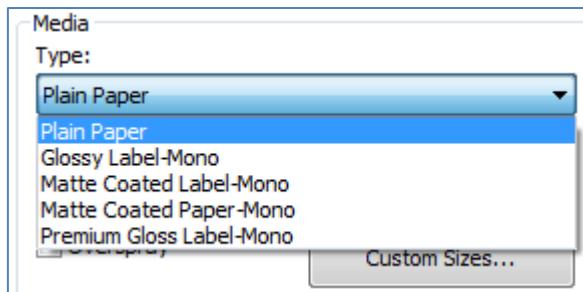
NOTE: PAUSING a stitched print job is only possible at the mid job maintenance interval (defined in TrojanThree -> Media Settings -> Advanced menu). The reason for this is because the stitch mode job counts as 1 page for the firmware and normal pause is only possible between 2 pages. We developed a workaround for this.

- **Buffer:** Buffering the whole print job into the user PC's memory before sending it to the TrojanThree printer. This can be useful when the hardware of the user PC (where the driver is installed) is not powerful enough to generate the print stream in real time. Especially for large print jobs with variable data.
- **Store only:** Sending and storing the selected print job into the TrojanThree job library without actually printing. The stored job can be printed out later from the Job Library menu at the TrojanThree touch screen.
- **Mask Optimization:** Mask Optimization is a facility that switches between two different methods of image processing, affecting how an image is processed and printed. By default, Mask Optimization is selected to make sure that it optimizes the image processing for the majority of the printing applications used by the end users. However, for some users (particularly those using FlexMail), printing artefacts appear in the output. If this happens, the user should deselect 'Mask Optimization' to correct this issue.

10.3 Using Color Profiles

Using ICC Color profiles are the way how we ensure to spray the right amount of ink for the certain label material. In the ideal case there should be color profiling made for each type of label material. But color profiling is a time demanding process and also requires skills and equipment.

Therefore by default there are 5 color profiles available with installing the driver. These profiles work well with most of the media types. However in cases where the default profiles cannot produce the acceptable colors and quality, there are additional color profiles which can be downloaded from Trojanlabel extranet site. Also Trojanlabel is doing color profiling on demand if requested.



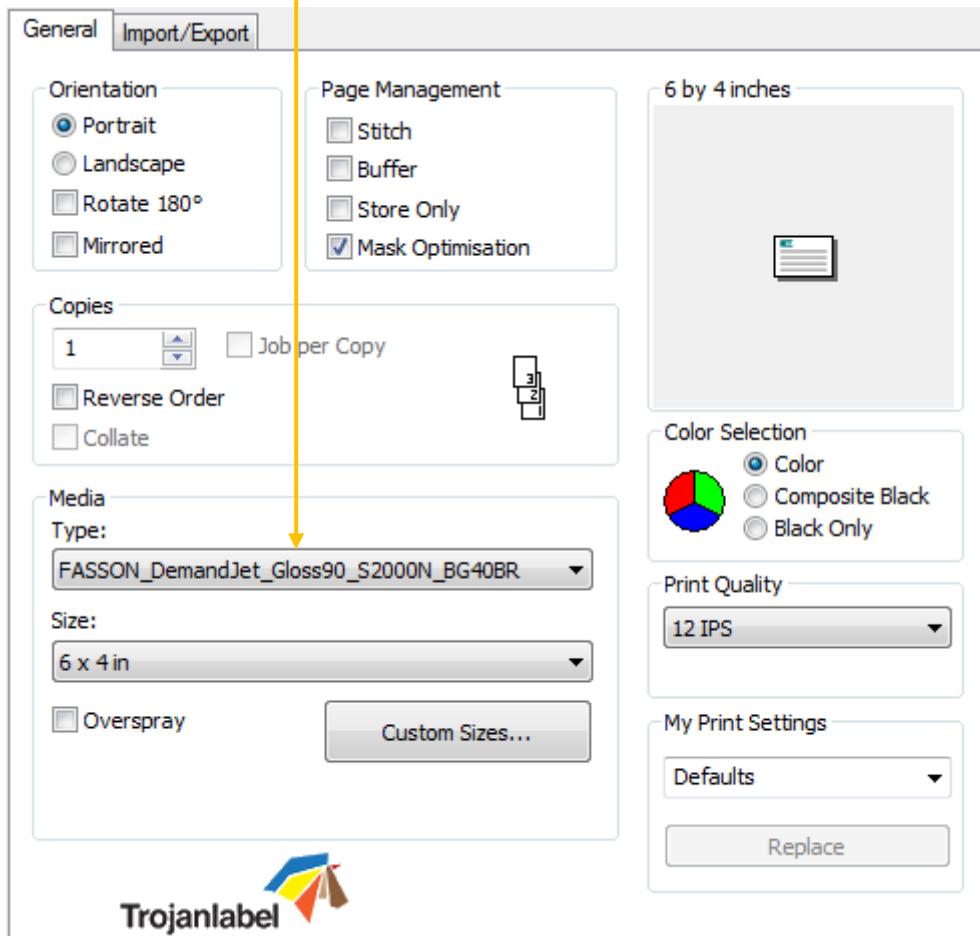
Default color profiles in TrojanThree driver

- Integrating additional color profiles
 - Color profiling is done on demand by Trojanlabel
 - Color profile installer packages are available at official Trojanlabel distributors or from Trojanlabel extranet (login can be requested at www.trojanlabel.com)
 - Copy the installed color profile package to the user PC where the TrojanThree driver is installed and run the self-executable installer

- **Installing additional color profiles:**

 TrojanLabel_TrojanTwo_FAFFON_DemandJet_Gloss90(S2000N-BG40BR)	exe
 TrojanLabel_TrojanTwo_FAFFON_DemandJet_Matt(S2000N-BG40BR)	exe

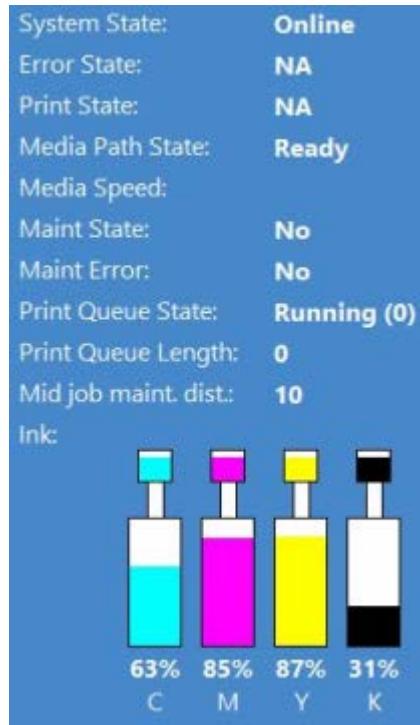
Download and install executable package.



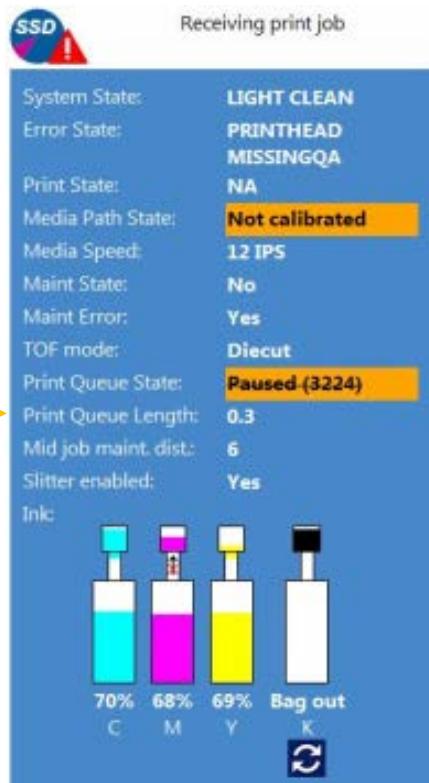
Installed color profiles are available in media type list after installation.

11 Software Features

11.1 Status Bar



Status bar



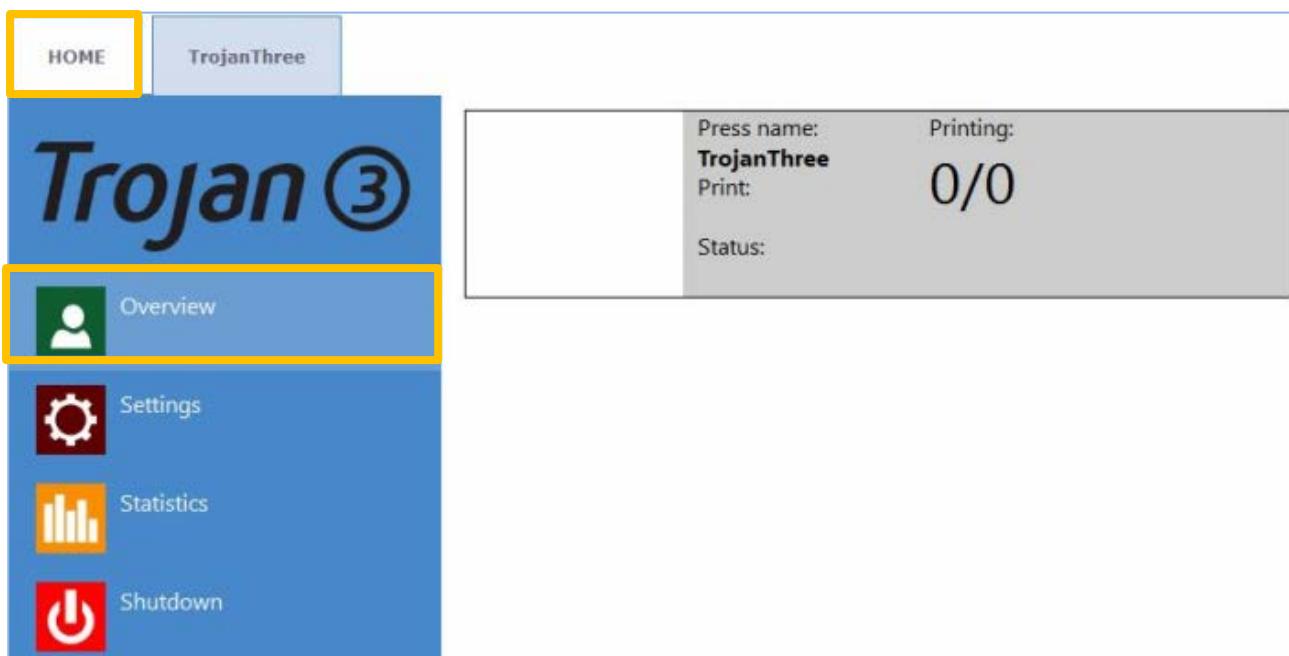
Status bar changes on events

- **System State:**
 - Online – ready for printing
 - Job Available – print job is in the print queue
 - Paused - print job is paused
 - Error - shows error state and message
- **Error State:** shows if error state occurs
- **Print State:** shows if machine in printing
- **Media Path State:** status of media path
 - Ready – ready for printing
 - Not Calibrated – media path speed is not proper or encoder signal is lost
 - Error – shows error code (see section 14. for error codes)
- **Media Speed:** 6 IPS or 12 IPS
- **Maint state:** shows status of maintenance
- **Maint Error:** shows error status
- **TOF mode (LP version only):** shows actual printing mode
 (See section 8. for available printing modes)

- **Print Queue State:** Running or Paused and number of print jobs in queue
- **Print Queue Length:** total length of print job(s) in the actual print queue. Displayed in meters at LP version and displayed in number of pages at OP version.
- **Mid job maint. dist.:** after how many linear meters does the TrojanThree perform a mid-job maintenance. Value can be set at TrojanThree -> Media Settings -> Advanced menu
- **Ink status:** shows ink levels in ink tanks and reservoir ink tanks, also shows process when ink is transferred from the ink tanks to the reservoir tanks

11.2 General Settings (HOME menu)

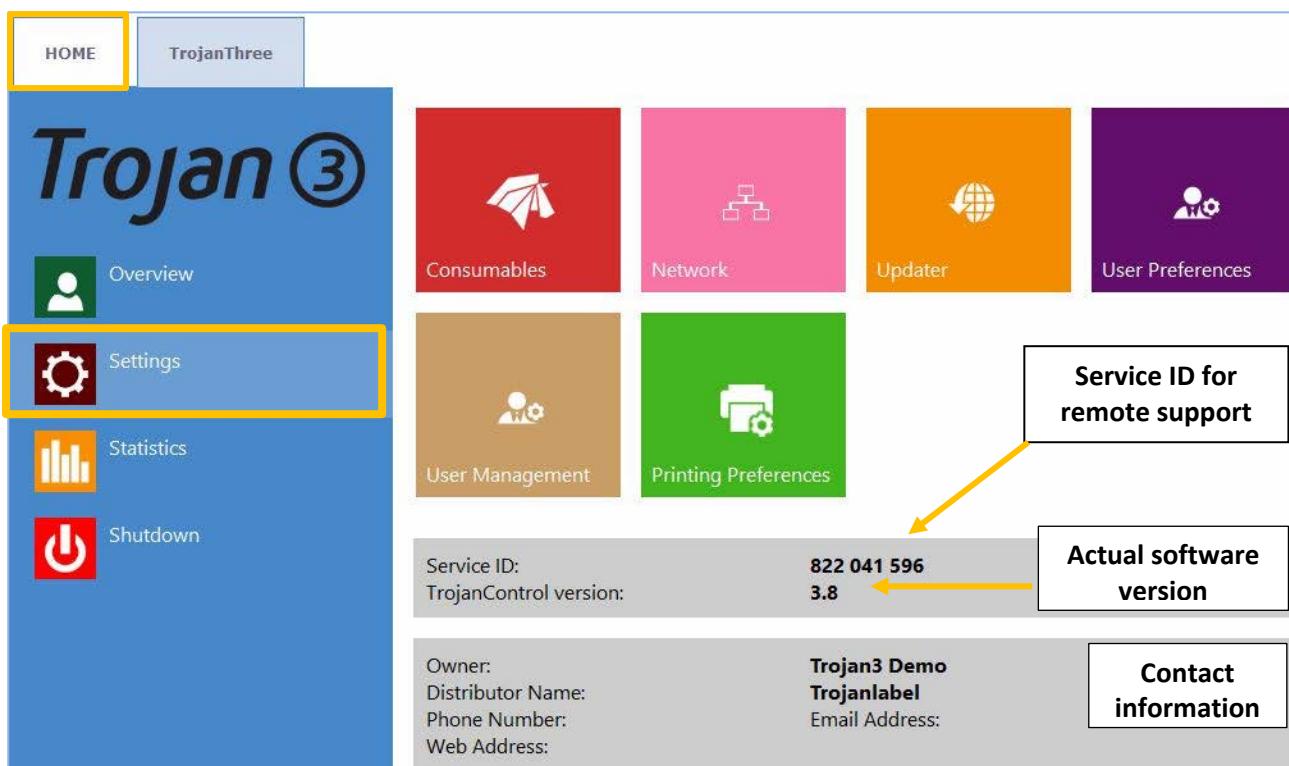
11.2.1 Overview



Overview menu

- Information from currently printed job, including:
 - Preview image of the label which is being printed at the moment
 - Label counter
 - Name of print job in job library

11.2.2 Settings



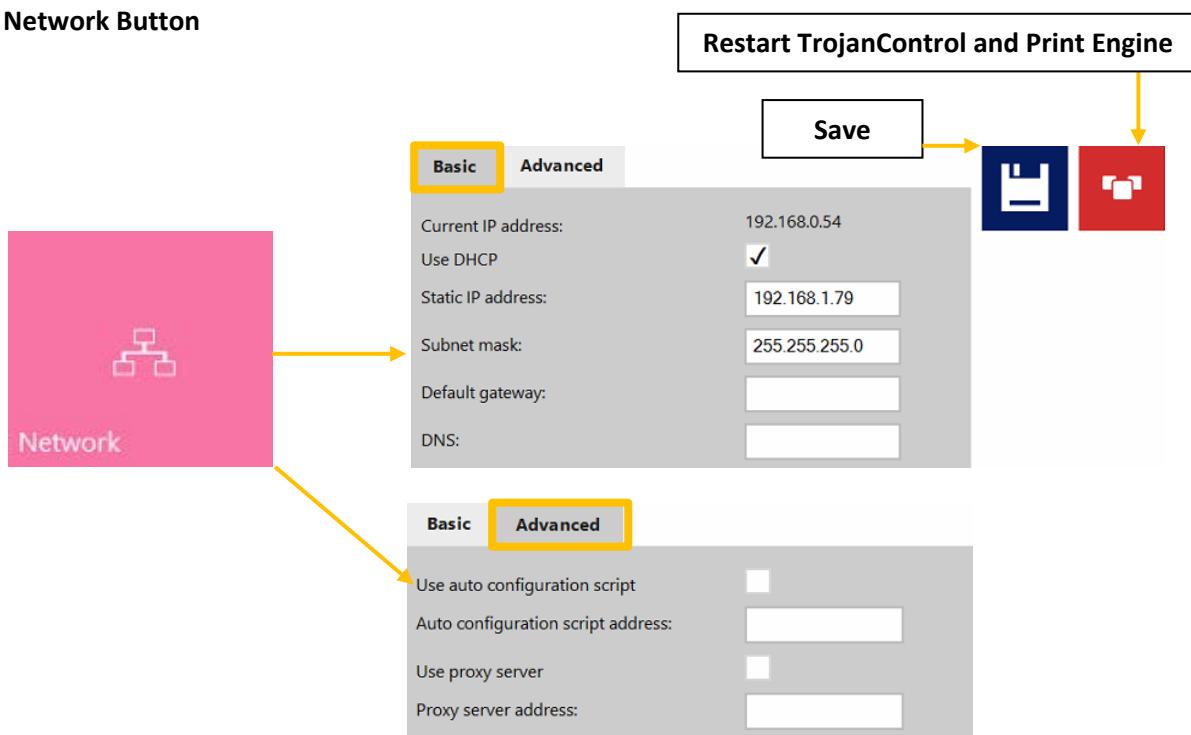
- Service ID is a unique ID for each TrojanThree printer. Based on the service ID, Trojanlabel support team can access to the TrojanControl via the internet from remote and provide support.
- Actual software version number of the TrojanControl interface (GUI).
- **Trojanlabel or the local Trojanlabel distributor fills out the owner and distributor contact information field at installation. This field is not editable for users.**

 **Consumables Button:**



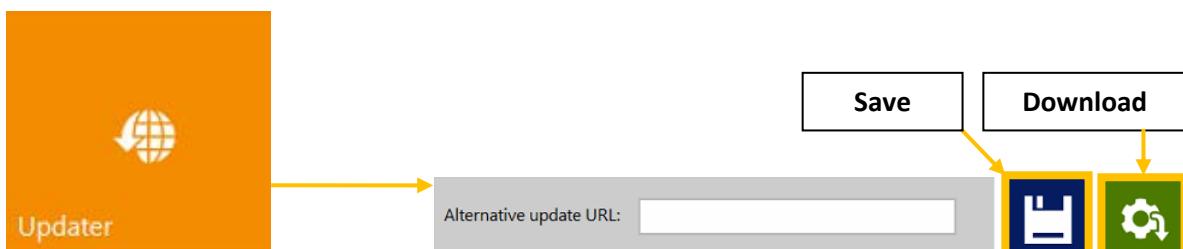
- **Ink cartridge price** is the base of ink cost/label calculation in statistics menu (see section 11.2.3). The actual price of a 2 Liters ink tank should be typed here.
- **Print head price** when filled up also included in cost/label calculation in statistics menu (see section 11.2.3).
- **Print head life time** is theoretical value which can be included in cost/label calculation as well. The value entered here represents the printed ink volume until a planned print head change. Example: planning to print 6000 ml ink with the currently installed printhead.
- Every time you change a setting use the **Save button** to save the changes.

