T3-OPX user guide

Version 1.2

1 Specification and general information

1.1 Certificate and Compliance

T3-OPX specific
CFR Title 47 Part 15 Subpart B (2020)
ISED ICES-003 Issue 6 Published 2016 Updated 2019
CENELEC EN 55024:2011+A1:2015, CISPR 35:2016Ed.1.0
CENELEC EN 55032:2015, CISPR 32:2015
CENELEC EN 61000-3-2:2014, IEC 61000-3-2 Ed 5:2018
CENELEC EN 61000-3-3:2008, IEC 61000-3-3 Ed 3.1:2017
Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements (R2019) [CSA C22.2#62368-1:2014 Ed.2]
Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements [UL 62368- 1:2014 Ed.2]
Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements [IEC 62368- 1:2014 Ed.2+C1;C2]
Audio/Video, Information and Communication Technology Equipment - Safety Requirements [EN 62368- 1:2014+C1;C2]
Mail Table specific
CFR Title 47 Part 15 Subpart B (2020)
ISED ICES-003 Issue 6 Published 2016 Updated 2019
CENELEC EN 55024:2011+A1:2015, CISPR 35:2016Ed.1.0
CENELEC EN 55032:2015, CISPR 32:2015
CENELEC EN 61000-3-2:2014, IEC 61000-3-2 Ed 5:2018
CENELEC EN 61000-3-3:2008, IEC 61000-3-3 Ed 3.1:2017
Motor-Operated Appliances [UL 73:2011 Ed.10+R:08Aug2018]
Motor-Operated Appliances (Household and Commercial) [CSA C22.2#68:2018 Ed.8]
Electrical Standard for Industrial Machinery [NFPA 79:2017 Ed.2018]
EN 60204-1:2006+A1;C1: Safety Of Machinery - Electrical Equipment Of Machines - Part 1: General Requirements

1.1.1 Emissions

EMISSIONS TEST REPORT

FULL COMPLIANCE

Report Number: 104211238BOX-001
Project Number: G104211238

Report Issue Date: 01/10/2020

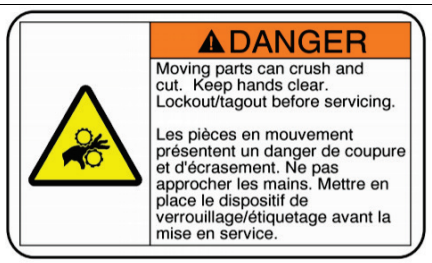
Model(s) Tested: 43160000
Model(s) Partially Tested: None

Standards: CFR Title 47 Part 15 Subpart B (2020)
ISED ICES-003 Issue 6 Published 2016 Updated 2019

Tested by:	Client:
Intertek Testing NA	AstroNova, Inc
70 Codman Hill Road	600 E Greenwich Ave
Boxborough, MA 01719	West Warwick, RI 02893-7526
USA	USA

Report prepared by	Report reviewed by
Michael Mehrmann / Associate Engineer	Kouma Sinn / EMC Staff Engineer

1.2 Warning Symbols



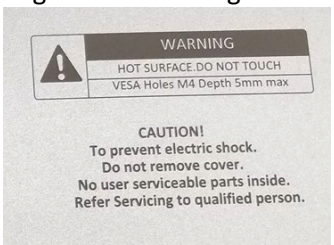
There are crush warning stickers placed on the front and back side of the unit, as the unit can move down towards the table.

Front

Back

Sticker in French

Engravement in English



Warning stickers and engravements on the back side of the touch screen, indicating the depth of the VESA holes (5mm), that the screen can become hot on the back side and the used should never open the cover of the screen, as this may only be serviced by an experienced and product trained technician.

1.3 Introduction

1.3.1 Original instructions

These instructions are original instructions made by Trojanlabel for the Trojanlabel digital over-printer T3-OPX.

1.3.2 Purpose

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

1.3.3 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.

1.3.4 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.