◀ Network Button



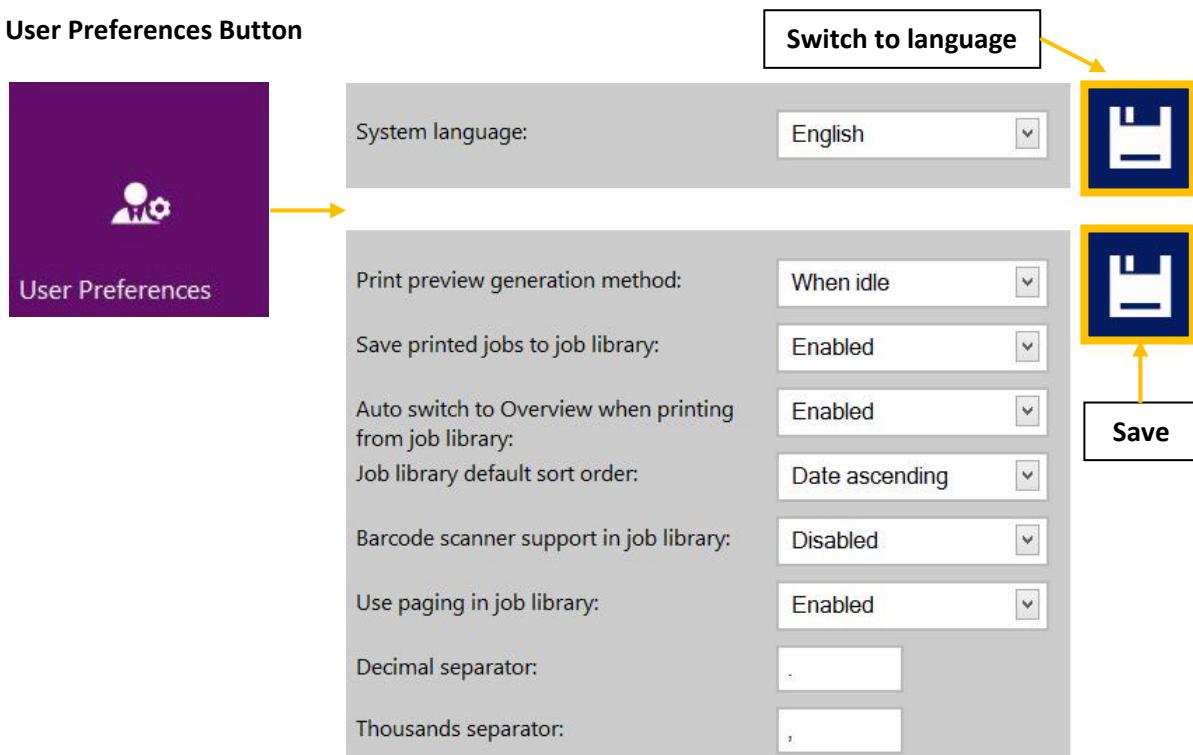
- Select '**Use DHCP**' checkbox to acquire IP address for the TrojanThree printer from the local network (as long as DHCP mode is selected TrojanThree printer ignores static IP settings).
- **Current IP address** field displays the current IP address of the TrojanThree on the local network.
- Uncheck '**Use DHCP**' checkbox when local network policy recommends using static IP address.
- '**Restart TrojanControl and Print Engine**' button is for re-initializing all TrojanControl interface.
NOTE: Use only if user interface becomes unresponsive to restart print engine and software.
- **Advanced tab:** enables usage of **Auto configuration scripts** or **Proxy Server** wherever the local network policy requires these for network/internet connection.
- Every time you change a setting use the **Save button** to save the changes.

◀ Updater Button



- By default for system updates the '**Alternative update URL**' field has to be empty (see section 12 for update process via auto updater or via Alternative update URL for offline updating).
- Press download button to download updates (each time when a new update is available a newsletter is released by Trojanlabel).
- Every time you change a setting use the **Save button** to save the changes.

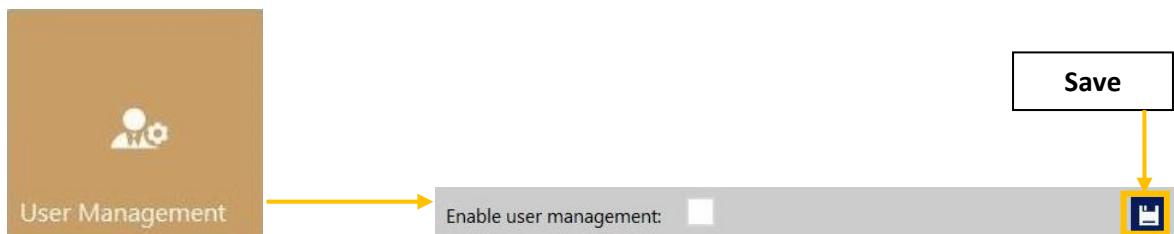
User Preferences Button



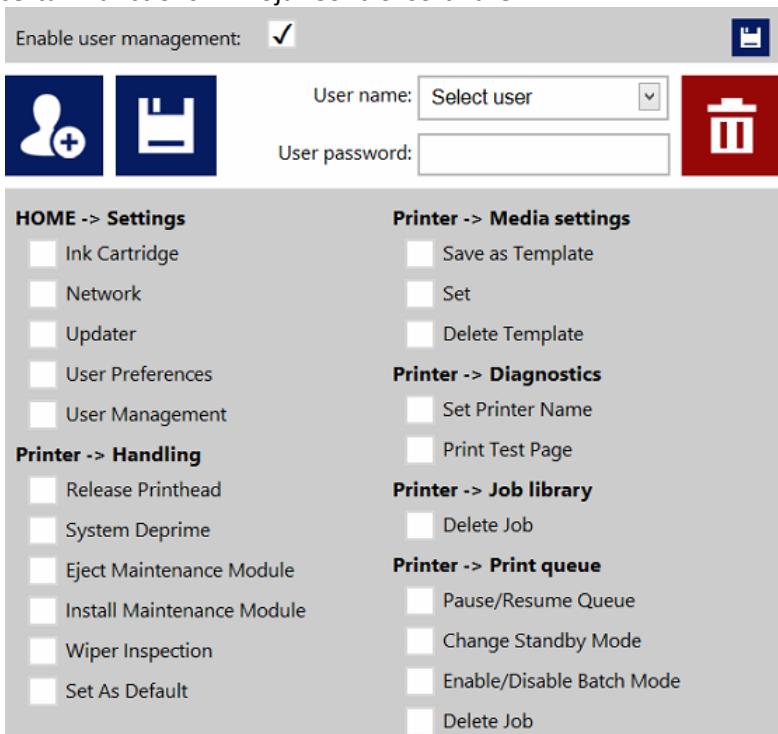
- **System language:** desired language from the list. Press Save button to switch into the selected language.
- **Print preview generation method:**
 - When idle (default):** creates one preview thumbnail image from the first image in the actual print job when print job arrives, then job is printed out. Previews for subsequent labels are created later in the background when system is in idle state.
 - Instantly:** creates preview images from the first 100 images in the actual print job on when print job arrives, then sends job to print when finished with image creation.
 - Never:** no preview.

The preview is available in the **Job Library** (see section 11.3.3) or in real time in overview menu.
- **Save printed jobs to job library:**
 - Enabled:** The print job is stored and available for reprinting in the job library.
 - Disabled:** The printed jobs are not stored in the job library, however jobs that already been in the library will remain and be available for printing.
- **Auto switch to Overview when printing from job library:**
 - Enabled:** When printing from the job library the screen switches to overview mode.
 - Disabled:** When printing from the job library the screen remains in job library view.
- **Barcode scanner support in job library:** enabled/disabled.
When barcode scanner support is enabled, the search filter in Job Library menu (see section 11.3.3) will be active and only accepts input from a connected Barcode scanner (the virtual keyboard is disabled on screen) when searching for job names.
- **NOTE:** Rename print jobs to match with barcode input to make this function work.
- **Use paging in job library:**
 - Enabled:** Enables paging with finger swipe and with scroll bar in Job Library.
 - Disabled:** Disables swiping and scroll bar in Job Library.
- **Decimal separator:** User can define separator for displaying decimals in the user interface.
- **Thousands separator:** User can define separator for displaying thousands in the user interface.

User Management button



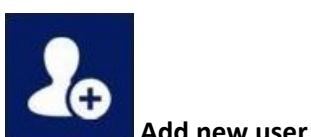
- By default user management is not enabled, every function of the TrojanThree printer is accessible without user authentication.
- Once User Management is enabled (press save button to enable) authentication is required for accessing specific functions in TrojanControl. A user with 'User Management' rights (like the built in 'admin' user) can create user accounts and can assign rights for each user to access certain functions in TrojanControl software.



The screenshot shows the TrojanControl software interface. At the top, there is a toolbar with icons for User Management (blue), Save (blue), and Delete (red). Below the toolbar, the "Enable user management:" checkbox is checked. To the right of the checkbox are three buttons: a blue "Select user" dropdown, a blue "Save" icon, and a red "Delete" icon. The main area contains a list of functions grouped by category, each with a checkbox:

- HOME -> Settings**
 - Ink Cartridge
 - Network
 - Updater
 - User Preferences
 - User Management
- Printer -> Media settings**
 - Save as Template
 - Set
 - Delete Template
- Printer -> Diagnostics**
 - Set Printer Name
 - Print Test Page
- Printer -> Job library**
 - Delete Job
- Printer -> Print queue**
 - Pause/Resume Queue
 - Change Standby Mode
 - Enable/Disable Batch Mode
 - Delete Job

A yellow box labeled "Assign/change access rights to menus and functions" has an arrow pointing to the "User Management" checkbox in the top toolbar. Another yellow box labeled "SU" with a left arrow icon is positioned above the "Log out" button.



NOTE: Passwords can only contain numeric characters (only numbers). The default password for the **admin** user is **123**. It is advised to change the admin password during installation.

WARNING: **Do not lock out yourself!** At least one user must have 'User Management' right otherwise there is no way to add or change properties of other users. In case you end up locked out please contact Trojanlabel support who can restore the default user settings.

🖨 Printing preferences button



Default print queue state:	Running
Default batch mode:	Off
Default batch mode timeout (seconds):	180
Instant print (before job sending finished):	Disabled
Instant printing buffer size (seconds):	60
Pre job maintenance:	Enabled
Mid job maintenance:	Disabled
Post job maintenance:	Disabled
Startup maintenance:	Disabled
Shutdown maintenance:	Disabled



- **Default print queue state:**

Running: (Default) Print jobs are queued progressively as they sent and processed in FIFO (first in first out) system. The queue can be managed from Print queue menu (see section 11.3.4).

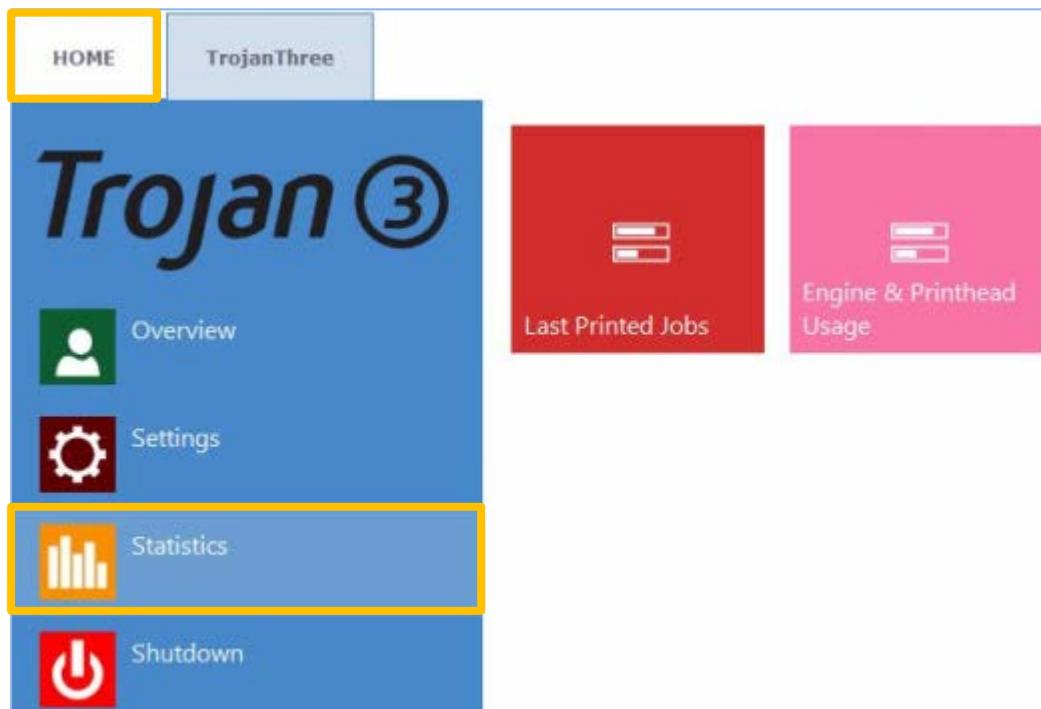
Paused: Paused print job queuing.
- **Default batch mode:**

NOTE: **Batch mode** means that the TrojanThree printer is waiting for a certain period of time and batches the print jobs sent during the batch mode timeout. Batched print jobs are merged into 1 print job and printed out at once. Batched print jobs show up as 1 print job in statistics.

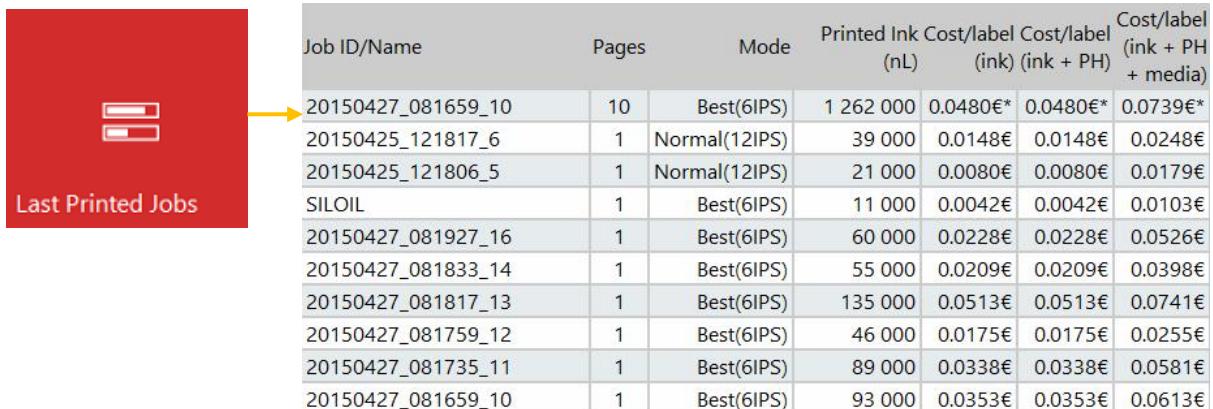
Off: (default) Batch mode is switched off by default.

On: Batch mode is on.
- **Default batch mode timeout (seconds):** If batch mode is on, the printer is waiting for the print jobs to be sent until the timeout interval expires. All print jobs sent during this timeout period will be merged into 1 print job and printed out at once when timeout expires.
- **Instant print and buffer size:** enabled/disabled
When enabled the printing starts right after buffering X seconds of print stream.
- **Pre job maintenance:** enabled/disabled
When disabled there is no print head maintenance prior print jobs.
- **Mid job maintenance:** enabled/disabled
When disabled there is no print head maintenance during print jobs.
- **Post job maintenance:** enabled/disabled
When disabled there is no print head maintenance after print jobs.
- **Startup maintenance:** enabled/disabled
When disabled there is no print head maintenance when the machine starts.
- **Shutdown maintenance:** enabled/disabled
When disabled there is no print head maintenance when the machine is shutting down.

11.2.3 Statistics



☛ **Last Printed Jobs button:**



The screenshot shows a table titled 'Last Printed Jobs' with a red background. An orange arrow points from the 'Last Printed Jobs' button in the main menu to the table. The table has columns for Job ID/Name, Pages, Mode, Printed Ink Cost/label (nL), Cost/label (ink), Cost/label (ink + PH), and Cost/label (ink + PH + media). The data is as follows:

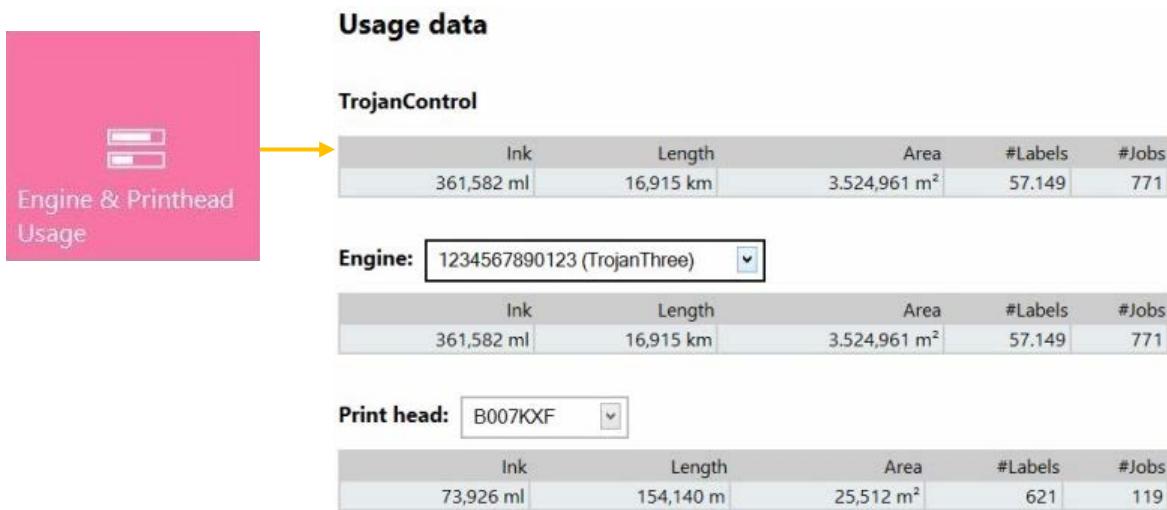
Job ID/Name	Pages	Mode	Printed Ink Cost/label (nL)	Cost/label (ink)	Cost/label (ink + PH)	Cost/label (ink + PH + media)
20150427_081659_10	10	Best(6IPS)	1 262 000	0.0480€*	0.0480€*	0.0739€*
20150425_121817_6	1	Normal(12IPS)	39 000	0.0148€	0.0148€	0.0248€
20150425_121806_5	1	Normal(12IPS)	21 000	0.0080€	0.0080€	0.0179€
SILOIL	1	Best(6IPS)	11 000	0.0042€	0.0042€	0.0103€
20150427_081927_16	1	Best(6IPS)	60 000	0.0228€	0.0228€	0.0526€
20150427_081833_14	1	Best(6IPS)	55 000	0.0209€	0.0209€	0.0398€
20150427_081817_13	1	Best(6IPS)	135 000	0.0513€	0.0513€	0.0741€
20150427_081759_12	1	Best(6IPS)	46 000	0.0175€	0.0175€	0.0255€
20150427_081735_11	1	Best(6IPS)	89 000	0.0338€	0.0338€	0.0581€
20150427_081659_10	1	Best(6IPS)	93 000	0.0353€	0.0353€	0.0613€

- Statistics list for the last 30 printed jobs (contains: number of pages, print speed, ink consumption, ink cost/label calculation, ink + print head cost/label, ink + media + print head cost/label calculation)
- **Cost/label (ink only) calculation** is the cost/1 label or page in the actual print job based on ink tank price given at HOME -> Settings -> Consumables menu.
- **Cost/label (ink + PH) calculation** is the cost/1 label or page in the actual print job based on ink tank price and print head price given at HOME -> Settings -> Consumables menu. Print head cost is added.

- **Cost/label (ink + PH + media) calculation** is the cost/1 label or page in the actual print job based on ink tank price and print head price given at HOME -> Settings -> Consumables menu and in addition media price given at TrojanThree -> Media settings menu (See section 11.3.6, m² price for continuous material and unit or label price for packaging material and diecut or blackmarked material).
- **Job ID/Name** is the name of the actual print job in the job library (unique name can be specified instead of random numbers in job library, see section 11.3.3 for details).

NOTE: Prices marked by * contain estimated cost of maintenances as well (pre-, mid-, post job maintenance). Prices without * mark are pure printing cost of 1 label without maintenance cost added (see section 11.3.3 for printing samples without maintenance)

☛ **Engine & Printhead Usage button:**



TrojanControl					
Ink	Length	Area	#Labels	#Jobs	
361,582 ml	16,915 km	3.524,961 m ²	57.149	771	

Engine: 1234567890123 (TrojanThree)					
Ink	Length	Area	#Labels	#Jobs	
361,582 ml	16,915 km	3.524,961 m ²	57.149	771	

Print head: B007KXF					
Ink	Length	Area	#Labels	#Jobs	
73,926 ml	154,140 m	25,512 m ²	621	119	

- **TrojanControl:** Total statistics for the TrojanThree printer for ink usage, printed length, printed area, number of labels and printed jobs.
- **Engine:** Total statistics and history for print engine(s). If there is a print engine replacement, all serial numbers will be registered and statistics for each print engine can be compared.
- **Print head:** Total statistics and history for all the printheads which have been connected to the Trojan Three printer. All connected printhead serial numbers will be registered and statistics for each printhead can be compared.

NOTE: A printhead must print at least 1 page to be able to register the usage statistics. A freshly installed printhead that has not printed any pages at the certain TrojanThree printer is displayed as an empty record.

NOTE: Printhead usage data is the total usage in the particular TrojanThree printer. Does not include usage history on usage data from other TrojanThree printers if the particular printhead has been used in multiple TrojanThree printers.

11.2.4 View Statistics in Browser and Exporting Statistics to CSV file format

Statistics data from HOME -> Statistics menu can be exported and saved into a CSV file from a user PC which is connected to the same network as the TrojanThree.

- Actual IP address of the TrojanThree printer can be set or acquired at HOME -> Settings -> Network menu (see section 11.2.2 for network settings)



Current IP address displayed at HOME -> Settings -> Network menu

NOTE: IP address on screenshot above is an example only. Actual IP address is local network dependent and can always be checked at HOME -> Settings -> Network menu

- Type the actual IP address of the TrojanThree printer into a browser at a user PC:

Type actual IP address here

localhost: TrojanControl/index.php?r=jobinfo

Export to CSV

Job ID	Name	Job State	Pages	Image Width	Image Height	Resolution	Print Head SN	Engine SN	Ink C	Ink M	Ink Y	Ink K	Printed Ink (ml.)	Print Mode	Print Date	KWS	Tor mode	Unit Cost	Maint ink included	Costlabel (ml.)	Costlabel (ml + PH)	Costlabel (ml + PH + media)
A	job with name	Printed	200	2656	2677	800	B00548V	MY364MR00005	517000	609000	1739000	398000	3261000	Best (6 IPS)	2014-10-22 23:36:53	Default	Continuous	0	Yes	0.0049	0.0071	0.0071
20141023_003247_3		Printed	20	2656	2677	800	B00548V	MY364MR00005	51000	60000	173000	39000	323000	Best (6 IPS)	2014-10-22 23:34:13	Default	Continuous	0	No	0.0048	0.0070	0.0070
20141023_003247_3		Printed	1	2656	2677	800	B00548V	MY364MR00005	2000	3000	8000	1000	14000	Best (6 IPS)	2014-10-22 23:33:06	Default	Continuous	0	No	0.0042	0.0061	0.0061
20130201_195502_1		Printed	1	3808	2709	800	B00548V	MY364MR00005	0	2000	2000	3000	7000	Best (6 IPS)	2014-10-06 19:15:20	Default	Continuous	0	No	0.0021	0.0030	0.0030
20130201_195502_1		Printed	4	3808	2709	800	B00548V	MY364MR00005	1000	7000	6000	11000	8000	Best (6 IPS)	2014-10-06 19:15:37	Default	Continuous	0	Yes	0.0008	0.0009	0.0009
20141003_191159_1		Printed	10	5824	3150	800	B00548V	MY364MR00005	132000	65000	356000	42000	595000	Normal (12 IPS)	2014-10-06 14:59:06	Default	Continuous	0	No	0.0179	0.0258	0.0258
20141003_181942_2		Printed	10	3136	3150	800	B00548V	MY364MR00005	20000	57000	63000	10000	170000	Normal (12 IPS)	2014-10-06 14:44:26	Default	Continuous	0	No	0.0051	0.0074	0.0074
20140909_065749_16		Printed	10	6464	4283	800	B00548V	MY364MR00005	82000	154000	188000	125000	540000	Best (6 IPS)	2014-10-06 14:41:02	Default	Continuous	0	No	0.0185	0.0238	0.0238
20140909_065749_16		Printed	3	6464	4283	800	B00548V	MY364MR00005	24000	46000	56000	37000	163000	Best (6 IPS)	2014-10-06 14:40:39	Default	Continuous	0	No	0.0163	0.0235	0.0235
20141003_191159_1		Printed	5	5824	3150	800	B00548M	MY364MR00005	65000	32000	178000	21000	297000	Normal (12 IPS)	2014-10-03 18:15:14	Default	Continuous	0	No	0.0178	0.0257	0.0257
20141003_191159_1		Printed	1	5824	3150	800	B00548M	MY364MR00005	13000	5000	35000	4000	58000	Normal (12 IPS)	2014-10-03 18:12:21	Default	Continuous	0	No	0.0174	0.0251	0.0251
20141003_190805_0		Printed	1	3136	3150	800	B00548M	MY364MR00005	2000	5000	8000	1000	17000	Normal (12 IPS)	2014-10-03 18:08:25	Default	Continuous	0	No	0.0051	0.0074	0.0074
20141003_181942_2		Printed	30	3136	3150	800	B00548M	MY364MR00005	62000	171000	249000	32000	514000	Normal (12 IPS)	2014-10-03 17:57:39	Default	Continuous	0	No	0.0051	0.0074	0.0074
20141003_174346_0		Printed	10	2784	4243	800	B00548M	MY364MR00005	29000	53000	89000	20000	181000	Normal (12 IPS)	2014-10-03 17:55:41	Default	Continuous	0	No	0.0057	0.0083	0.0083
20141003_183142_3		Printed	10	4256	1890	800	B00548M	MY364MR00005	29000	53000	89000	20000	181000	Normal (12 IPS)	2014-10-03 17:55:20	Default	Continuous	0	No	0.0057	0.0083	0.0083

Exporting statistics page

- Press 'Export to CSV' button on page to save the statistics into a CSV file.

TrojanControl - Printjob history

You may optionally enter a comparison operator (<, <=, >, >=, <> or =) at the beginning of each of your search values to specify how the comparison should be done.

Job ID/Name	Job State	Pages	Image Width	Image Height	Resolution	Print Head SN	Engine SN	Ink C	Ink M	Ink Y	Ink K
A job with name	Printed	200	2656	2677	800	B00548V	MY364MR00005	517000	609000	1739000	396000
20141023_003247_3	Printed	20	2656	2677	800	B00548V	MY364MR00005	51000	60000	173000	39000
20141023_003247_3	Printed	1	2656	2677	800	B00548V	MY364MR00005	2000	3000	8000	1000
20130201_195502_1	Printed	1	3808	2709	800	B00548V	MY364MR00005	0	2000	2000	3000
20130201_195502_1	Printed	4	3808	2709	800	B00548V	MY364MR00005	1000	7000	6000	11000

Closer view

NOTE: Ink consumption is more detailed in this view and displayed for each used base color (CMYK) and in total as well.

11.2.5 Shutdown



- Shuts down the TrojanThree printer completely.

NOTE: When shutting down the machine it is advised to wait with turning the power switch off until the shutdown process is finished. There is a message on the display when the shutdown process is initiated to indicate that the shutdown process is still going on.

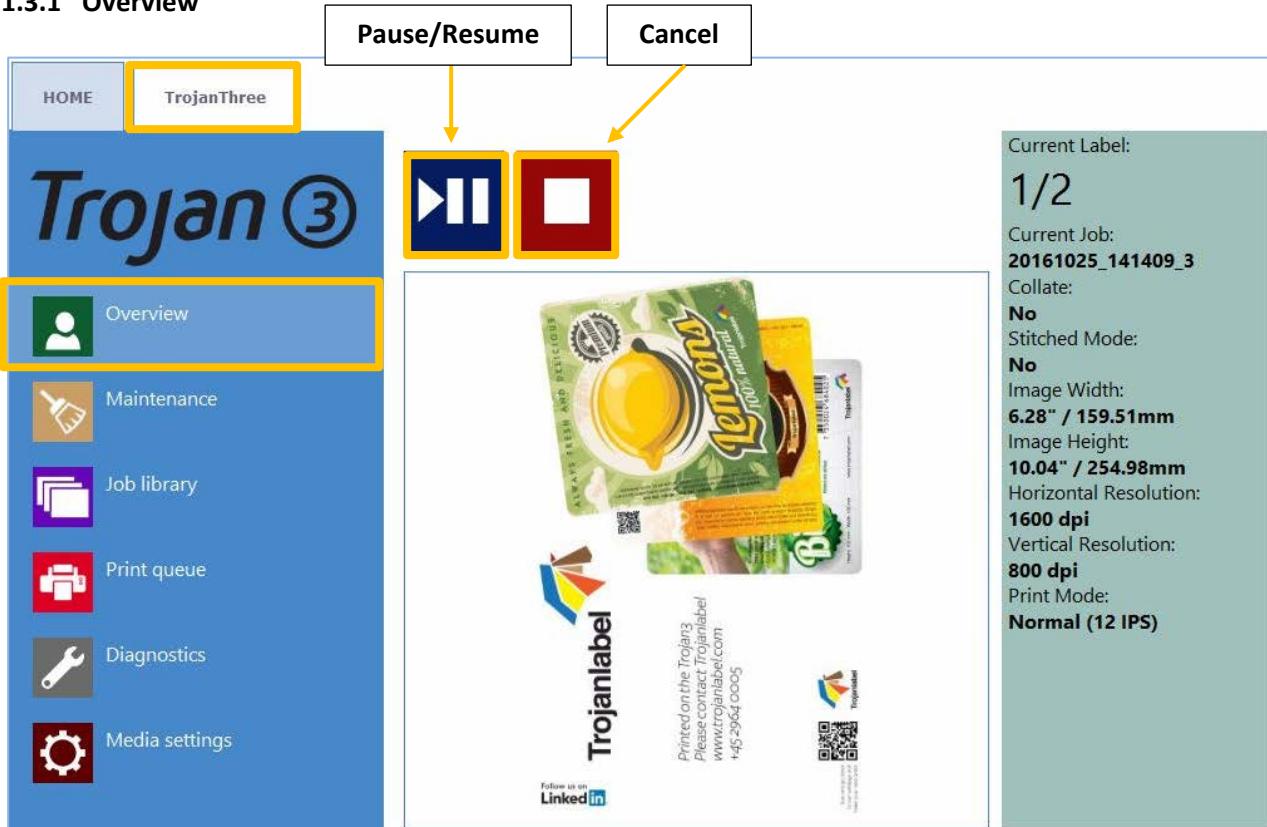
NOTE: When shutdown process is finished (the screen turns blank) it is advised to turn the physical power switch off. The power switch is located at the back of the TrojanThree printer.

CAUTION:

Always wait until shutdown process finishes before shutting down the power supply! Otherwise the Maintenance Module inside the machine might end up in the wrong position and cannot protect the printhead from dehydration. Dehydration of nozzles in the printhead may result in print quality defects. Shutdown process may take 1-2 minutes.

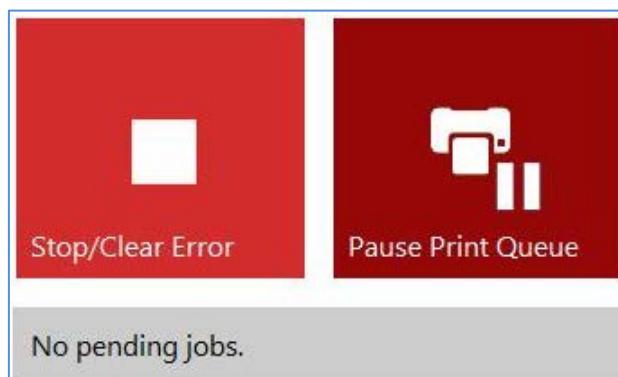
11.3 TrojanThree Handling (TrojanThree tab)

11.3.1 Overview



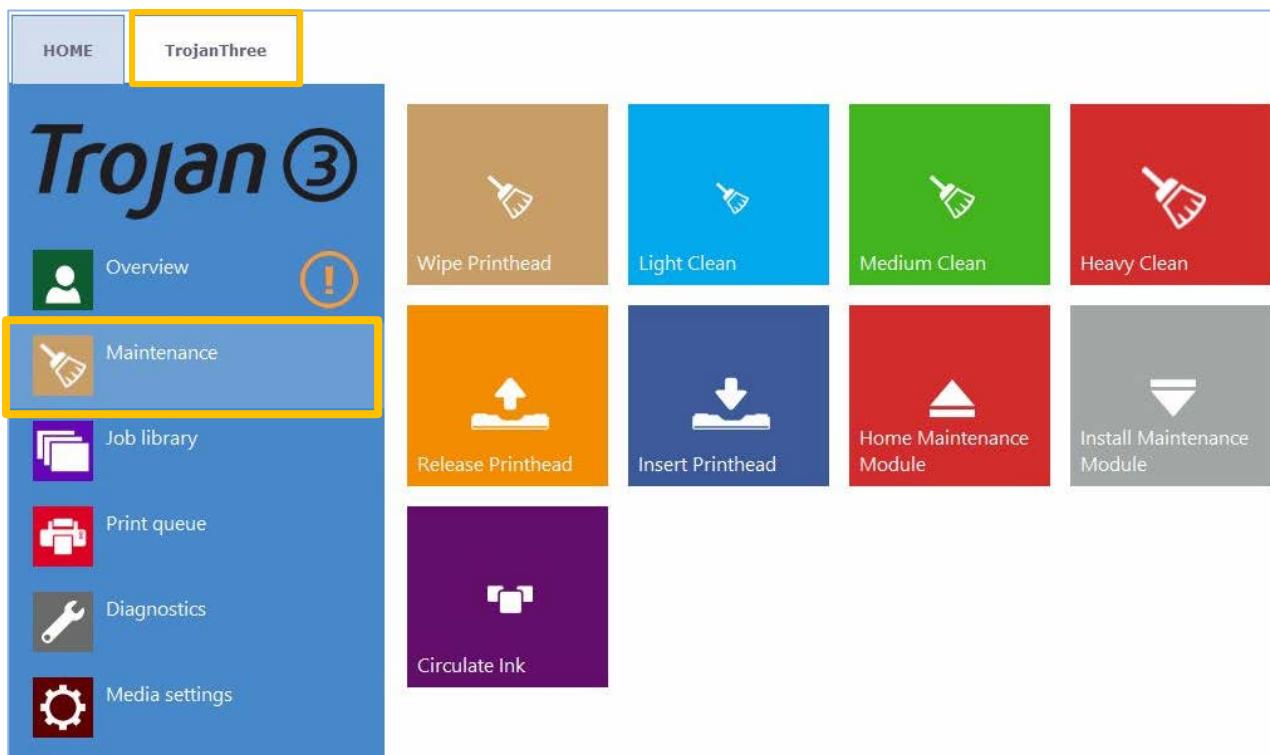
Overview menu when TrojanThree is printing.

- Information from currently printed job, including:
 - Preview image of the label which is being printed at the moment
 - Label counter
 - Name of print job in job library
- Shows Print Queue state and Stop/Clear Error button when machine is in idle mode.



Overview menu when TrojanThree is in idle state (not printing).

11.3.2 Maintenance



Wipe Printhead button

Maintenance module performs printhead wiping 3 times to clean the surface of the printhead.

Light Clean button

Additional maintenance routine for fixing fine streaks and for cleaning printhead surface. Takes about a minute. Can be run multiple times. Advised to use when automatic maintenance routines and ink circulations are not enough.

Medium Clean button

Additional maintenance routine for fixing streaks, spitting ink through the nozzles and for cleaning printhead surface. Takes about 2-3 minutes. More intense form of Light Clean. Advised to use when automatic maintenance routines, ink circulations and Light Cleanings are not enough to recover print quality. Usually when medium clean is needed, it is the sign of the particular printhead is getting aged.