1.4 General Information

1.4.1 Manufacturer

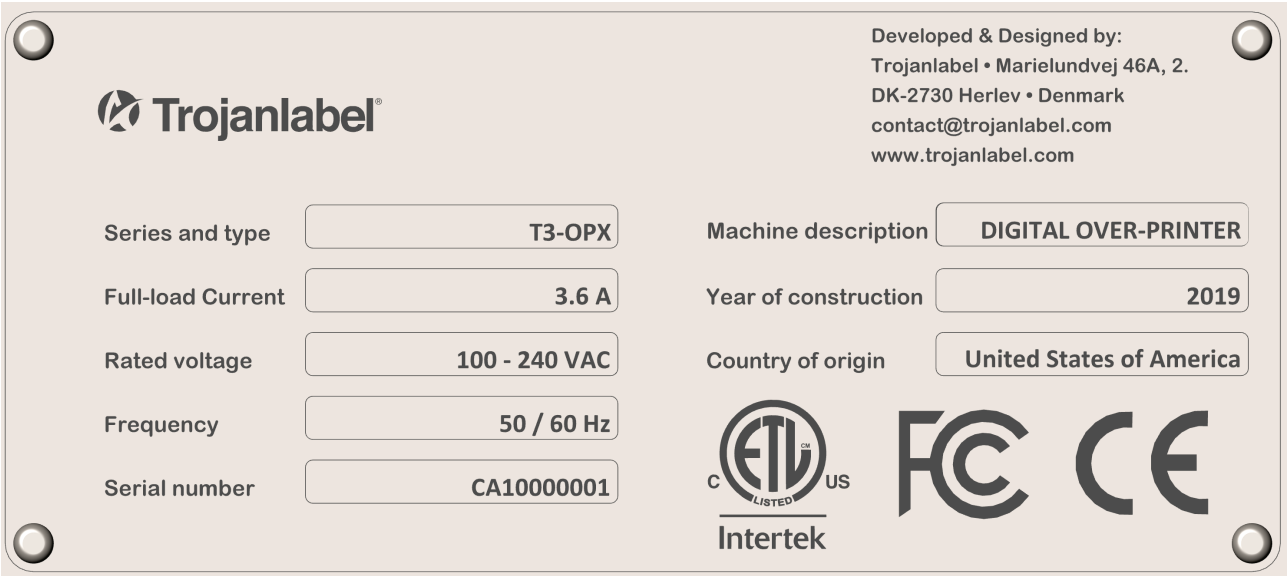
The machine has been manufactured by:
AstroNova, Inc.
600 E Greenwich Ave
West Warwick, RI 02893
USA

1.4.2 The machine’s designation

The machine’s complete designation is Digital Over-Printer type T3-OPX.

1.4.3 Machine plate

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



1.5 Specification and Application

1.5.1 General description

The machine consists of a metal cabinet, ink delivery system, service door, print engine, embedded PC, touchscreen, media sensor, printhead and four ink cartridges.
If any changes or alterations are made to the machine, these changes or alterations must be reflected in these instructions as necessary.

1.5.2 The machine's purpose and intended use

Application: The machine is only to be used to print on materials which meet the material specification requirements. The machine must not be used for any other purpose than the purpose mentioned above.

1.5.3 Warning about foreseeable misuse

The T3-OPX 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.

1.5.4 Specifications T3-OPX

Operation	
Ink Type	Pigmented ink, 4 Individual CMYK cartridges
Resolution	**High Resolution Mode:** 1200 x 1200 optimized dpi from 600 x 600 input dpi. **Production Mode:** 600 x 1200 optimized dpi from 300 x 300 input dpi.
Print speed	Up to 18 ips (27m/min)
Print Area	Width: 11.7” (297mm)
Media Sensors	- Optical TOF sensor, adjustable position - Pressure sensor for height control