Heavy Clean button

Additional maintenance routine for fixing serious streaks and nozzle dehydration. Heavy cleaning takes about 5 minutes. Only advised to use when Medium clean does not prove to be enough to recover print quality. Heavy cleaning creates significant amount of waste ink as it is doing a heavy pressure prime and heavy spit of ink. Running a heavy clean is only advised when the particularly installed printhead is heavily dehydrated or nearly reached the end of life.

TIP: Rather use 2 medium cleans prior to doing a heavy clean. Heavy clean is for recovering badly dehydrated printheads only, not against small stripes on the printed labels.

☛ **Release Printhead button**

Opens up the printhead latch to be able to install/replace the printhead physically. Pressing the release printhead button de-primes the installed printhead.

☛ **Insert Printhead button**

Primes up the newly inserted printhead with ink.

NOTE: Priming up the printhead with ink may take several minutes (about 5 minutes).

NOTE: During first time installation, when the reservoir tanks are not filled up with ink, the printhead priming does not begin until reservoir tanks get full. Pressing the Insert Printhead button while the reservoir tanks are still filling up does not take any effect. Filling up the reservoir tanks from empty to full state takes about 15 minutes and process is indicated on status bar at the display.

☛ **Home Maintenance Module button**

Moving maintenance module into home position. Maintenance module is sliding out from below the printhead. When maintenance module is in home position it can be inspected and wiper roller, cap module can be replaced. The print engine lid must be opened up to gain access to the maintenance module.

☛ **Install Maintenance Module button**

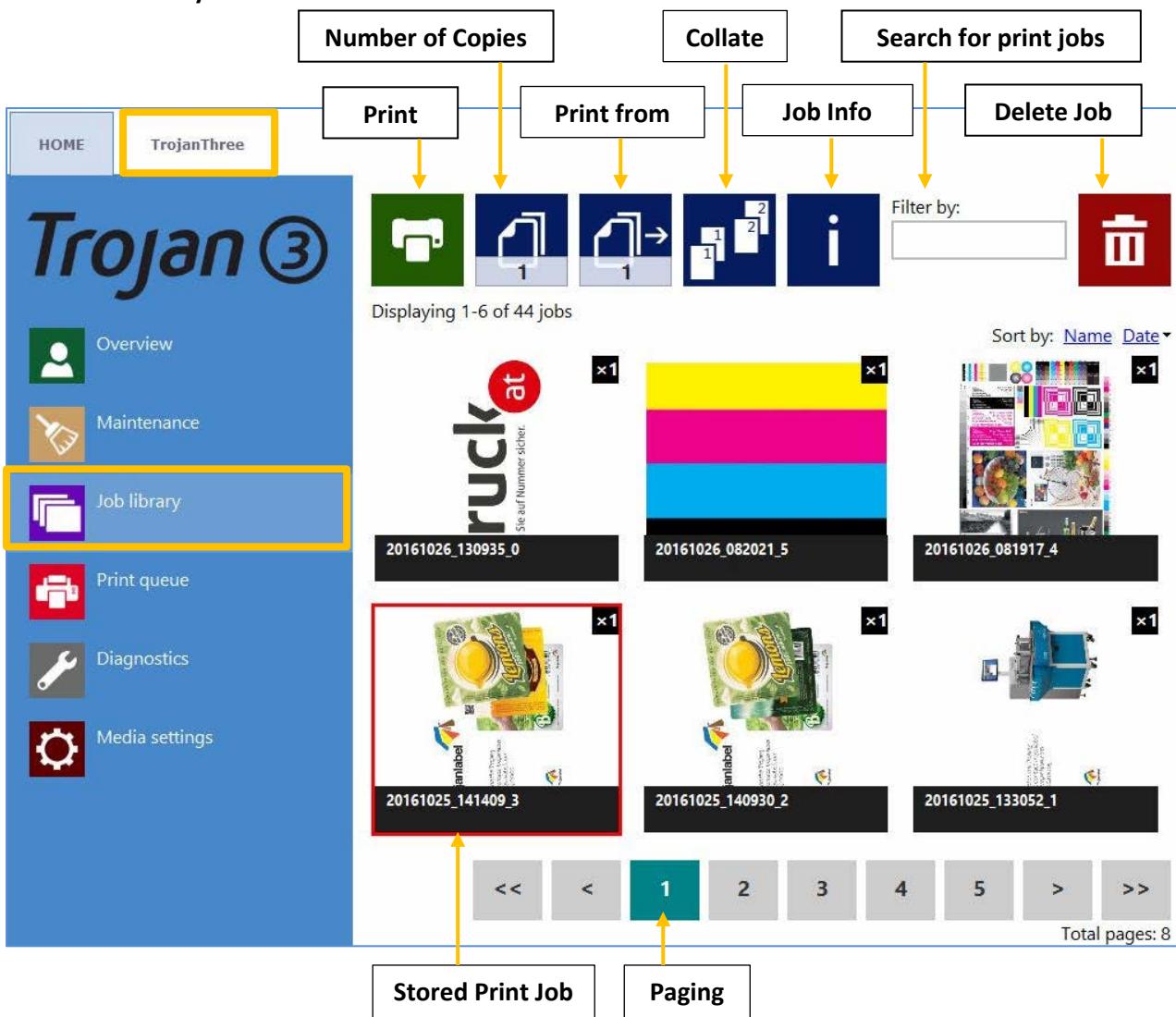
Moving maintenance module back to cap position (under the printhead).

☛ **Circulate Ink button**

Circulates ink in the system to purge air bubbles. This function does not create waste ink and can be run as many times as needed. One ink circulation cycle takes a few seconds only.

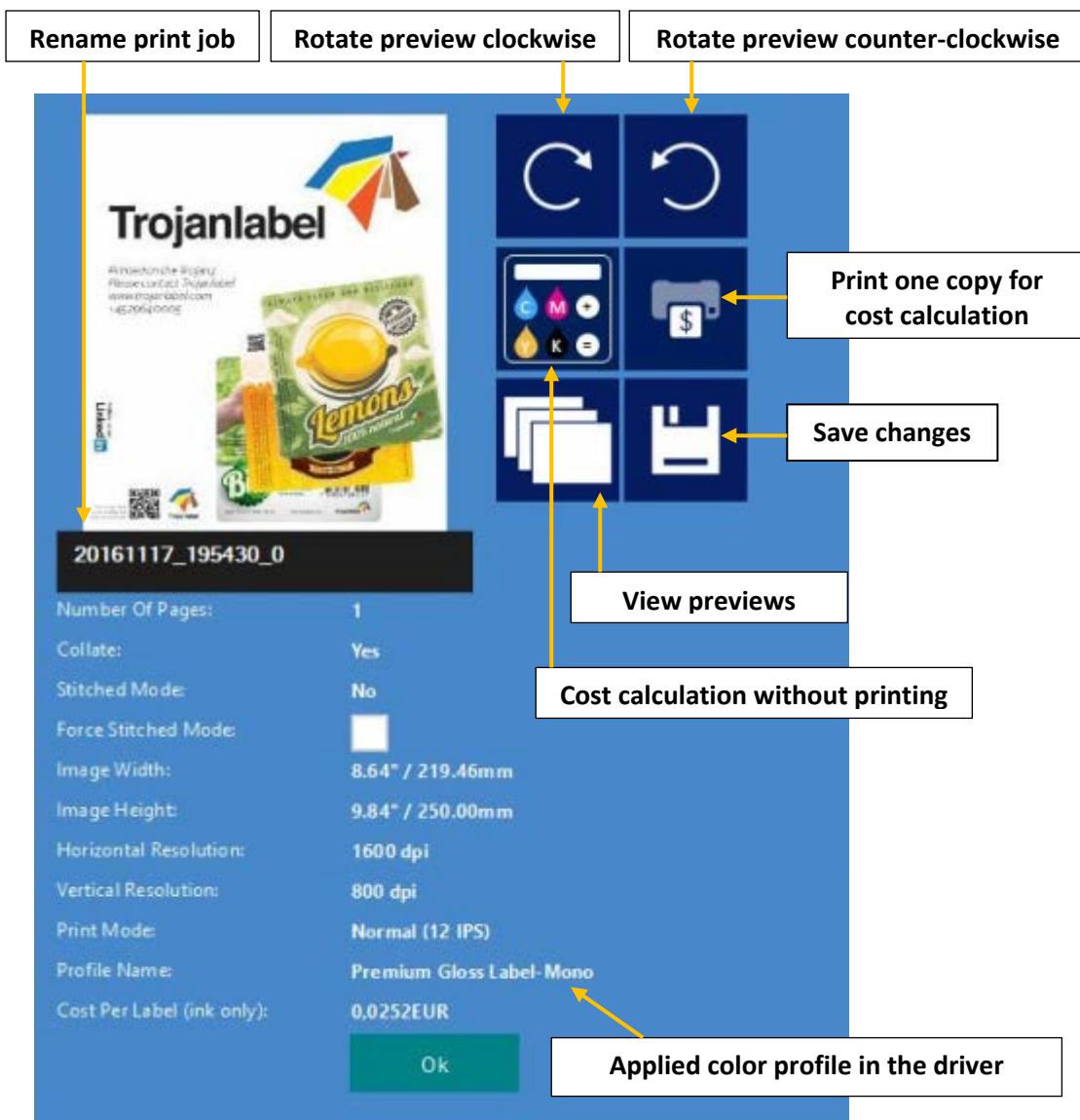
NOTE: Ink circulation is a very useful function and can help to get rid of fine streaks generated by air bubbles which might be blocking some printhead nozzles. It takes less time than Light Cleaning.

11.3.3 Job Library



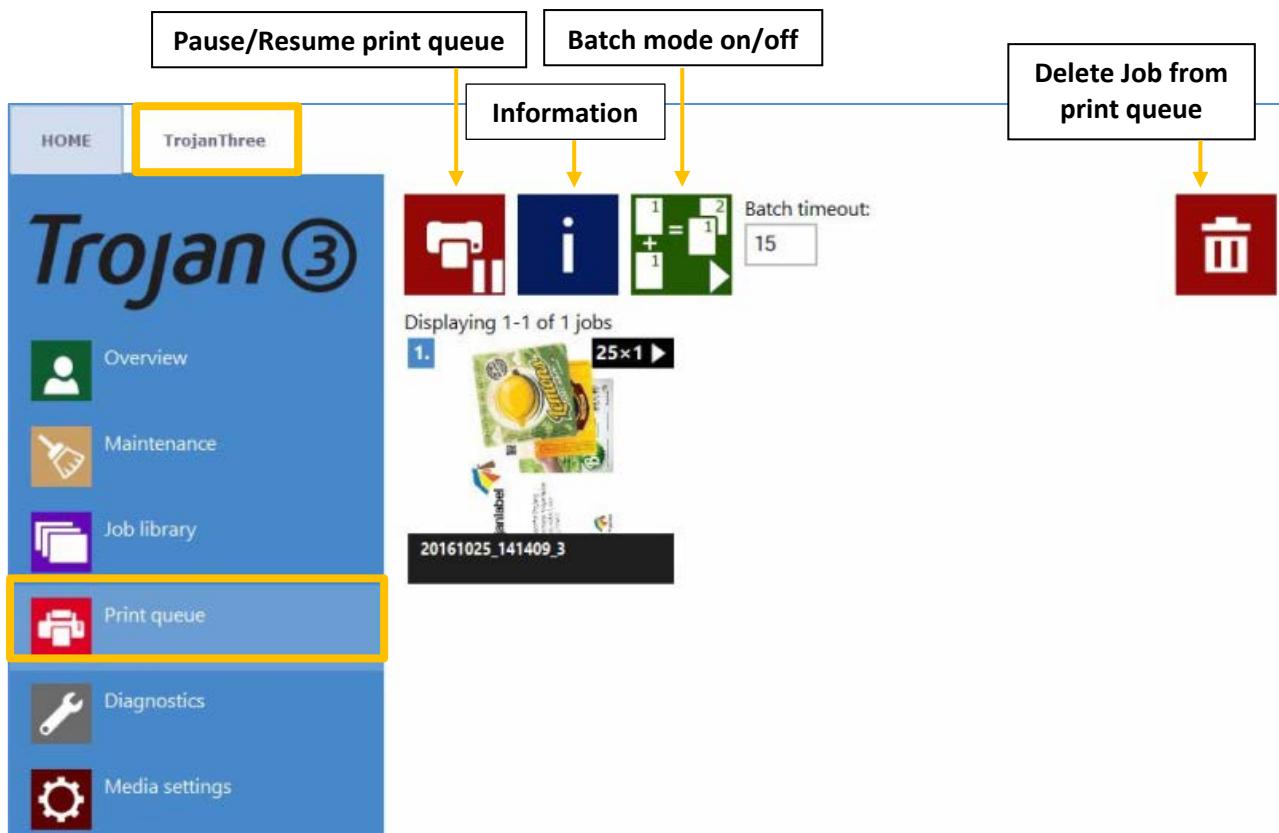
- Stores 30 printed jobs with random job name by default (print streams uploaded from driver).
- Print jobs can be renamed: Renamed print jobs are stored beyond the default 30 with random name. Only the drive space is the limit for storing jobs. Renaming can be done at information window. See picture below.
- Remembers last visited page and job when returning to the Job Library menu.
- Stored labels:
 - Print, change number of copies, print from a certain page number
 - Information about each print job (size, number of labels, speed, cost per label, applied color profile etc.)
 - Preview of print job
 - View images in a print job
 - Delete print job(s)
- Can swipe on touchscreen or use the scroll bar for paging when paging option is disabled at HOME
-> Settings -> User Preferences menu (See section 11.2.2)

☞ **Information button:**



- ☞ **Print one copy for cost calculation button:** Prints only one copy without pre or post job maintenance. Focus is on cost/label calculation not on quality. Pure ink cost of 1 label.
- ☞ **Applied color profile:** the color profile applied in the driver when the job was sent (see section 12.2 for selecting color profiles).
- ☞ **Collate button:** Describes the order how the different pages will be printed out within one print job when printing a multipage file.
 1. Copies of a page are printed one after the other within a print job
 2. Copies of pages are printed in sequential order within a print job
- ☞ **Print From button:** makes sense when job contains different pages (variable data, different images etc.) and user wants to print out the stored job from a certain page number.
- ☞ **Force Stitch Mode checkbox:** Normally Stitch mode can be enabled from the TrojanThree driver, however enabling the stitch mode checkbox will create a stitch mode job from the actual job when printed (see more from stitch mode at section 10.2). This function is useful when the job was sent from the RIP where stitch mode is not available.

11.3.4 Print Queue

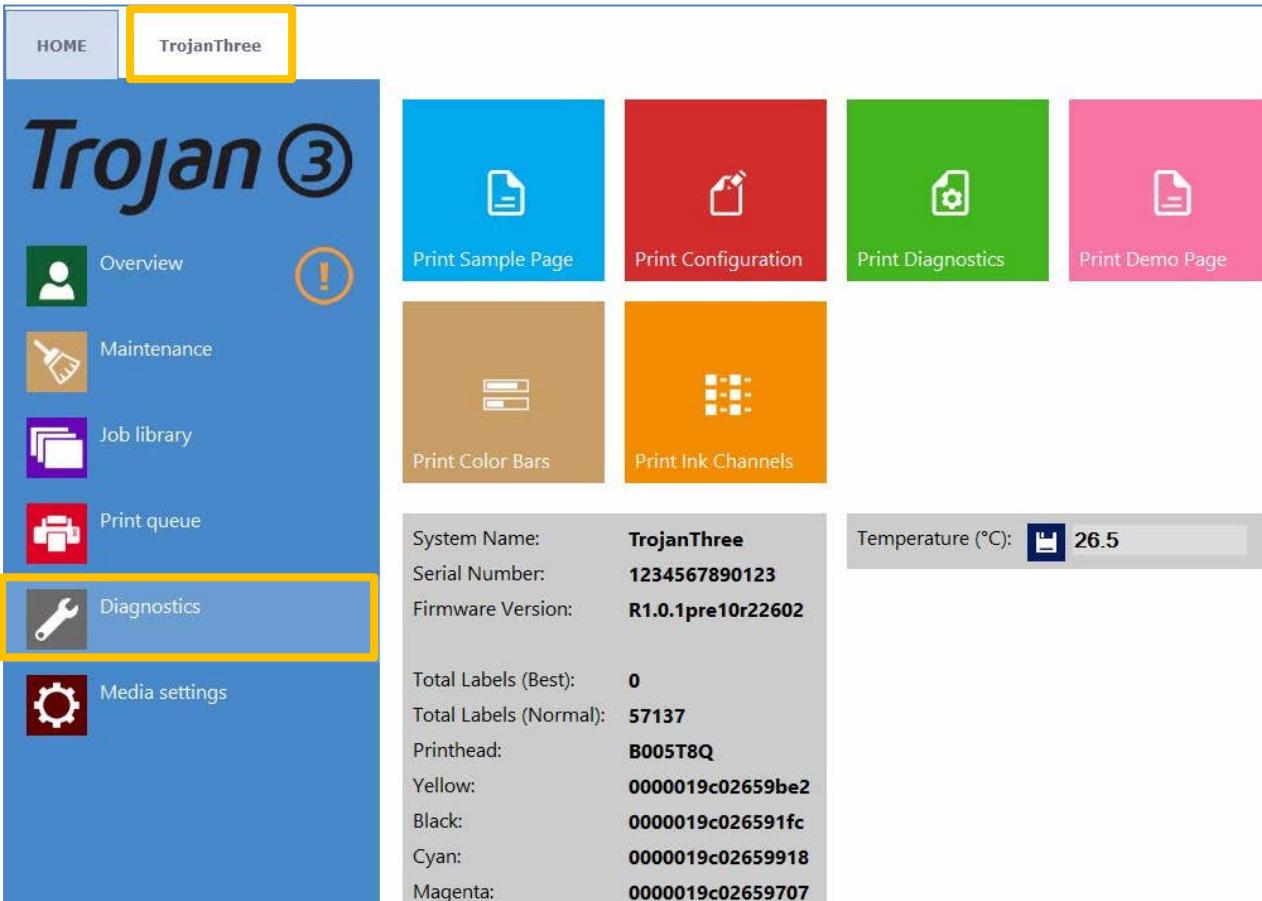


- Print jobs are queued progressively as they sent and processed in FIFO (first in first out) system. The queue can be managed from Print queue menu.
- The print queue is stored even if the TrojanThree is restarted.

NOTE: The currently printed job in the queue cannot be deleted.

- ☛ **Pause/Resume Print Queue button:** While print queue is paused the jobs are pending in the queue and printing only starts when the queue is resumed.
- ☛ **Information button:** Same as in job library (see section 11.3.3).
- ☛ **Batch Mode on/off:** Batch mode means that all jobs sent within a defined timeout period will be merged into 1 job and will be printed out at once when the timeout expires. The timeout counter begins when batch mode is switched on.
- ☛ **Batch mode timeout:** Period of time while jobs are merged together when batch mode is on.

11.3.5 Diagnostics



The screenshot shows the Trojan ③ software interface with a sidebar on the left and various diagnostic tools on the right.

- Left Sidebar:**
 - HOME
 - TrojanThree** (highlighted with a yellow box)
 - Overview
 - Maintenance
 - Job library
 - Print queue
 - Diagnostics** (highlighted with a yellow box)
 - Media settings
- Right Side:**
 - Print Sample Page**
 - Print Configuration**
 - Print Diagnostics**
 - Print Demo Page**
 - Print Color Bars**
 - Print Ink Channels**
- System Information:**

System Name:	TrojanThree
Serial Number:	1234567890123
Firmware Version:	R1.0.1pre10r22602
Temperature (°C): 26.5	
Total Labels (Best):	0
Total Labels (Normal):	57137
Printhead:	B005T8Q
Yellow:	0000019c02659be2
Black:	0000019c026591fc
Cyan:	0000019c02659918
Magenta:	0000019c02659707

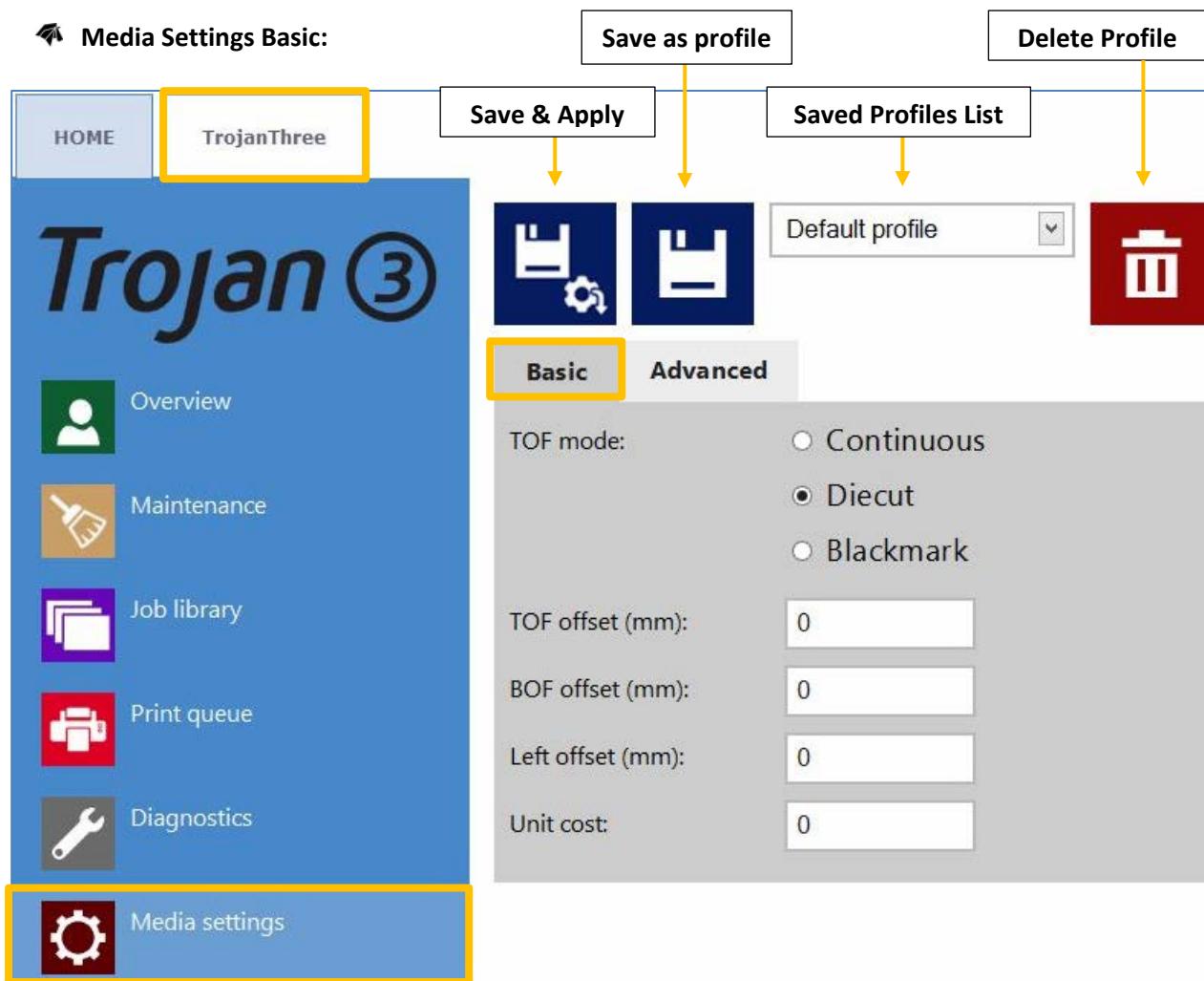
- Information about software, serial numbers, total label counter.

👉 **Temperature:** Adjusting ink temperature to room temperature for the best print quality. The average temperature of the room where the TrojanThree is set up displayed in temperature field based on the feedback of the built in temperature sensor. Heating up the ink right before printing will be adjusted to environmental temperature. This field is filled up automatically based on the temperature sensor but can be overwritten by the user.

NOTE: User defined temperature value remains active until next reboot only.

- 👉 **Sample page:** Sample page with current NVM and variable settings (A4 size).
- 👉 **Configuration page:** Containing current configuration settings (A4 size).
- 👉 **Diagnostics page:** Containing system information (A4 size).
- 👉 **Demo page:** Demo image (A4 size).
- 👉 **Color Bars:** Standard color bars for checking printhead nozzles, mixes CMYK colors (A4 size).
- 👉 **Ink Channels:** Printing a color bar with each ink channel, no ink mixing (CMYK – A4 size).

11.3.6 Media Settings



NOTE: For TrojanThree OP version, Continuous and Blackmark mode is not available (only at LP version software). At OP version the TOF mode is always set to diecut as printing is done on size cut packaging materials, no roll media is applied.

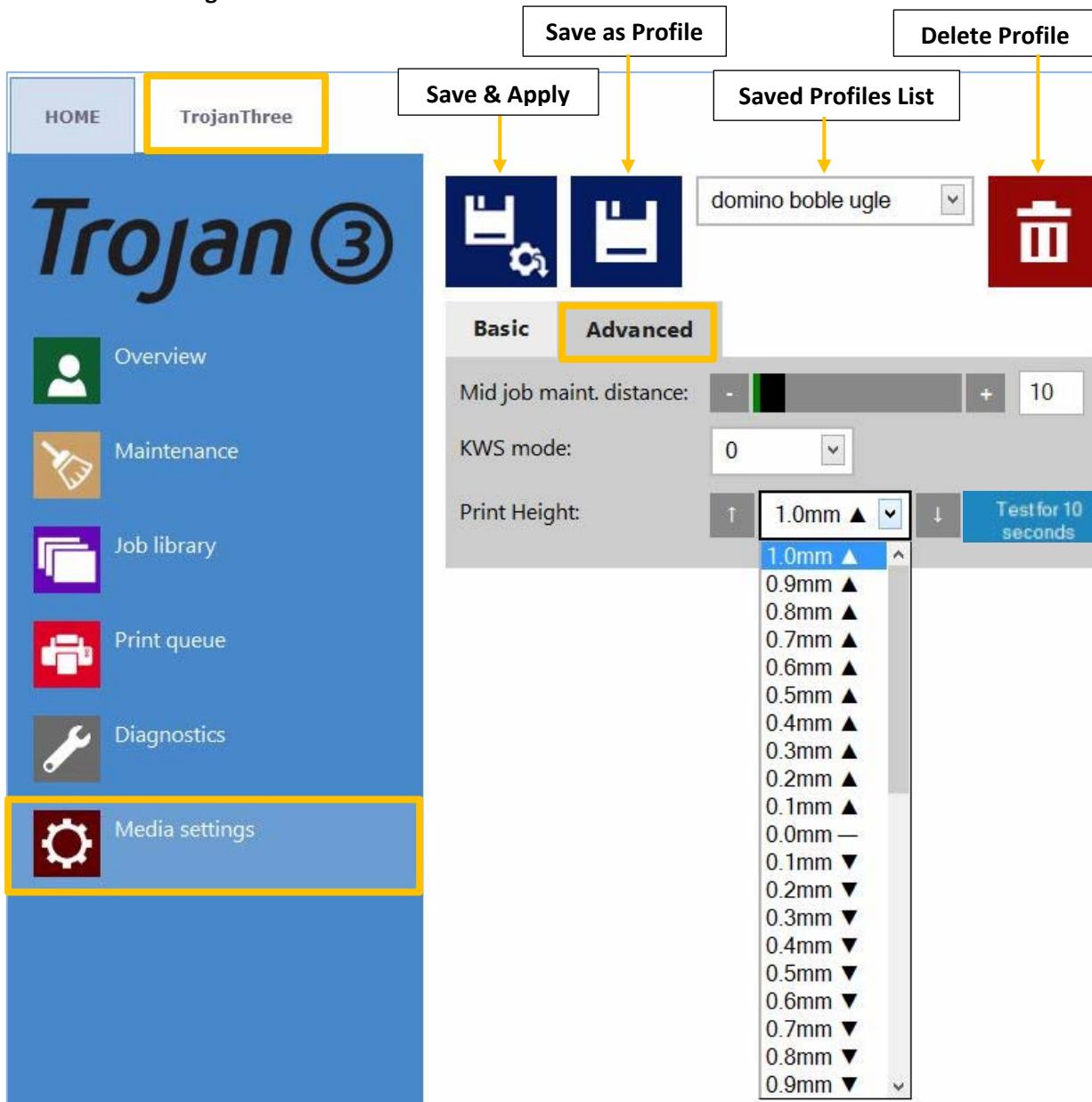
- **TOF mode: TOF (Top Of Form)** depending on used label media:
 - **Continuous** (no gaps between labels, roll media format only)
 - **Diecut** (gaps between labels, either pre die-cut roll media or packaging materials)
 - **Blackmark** (pre-printed blackmarkings on the media, blackmarks can be outside or inside on roll.)
- **TOF offset (mm):** Top Of From (top of label) can be +/- depending on moving the top of the image up or down on label. **NOTE:** limits -160mm ⇄ +160mm
- **BOF offset (mm):** Bottom of Form (bottom of label) can be +/- depending on moving the bottom of the image up or down on label. **NOTE:** limits 0mm ⇄ 100mm
- **Left offset (mm):** Moving printed image towards left or right compared to the left edge of the printhead. **NOTE:** limits -127mm ⇄ 222mm

- **Unit cost /Square meter cost:** Price of 1 printed unit (like a cardboard box or paper bag) or price of one label for die cut material or Square meter price for Continuous and Blackmark label material. Used for total cost/label calculation. (See section 11.2.3). The field changes from unit to square meter cost when TOF mode is changed from diecut to continuous or blackmark.
- **Gap size (only in continuous mode):** Setting the gap size between printed labels.
NOTE: Maximum gap size is 65mm.

Square meter cost:	0.87
Gap size (mm):	2.5

Setting label gap size in continuous mode

Media Settings Advanced:



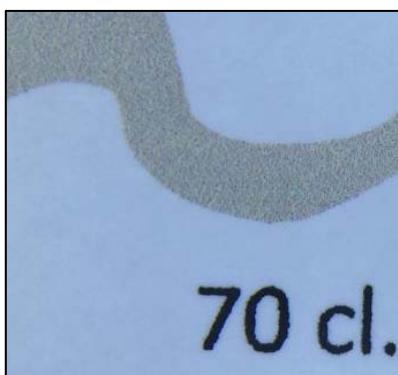
- **KWS mode:** KWS = Keep Wet Spitting

KWS is a function to protect the 70,400 printhead nozzles from dehydration. In practice it means that during printing all the nozzles fire some ink, even the nozzles which do not take part effectively in printing. As a result tiny (almost microscopic) dark spots of ink might be seen on printouts, especially when the background of the printed image is light in color. When those tiny spots are not acceptable from the print quality point of view, this function can be reduced or switched off completely.

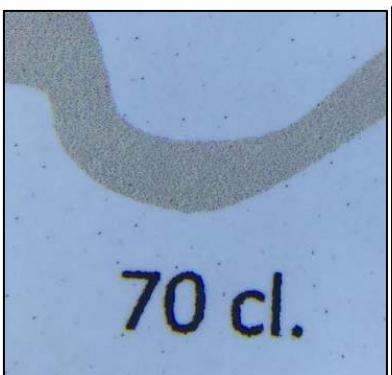
NOTE: See KWS levels on next page more detailed

- **Mid job maint. Distance (meter):** Setting mid-job maintenance frequency in printed linear meters. Mid-job maintenance is a full printhead maintenance during processing a print job to preserve best print quality. **NOTE:** Actual value is always displayed at status bar on the screen
- **Print Height:** Adjusting the height of the printhead compared to the height of the media. The ideal distance for the printhead above the media is around 1mm.

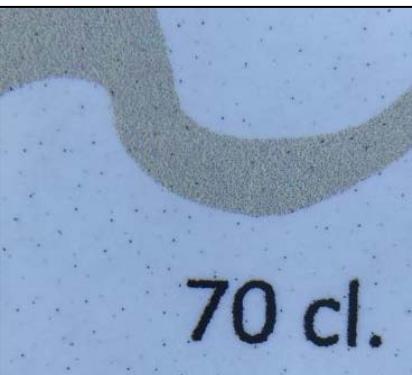
- KWS levels:



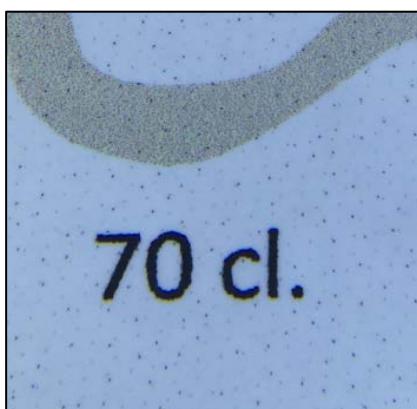
KWS level 0



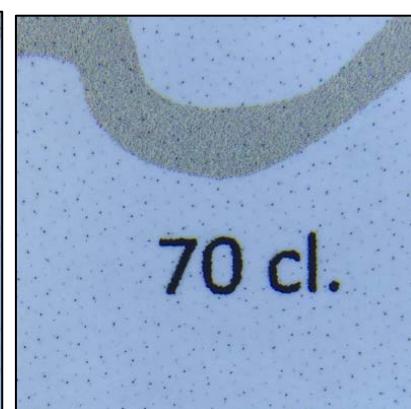
KWS level 1



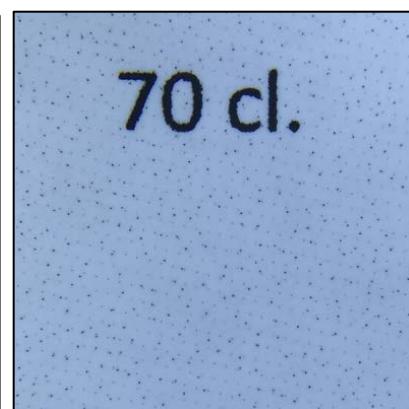
KWS level 3



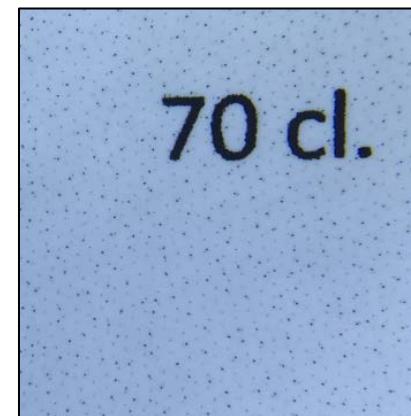
KWS level 5



KWS level 7



KWS level 9



KWS level 11

WARNING:

The degree of KWS has effect on printhead life. The higher KWS is set the more protection the printhead gets against dehydration of nozzles. ALTHOUGH switching KWS off (0) does not result in loosing warranty for the printhead, it is still advised to enable KWS and set it to a level where the small dots are still acceptable in terms of print quality.

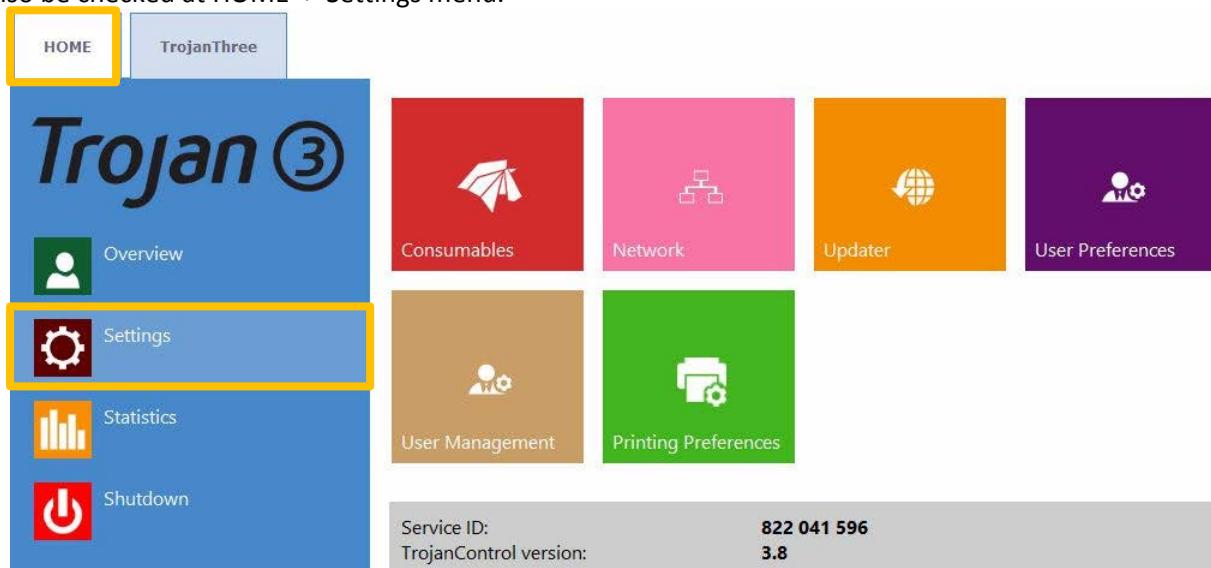
12 Updating Software and Firmware on TrojanThree

Trojanlabel is regularly updating the TrojanControl interface and the firmware for the TrojanThree printer. Each time when a new update is available a newsletter or a technical bulletin is sent out to partners.