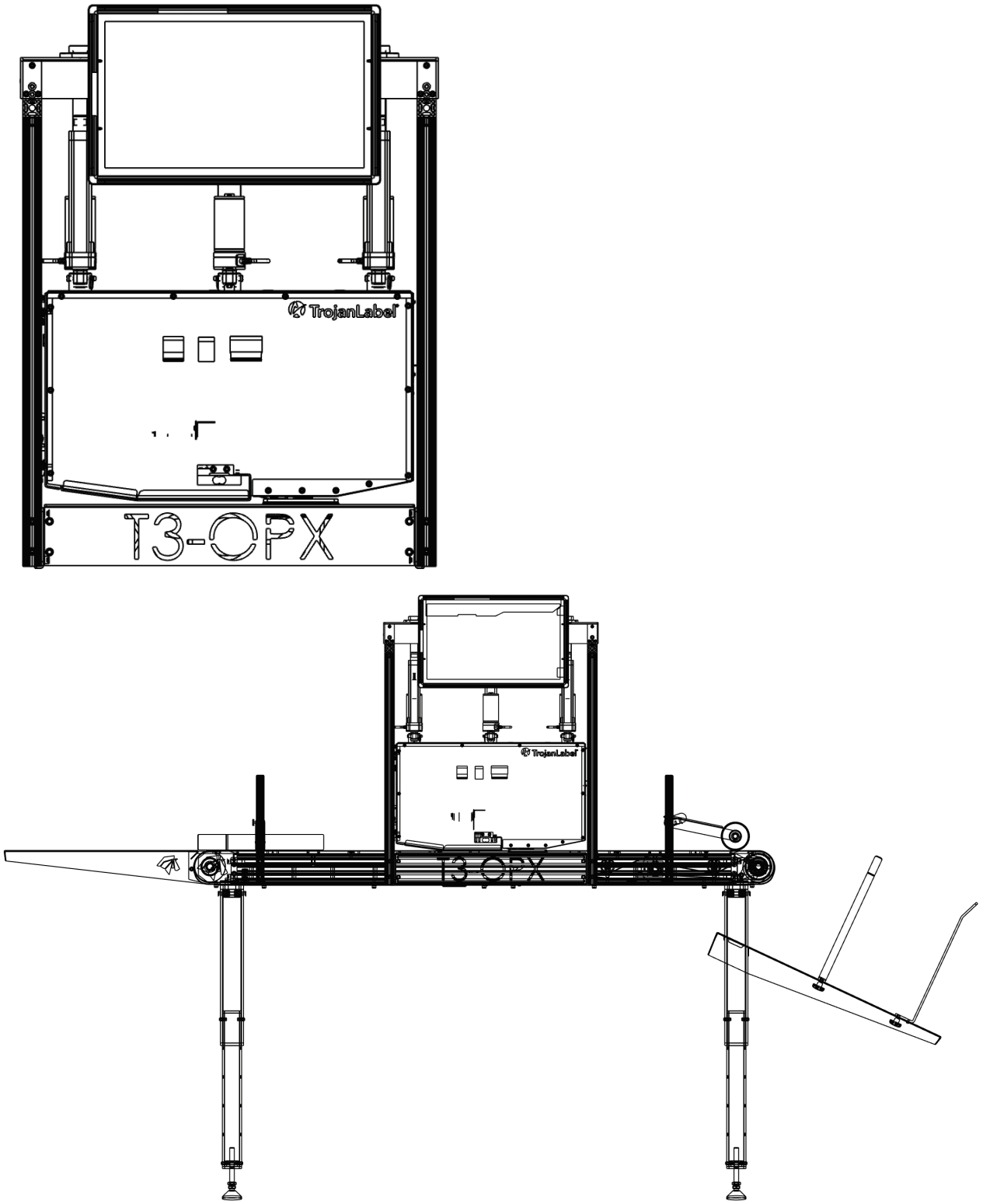
Environmental & Physical	
Printer operation	Operation 20° to 30° C (59° to 86° F) Transport –40° to 60° C (–40° to 140° F) Relative humidity 20 to 80% Altitude 0 to 3048 m
Power requirements	100-240V AC – 50/60 (9A power supply)
Power consumption peak	103.2 watts
Print unit dimensions	Width 518 mm Length 516 mm Height 290 mm (excluding height adjustable bracket)
Media cleaning unit dimensions	Width 457.5 mm Length 154 mm Height 261 mm
Touchscreen	15.6”
Print unit weight	20 kg
Media cleaning unit weight	3.5 kg
Drop detection	Print then scan process, using offline scanner (Epson v600).

Supplies	
Ink Cartridges	CMYK pigmented: C: 238 ml M: 233 ml Y: 225 ml

	K: 498 ml ISO pages: K: 20.000 pages CMY: 16.000 pages
Maintenance	Replaceable service tray
Ink Type:	Pigmented aqueous inks
Average drop volume	10 pl K, 8.5 pl CMY
Nozzle count	59136 (4224 x 14)

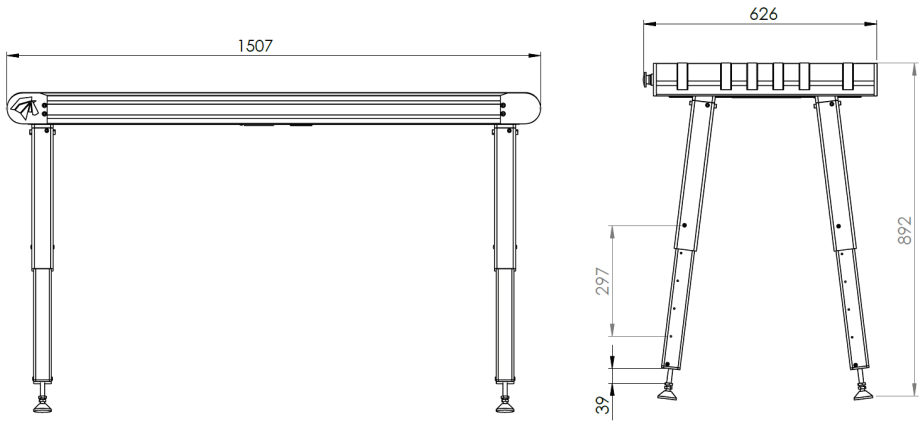
Material	
Types	Uncoated Paper, Card board, paper board, wooden boards, paper bags Most porous materials
Width	Depends on transport/installation 600mm (Trojan standard table) 1000mm (Trojan wide table)
Supported image lengths	25,4 mm – 914,4 mm (1 in - 36 in)
Thickness	0 – 95mm (automatic height calibration)