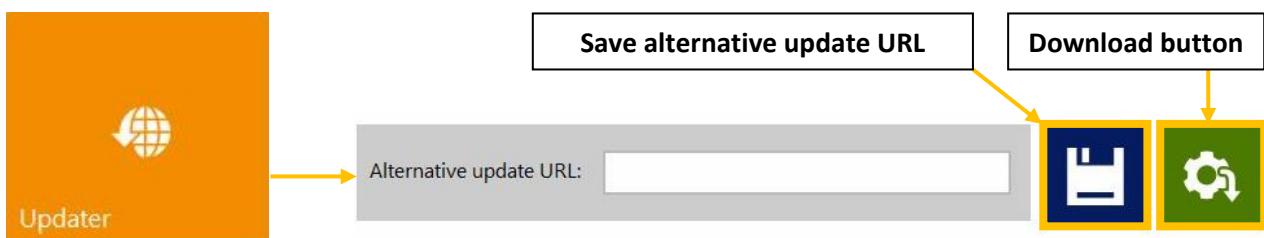
- In case internet connection is available for the TrojanThree, then updating is done over the internet automatically once the update is initiated from updater menu.
- In case internet connection is not available for the TrojanThree directly, then offline update package can be downloaded from our extranet and updating can be done via the local network.

12.1 Online Update

The updater menu can be found in **HOME -> Settings** menu at TrojanControl. Actual software version can also be checked at **HOME -> Settings** menu.



Actual TrojanControl software version in HOME-> Settings... menu.



- Make sure the TrojanThree printer is connected to the internet.
- Make sure that 'Alternative update URL' field is empty.

NOTE: the 'Alternative update URL' field is reserved for customized updates and for offline updating.

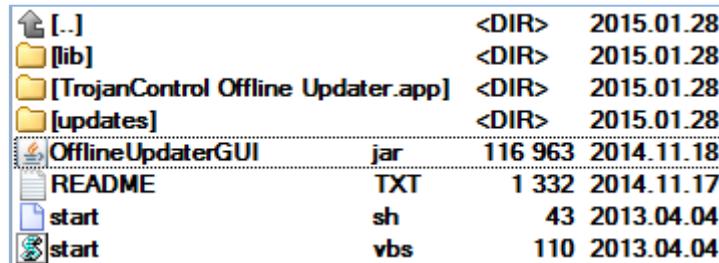
- Press green download button.
- Installation starts automatically.
- Press 'NEXT' button when asked during the installation.
- Check TrojanControl version number after installation.

NOTE: The TrojanControl software may restart several times during the update process.

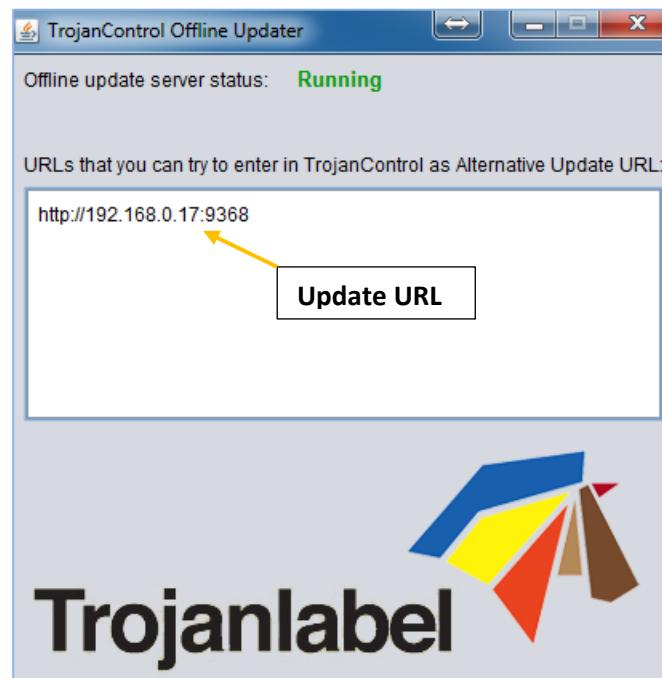
After updating the TrojanControl interface the updater is detecting current Firmware version and will start updating the TrojanThree firmware when needed.

12.2 Offline Update

- The actual offline updater package can always be downloaded from Trojanlabel extranet site or acquired from the local Trojanlabel dealer.
- Copy and unzip the updater package on a user PC which is connected to the same network as the TrojanThree printer.
- Double click on 'OfflineUpdaterGUI.jar' to start the update server.



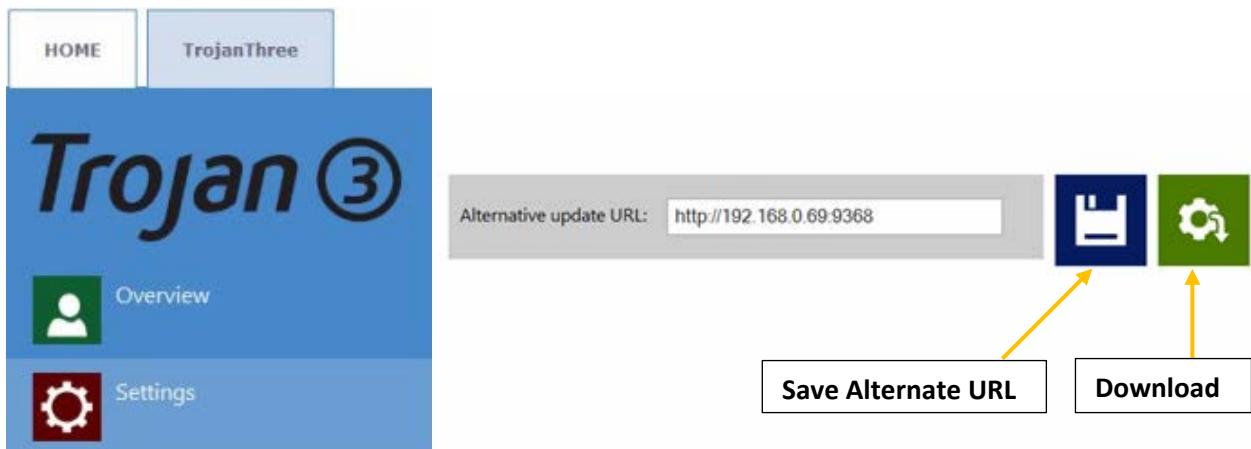
- The update server window will open up. The window should be left open as long as the update is going on.



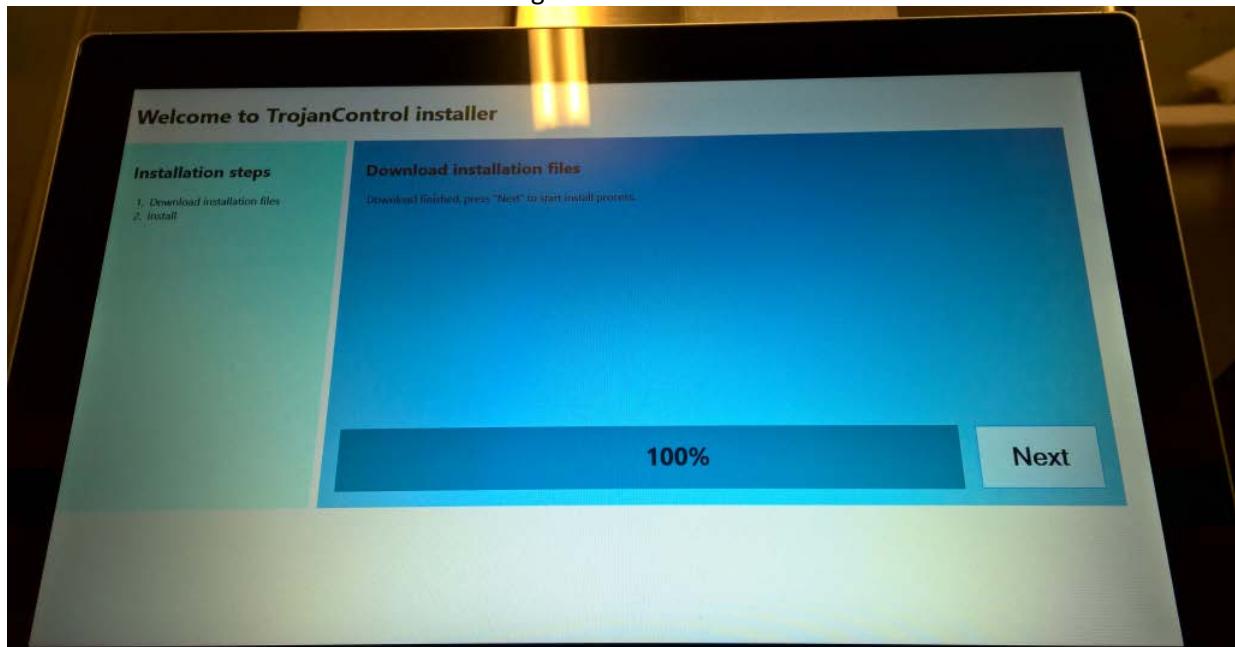
Running update server on user PC.

- The update server will provide an update URL (usually with the IP address of the certain user PC).

- Type the update URL into HOME-> Settings...-> 'Alternate update URL' field and press save button:



- Press green download button.
- Installation starts automatically.
- Press 'NEXT' button when asked during the installation.



TrojanThree is being updated...

- Check TrojanControl version number after installation.

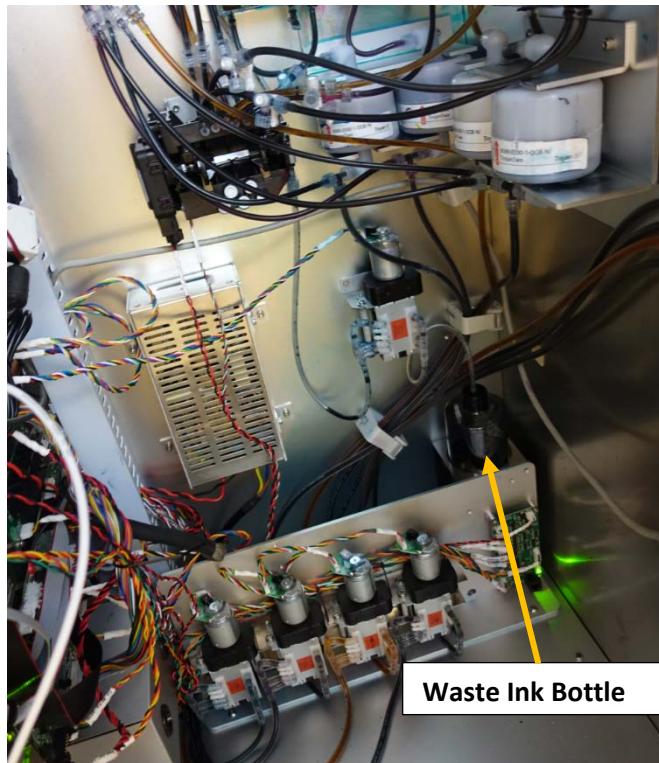
NOTE: The TrojanControl may restart several times during the update process.

After updating the TrojanControl interface the updater is detecting current Firmware version and will start updating the TrojanThree firmware if needed.

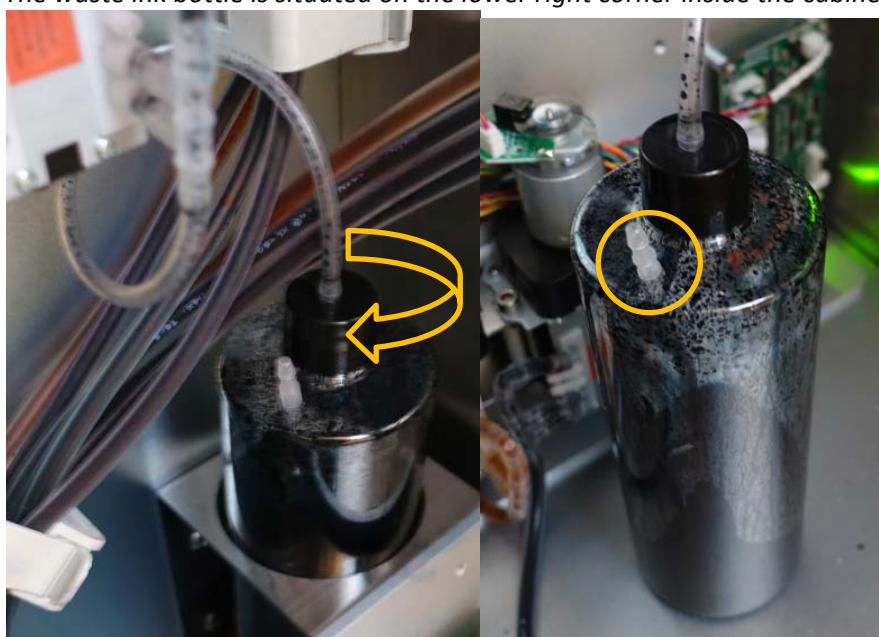
13 Maintenance

13.1 Emptying the Waste Ink Bottle:

- Maintenance routines which protect the printhead produce some waste ink. This waste ink goes to the waste ink bottle. **The waste ink bottle is located near at the lower right corner inside the cabinet.**
- It is advised to check waste ink bottle frequently depending on printed volumes but at least once a week and empty the tank when it is almost full.



The waste ink bottle is situated on the lower right corner inside the cabinet



Unscrew the cap

Overflow tube

- To empty the waste ink bottle unscrew the cap and take ink tank to the place where the waste ink can be disposed.
- In case the waste ink bottle gets full of ink there is an overflow tube on top of the tank.

NOTE: Keep a piece of cloth/paper towel/sponge nearby to avoid dropping of ink from tubing when removing the cap of the bottle.

WARNING!

The ink might be considered as Hazardous Waste in some countries. Make sure you fill the waste ink from the bottle into a separated tank and disposal is done according to the local regulations!

Material Safety Data Sheets (MSDS) for the Trojan ink can be downloaded from Trojanlabel extranet.

13.2 Replacing Micro Fiber Roller (MFR)

The wiper roller (microfiber roller) is a wear and tear part and needs to be replaced as it wears down. It is advised to change the wiper roller in every 6 months.

Signs that the wiper roller might needs replacement:

- If surface of the wiper roller looks shiny and not 'fluffy' anymore, then wiper roller is worn down and needs replacement.
- If printhead wiping routines (like wipe printhead or light/medium/heavy clean) do not improve print quality and fine streak(s) remain on the printouts after the routines multiple times.
- If ink puddles remain on the printhead surface after the wiper roller wiped.

Part number:	Part description:
10003356	T3 Wiper Roller Gen 2 (Micro Fiber Roller)

Required equipment:

Distilled Water



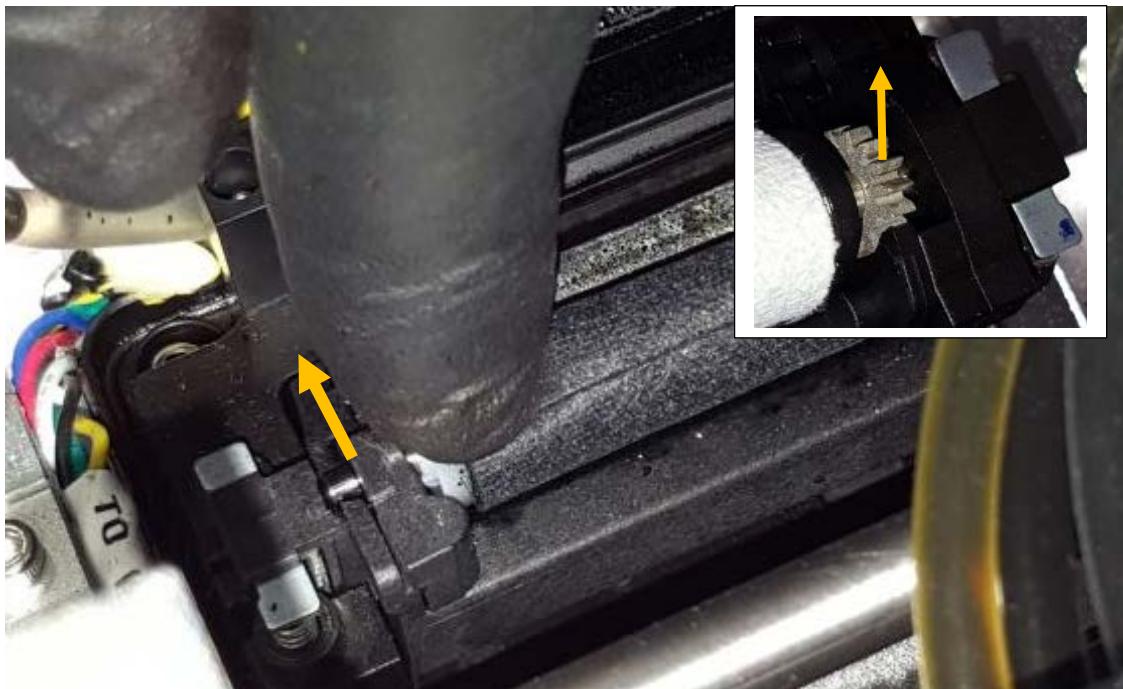
1. Open lid on top of the print engine:



2. Press Home Maintenance Module button in TrojanThree -> Maintenance menu to gain access to the wiper module:



3. Detach and remove the used micro fiber roller:



Pull the micro fiber roller out from under the plastic latch



Micro fiber roller out.

On the right side where there is a gear mounted to the micro fiber roller, just lift out the gear from the wiper motor gear house.

4. Install new wiper roller:



Fit the gear on the right end of the micro fiber roller onto the proper place from above. The gear has to fit to the gear of the wiper motor.



Push the axis of the micro fiber roller under the plastic latch until it clicks onto the right place.

5. Press Install Maintenance Module button at TrojanThree -> Maintenance menu to move maintenance tray back into the proper position.



13.3 Manual Printhead Wiping

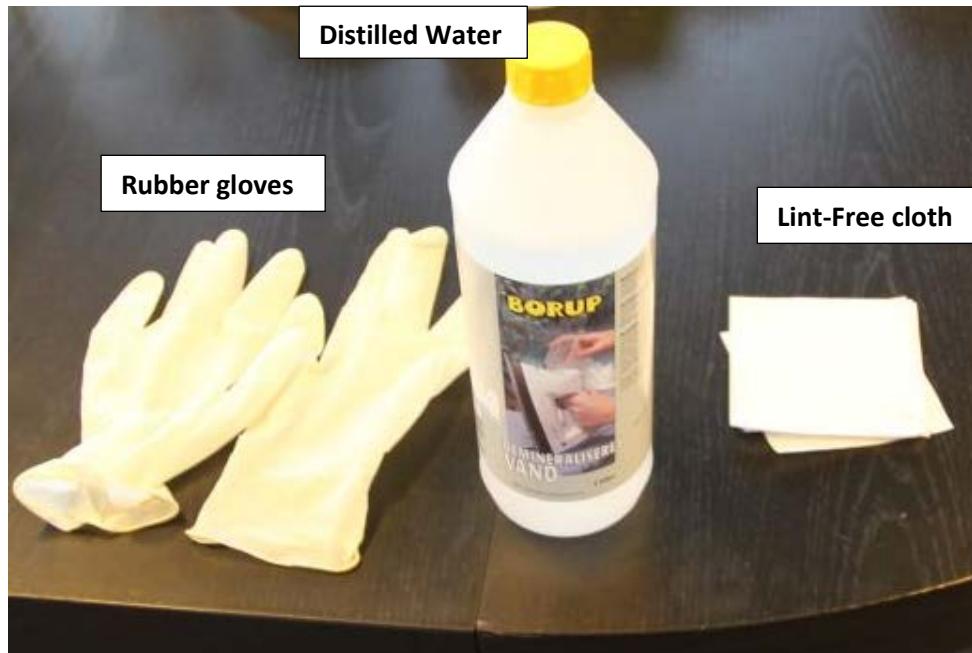
The manual printhead wipe has 3 functions, these are:

- Cleans printhead nozzle surface from waste ink, dust, debris, particles.
- Prevents dehydration of the printhead nozzles.
- Forms a wet film layer on the printhead nozzle surface thus creates some vacuum and help to prevent air bubbles blocking some nozzles.

It is advised to perform a manual printhead wipe at least once a week.

WARNING!

**Only use Distilled or De-Ionized Water for cleaning the printhead!
Never use any chemicals or alcohol for cleaning/wiping the printhead!
Chemicals and alcohol are damaging the printhead nozzles.**



1. Open lid on top of the print engine:



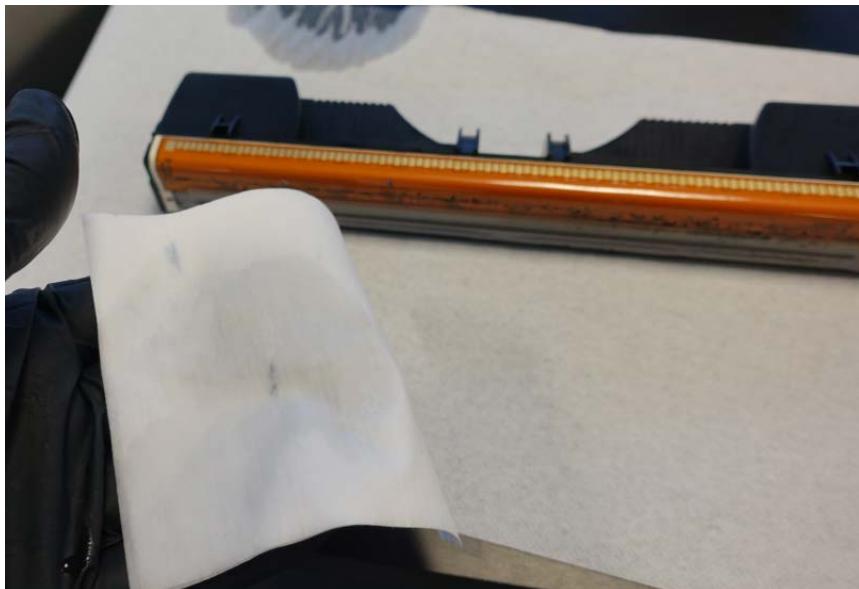
2. For manual wet wiping the printhead, the printhead has to be removed from the TrojanThree. Press Release Printhead button at TrojanThree -> Maintenance menu to de-prime the printhead and open the printhead latch.



3. Remove the printhead from the TrojanThree and put in on a table



4. Make a piece of lint-free cloth wet with De-Ionized or Distilled water



5. Wipe the printhead nozzles with the wet cloth with a single move from one end to the other. Never wipe back and forth because that can transfer waste ink back to the nozzles causing color contamination



Wiping printhead from one side to the other with a single move



Printhead clean and wiped

6. Install the cleaned printhead back and close the printhead latch



7. Press Insert Printhead button at TrojanThree -> Maintenance menu to prime the printhead with ink. This process may take up to 5 minutes.



8. Once system state goes back to online, then TrojanThree is ready to print

System State:	Online
Error State:	NA
Print State:	NA
Media Path State:	Ready

14 Troubleshooting

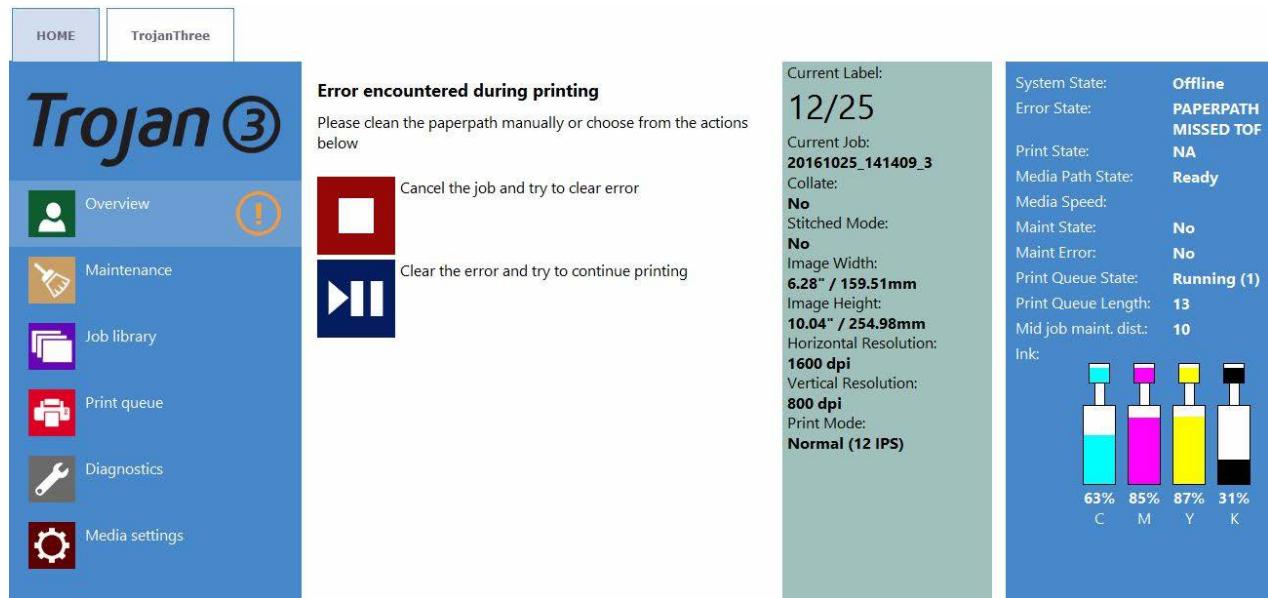
14.1 Error States List

Problem	Solution
Error display: "Paperpath Missed TOF Error"	A) The gap size may be too short. Adjust "Gap Size" in media settings in case Tof mode is continuous (LP version only) B) Make sure the label size is set correctly in the driver when sending a job. C) Make sure media present/label gap/blackmark sensor is calibrated in case TOF mode is set to diecut or blackmark D) Make sure that by all means the gap between labels is within the supported range (see section 9 for gap size requirements)
The bottom of the label looks unfinished, showing a yellow/green line.	This is caused by the image being 'truncated' by the print size. The Print Head prints in the order of Y, K, C, K, and M. The reason why a dark green line shown is because the printhead stops printing after Y, K and C are printed. Therefore, the solution is to change the BOF offset at Media Settings menu and allow the printhead to print until the full image.
Error display: "Data Path Underrun Error"	A) Make sure preview generation is not set to 'Instantly' B) Reduce image complexity (no point in creating higher resolution artwork files than 1600x1600dpi as the driver or the RIP software will downscale the image anyways). C) Reduce compression rate when using the RIP software D) Check design of artwork file. Check for overreaching background objects in the printed image which can confuse the machine as those over the specified label size.
Error display: "PRINthead FAULTY"	Communication error with the printhead. One or more segments of the printhead cannot be read. A) Contact support. B) Try with another printhead
Error display: "Paper Path Page Sequence"	A) Typically when the packaging material does not reach the media present sensor in time within the timeout period while the print engine is waiting for the media present signal. B) Or when the speed of the conveyor belt or the web path system is not matching with the print speed.
Error display: "Paper Path Feed Timeout"	The TrojanThree is ready to print and waiting for the media present signal, but the label material is not present. There is a 15 seconds timeout period while the machine is waiting for the media to arrive.
Error display: "Printhead Missing QA"	Printhead is not installed physically or printhead QA chip cannot be read out. If printhead is installed but not recognized, then check/clean contact pins and reinsert the printhead. If cleaning the contact pins does not solve the issue, then try with another printhead or contact support.

Error display: "Maintenance Jam"	<p>The maintenance tray movement is blocked physically or maintenance tray's position is not calibrated or unknown to the system.</p> <ul style="list-style-type: none"> A) Use the red button at HOME ->Settings->Network menu to restart the user interface and print engine. When the print engine is starting up it does a maintenance tray calibration. B) Try to move the maintenance tray manually and check if the tray can move freely on the rails. Then use the red button at HOME-> Settings->Network menu to restart the print engine. C) Contact support if A) and B) options cannot solve the issue
Error display: "Bag Out"	<p>One or more ink tanks are out of ink. Replace the empty ink tank and press refresh button on screen</p>
One or more ink lines are not filling up with ink	<p>There is excess air introduced into the ink system and causes pressure loss.</p> <ul style="list-style-type: none"> A) Do a manual wet wipe on the printhead (see section 13.3 for manual printhead wipe). B) Reinsert the printhead C) Check revolvers (fluidic couplings which connect with the printhead couplings), there might be a loose revolver cap -> contact support D) Check ink tubes throughout the ink delivery system for any loose luers, ink leaking etc. E) Try with another printhead F) Contact support
The TrojanThree tab is not displayed on the screen	<ul style="list-style-type: none"> A) The printhead is damaged (nozzles are scratched) and ink ingestion causes short circuit and pulls down the mainboard of the print engine -> most likely the print engine mainboard keeps on restarting all the time. Solution: Remove the printhead and install another printhead. B) There is a damaged print job in job library which has to be deleted from the file system. Contact support.

14.2 Error Messages on Screen

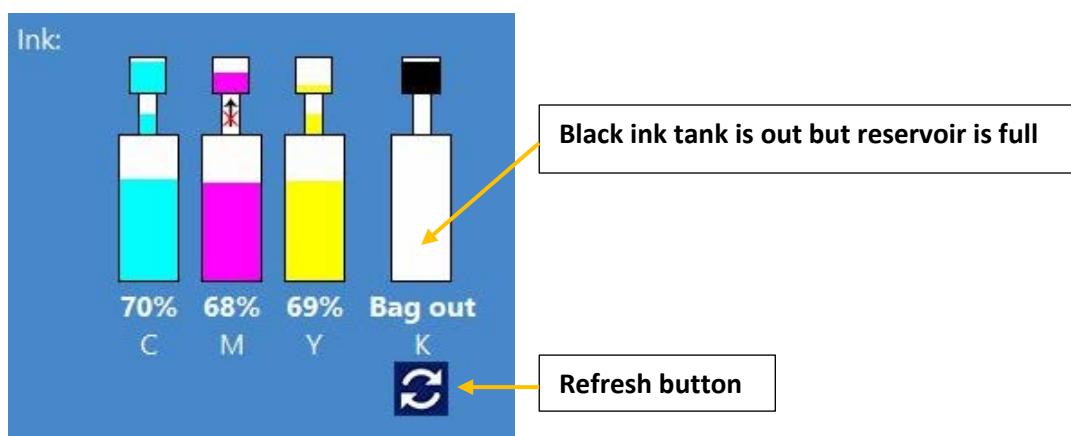
The TrojanThree has an interactive user interface called TrojanControl. Whenever an error state occurs, depending on the error state some on screen instructions can appear offering information about the error and also selection of user actions to solve the issue and to cancel or resume the actual print job.



Example: Missed TOF Error occurred

⚠ Bag Out error

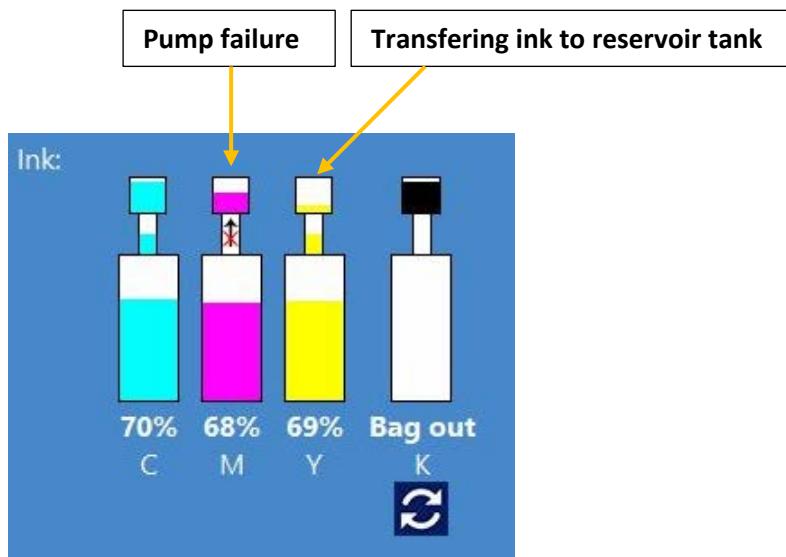
One of the ink tanks run out of ink during printing. The printing continues as reservoir ink tanks are full. User can hot swap ink tank(s) and press refresh button on screen to clear the error message after new ink tank is installed. Ink tank sign is flushing and ‘Bag out’ message appears in status bar.



⚠ Ink Transfer failure

When a crossed out arrow appears in status bar. This means that pump cannot bring the ink up from the ink tank to the reservoir tank. Can be pump motor failure, like encoder wheel on motor is filthy or pump stuck, electrical failure etc. Contact support when this happens.

NOTE: When pump is transferring ink from the ink tanks to the reservoirs, then ink movement is simulated on the screen between large ink tank and smaller reservoir tank status bar.



⚠ Running out of disc space

When new print job is sent to the machine but free disc space on hard drive reaches the 1 GB limit. For example the amount of print jobs stored in the job library occupies most of the disc space. Then the actual print job is paused and a warning sign appears on the upper right corner on the screen until enough disc space is freed up. Extra disc space can be gained by deleting some print jobs from the job library. When disc space is enough to continue the actual print job, then warning sign disappears and print job continues.



Receiving print job

Warning sign to indicate low free space level on built in hard drive

14.3 Firmware Update Failure

If an error happens during the FW update process, the color of the text changes to red to indicate error state. The progress bar might still show progress and counter but the update process will not be successful. To resolve the issue and finish the firmware update, please shutdown the full system and start again. After the reboot (power on), the emergency restore process will take over and try to finish the update (there is no visual feedback about this). When second update attempt is finished, it will automatically restart the system which should be up to date after the restart and printer (TrojanThree) tab will appear on screen.

If for some reason the second recovery attempt fails, please contact Trojanlabel support.



Firmware update (Step: 5/5)



Firmware update text changed to red.

15 Trojan3 OP guidelines for printing bags

The Trojan3 is a versatile all-purpose over printer and is designed to print on most absorbing surfaces. It is ideal for many types of applications such as many type of envelopes, card board boxes, paper bags and wooden plates.

This document will describe how to print on paper bags using the T3 over printer, explaining how to feed paper bags and general best practices for print preparation and maintenance.

The quick summary of this document and the overall headlines to achieve optimal conditions when printing bags is the following:

- Print only on flat surfaces (i.e. not on the handles and “bottom bump”)
- Feed the bag sideways (moving handles outside the print zone)
- Clean print head and cap (manually clean PH at job start)
- The maintenance modules microfiber roller should be relatively dry
- Use substrate vacuum cleaner

Please also refer to Chapter 20 for examples of different bag types, including a special flat type bags that works very well with the T3.

OP	Over Printer
PH	Print Head
Cap	Part of the maintenance/service station that prevents the PH from drying or being contaminated when idle

16 Typical issues

16.1 Uneven surfaces (Distance between substrate and print head)

The T3 is designed as an all purpose over printer for printing on absorbing materials, such as paper, inkjet coated substrates (PP, PE etc.) and even some wooden materials. Besides the requirement of an absorbing surface, it is also important that the print surface is as even as possible.

It is important that the paper bag is as flat/smooth as possible, crumpled paper bags will result in a poor print quality and smearing from touching the print head.

16.2 Print head too far

The image will look blurred (often seen as sand bank/fish bone like patterns in solid colours).

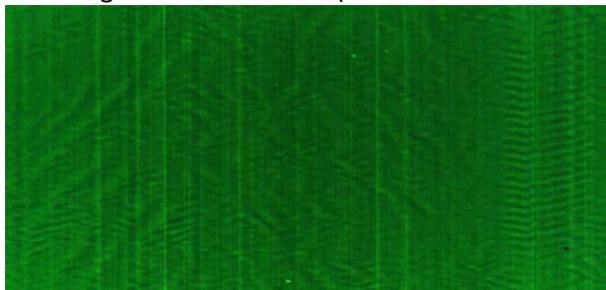


Figure 1 PH too far from substrate

16.3 Print head too close

The image will smear.

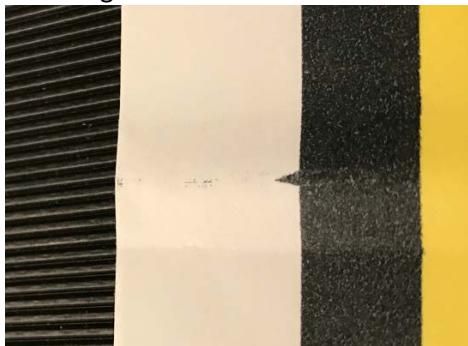


Figure 2 Substrate is touching the PH

The recommended distance between the print head and substrate is **0,7-1 mm**. Please consult the T3 user guide on how to adjust the height.

16.4 Residual ink smearing on substrate

A clean wiper, cap and print head is important for the print quality, please refer to chapter 18.1 for details.

17 Feeding paper bags

17.1 Challenging areas

The challenge when printing on bags is the uneven surfaces, most commonly experienced in two areas:

17.1.1 Were the handles are attached to the bag

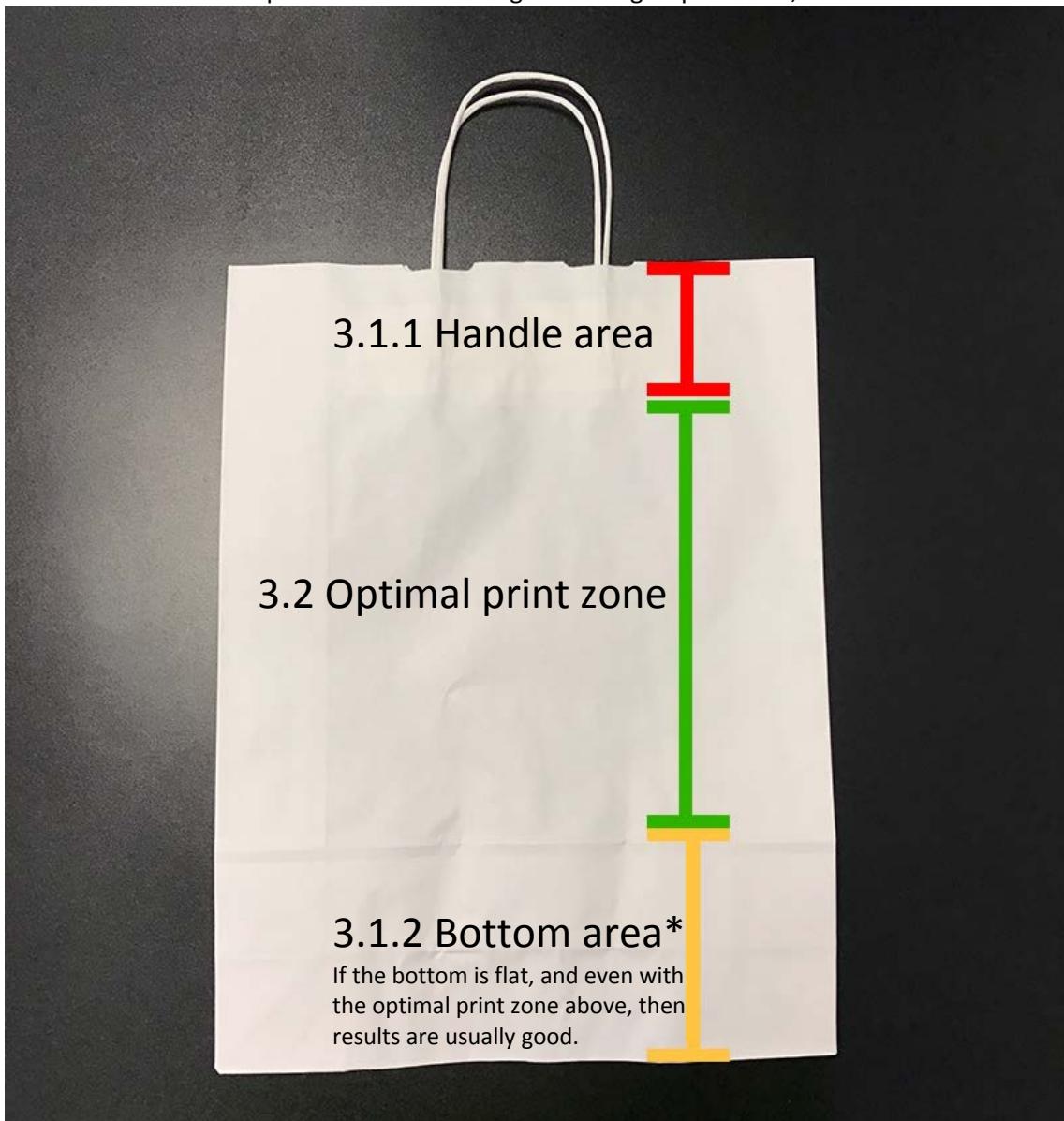
See photo below

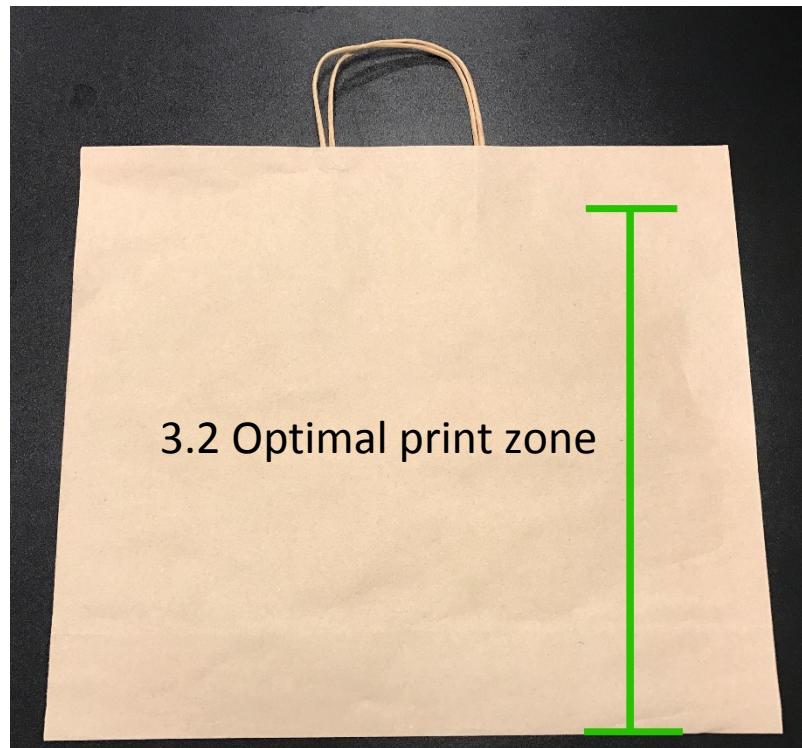
17.1.2 Were the bottom of the bag bends around creating a bump on the printing surface

See photo below

17.2 Optimal print zone

Because of the issues described above, the optimal zones for printing is outside those two areas. However, many bags will work fine when printing on bottom area as well, as long as there isn't a great variance between the thickness of the print zones. I.e. as long as the bag is quite even, then the results will be good.

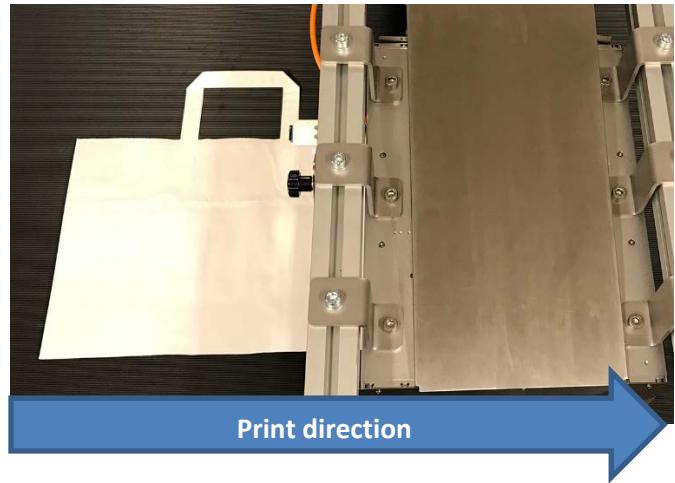
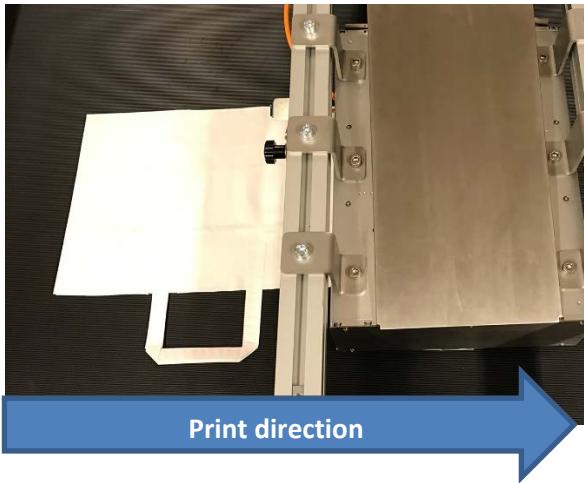




17.3 Direction of feeding

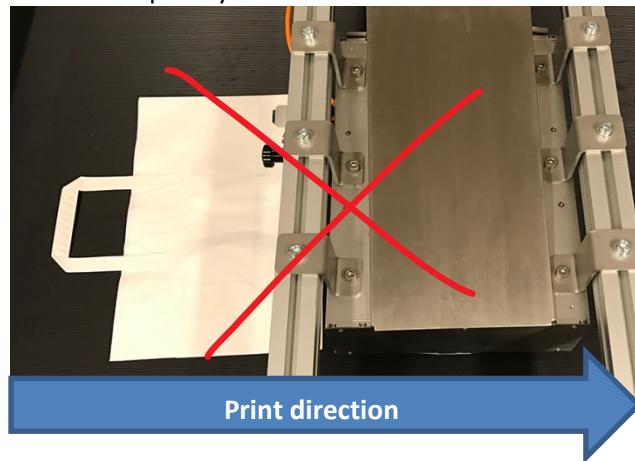
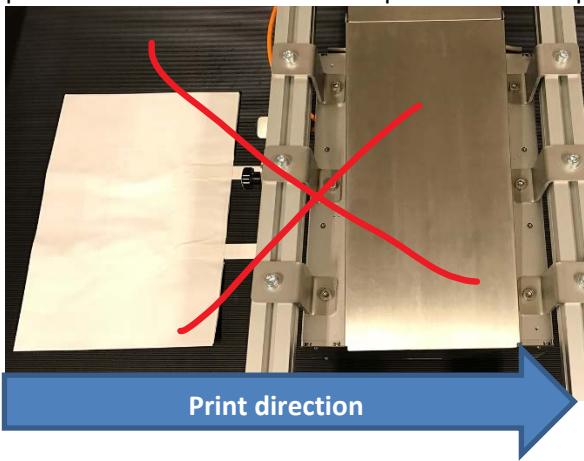
17.3.1 Correct direction of feeding

The recommended direction of feeding bags is sideways, ensuring that in particular the handles are outside the printing zone, i.e. not beneath the print head. Handles can face in both left or right of print direction.



17.3.2 Incorrect direction of feeding

If feeding bottom or top first, you may experience that the handles will interfere with both the sensor and print head and the bottom bump will touch the print head completely.



17.4 Print on the “back side” of a paper bag

It is possible to print on the side to which the bottom is folded, but a decision must be made in regards to the positioning; either a) print only in the optimal print zone or b) print across the fold.

If printing on special non folded bottom bags, then none of these scenarios below applies, as these type of bags are ideal for dual side printing.

17.4.1 Printing in the optimal print zone (back side)

When printing only in the optimal print zone, our experience is that the bag can be left folded as is. As long as the folded bottom is flat. If the bottom has a tendency to pop up, then this must be pressed in place in order for it not to pop up and touch the print head.



Figure 3 Printing on the backside, optimal print zone

17.4.2 Printing across the bottom fold

If there is a need to print across the bottom fold, then the fold must be folded towards the other side and pressed flat in order for it to remain flat during printing.



Figure 4 Printing on the backside, across the bottom fold

18 Preparations before starting a print job

A general challenge for printing bags is the uneven surfaces that may touch the print head area and transfer ink back to the substrate. Most commonly it is not the actual nozzles that are touched but the areas before and after the nozzles. This area will often have small puddles of residual ink from the wiping process, which in general is not problem, except when printing on uneven surfaces such as bags.

It is therefore extremely important to ensure the whole print head is clean and not just the nozzles.

18.1 Cause for residual ink on PH and how to limit the occurrence

18.1.1 The wiper roller

Ensure the wiper roller is clean and relatively dry.

Wet roller

If the wiper roller looks wet with ink, often shiny, then it is recommended to “dry” the roller, this achieved best by removing the roller and then cleaning the roller:

1. Use clean fresh tap water to rinse the ink
2. When visually clean, rinse with demineralized water to remove particles
3. Gently squeeze the microfiber materials
4. Finally pad dry the roller with a lint free cloth and leave to dry.

Note: Running multiple heavy or medium cleans should not be necessary, it will also result in a “wet” wiper roller.

Dirty roller

If the wiper roller is dirty, such as large paper fibres or ink that is stuck to the roller, remove those using the cleaning procedure just described, but this time with focus on removing those bits.

In both cases we recommend having a clean spare microfiber roller to ensure the continuation of production.

Note: As per usual recommendations, discard the roller if it looks fluffy and/or has broken fibres

18.1.2 The maintenance cap

Ensure that the cap is clean and dry.

A dirty cap will transfer ink to the print head while capped. It can occasionally cause clogged nozzles or ink contamination, but a dirty cap will always leave residual ink on the print which can smear on uneven substrate.

18.2 Wipe print head before start of job

When printing on bags or other uneven substrates it is recommended to wipe the print head manually before a print job. This is to ensure that all residual ink is removed before start of job. Note that this will require that the cap and roller is in a good condition as explained in chapter 18.1.

Cleaning the print head manually is done by wiping a lint free cloth soaked in demineralized water across the print head surface, swiping across the PH as shown below (*note: do not rub certain areas*):



Figure 5 Start wipe

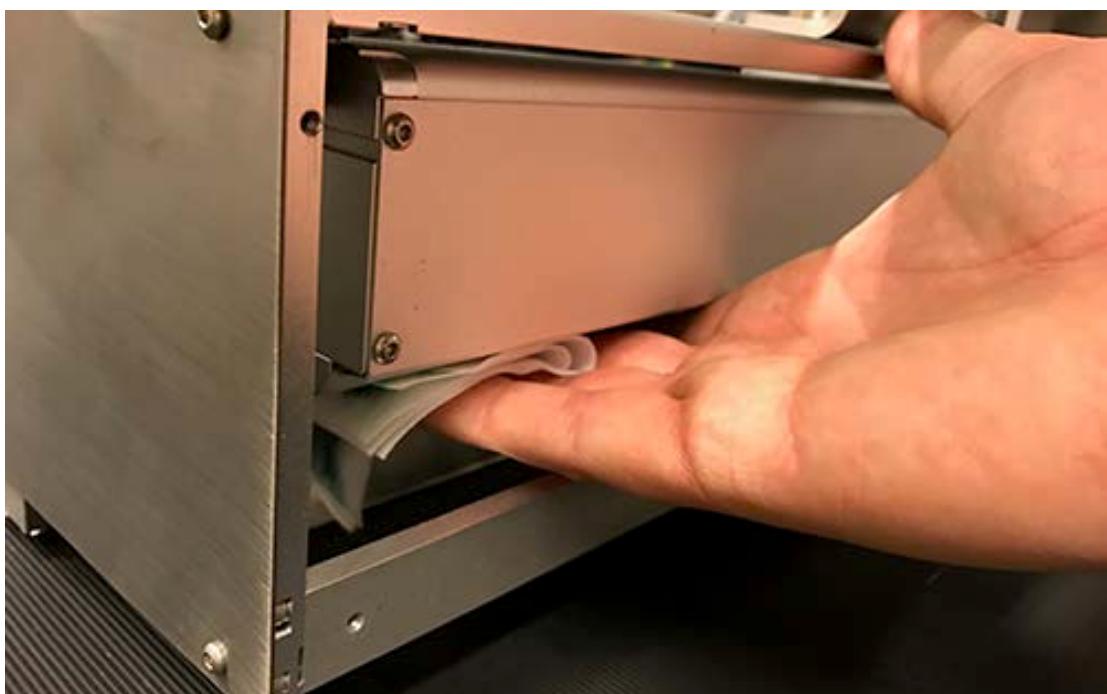


Figure 6 End Wipe

19 Recommendations and expectations

19.1 Print speed

Printing at 18 m/min (12ips) will reduce the chance of the bag hitting the print head. Particularly when exiting the print zone

19.2 Web/substrate cleaning

We generally recommend cleaning the substrate using a vacuum cleaning device. This will reduce the amount of fibres entering the print engine, contaminating the print head, wiper roller and cap.

19.3 Mid job cleaning frequency

It is difficult to recommend a general setting of the mid job cleaning interval, however if the bags are dust/fibre free, 100-200 bags between maintenance cycles should be achievable.

19.4 Printing on wood

Print on plain wood works well. However, depending on the grain of the wood, the ink may bleed a bit into the fibres, but we find that most wood used for wine gift boxes works well.

For very detailed artwork we see enhanced quality after applying a clear coating before printing. The coating can be purchased at Trojanlabel.

19.5 Avoid Vacuum active under print head

It is important not to have vacuum suction directly under the print head, as this can dry out the print head.

19.6 Expectations

The operator will have optimal print conditions by following the above guidelines. This will ensure a good print quality, however due to the great variance in substrates we cannot guarantee that some smearing will never occur.

20 Examples

20.1 Printing in print zone



Figure 7 Print zone



Figure 8 Small printzone due to large handles and bottom

20.2 Printing on bags without bottom fold

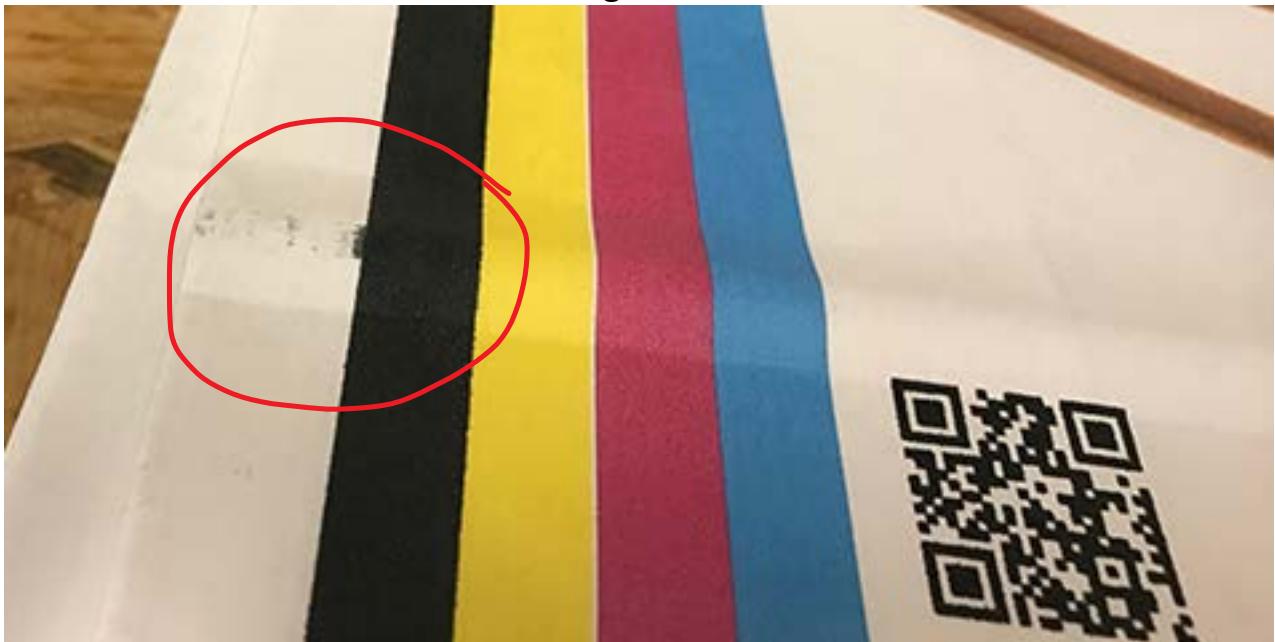


Figure 9 Bottomless bags

20.3 Printing in print zone, smear from dirty Print head



20.4 Print on the bottom bend touching Print head



20.5 Print over bottom bump, good scenario



In the above case we are printing over the bump, but due to the relatively thin paper, there is no issues with smearing.