Connectivity	Wired connection (802.3 LAN (10/100/1000) Ethernet port) 2 x serial ports (I/O and encoder) USB for scanner Wired LAN
Software:	TrojanControl Software RIP
Hardware:	Windows PC

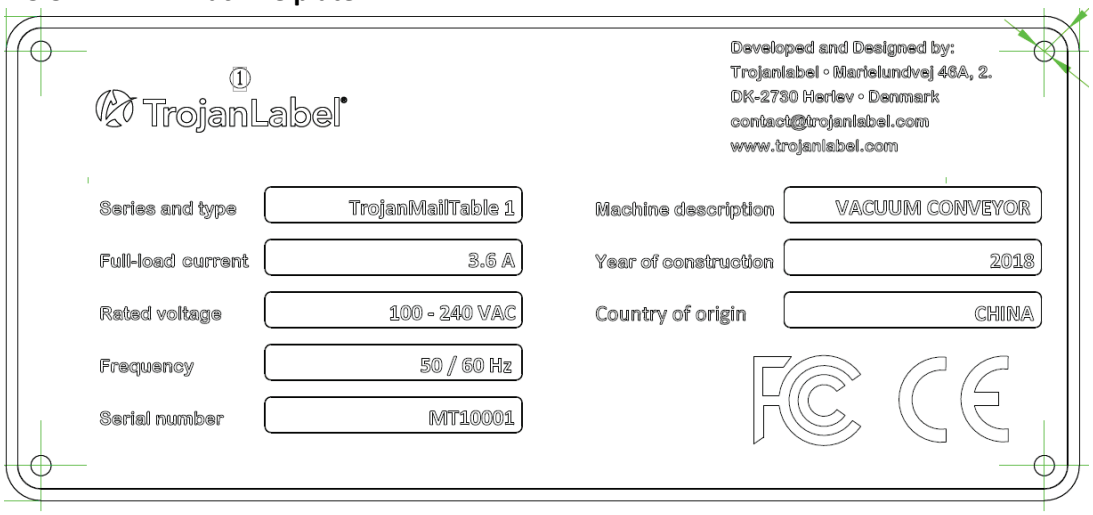

TrojanLabel
T3-OPX
TrojanLabel
T3 OPX

1.5.5 Specifications MailTable 1 (MT1)

MailTable 1 Standard	
Speed	Up to 18 ips (27m/min)
Power requirements	100-240V AC – 50/60 Hz (2.5A power supply)
Dimensions	Width: 626 mm (incl Emergency stop button) Length: 1507 mm Height: From 892 mm to 595 mm
Support material width	600 mm
Weight	75 kg/ 165 lbs without accessories
Suction	5 fans adjustable speeds
Belts	6

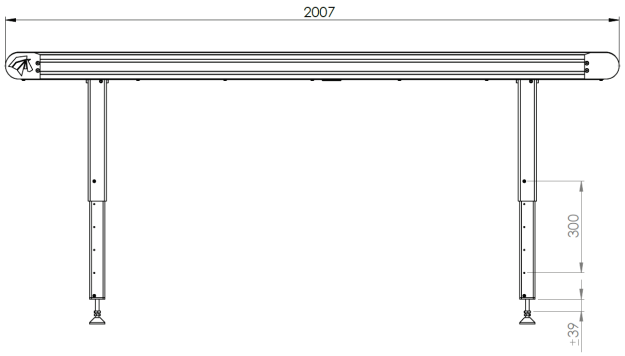


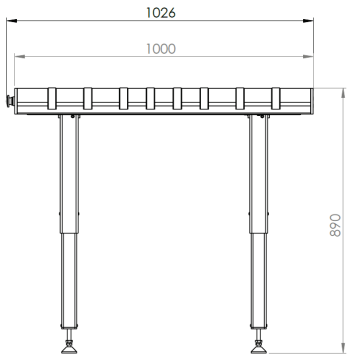
1.5.5.1 MT1 Machine plate



1.5.6 Specifications MailTable 2 (MT2)

MailTable 1 Wide	
Speed	Up to 18 ips (27m/min)
Power requirements	100-240V AC – 50/60 Hz (2.5A power supply)
Dimensions	Width: 1026 mm (incl Emergency stop) Length: 2007 mm Height: From 890 mm to 590 mm (5 positions)
Support material width	1000 mm
Weight	117 kg/ 258 lbs without accessories
Suction	5 fans adjustable speeds
Belts	8

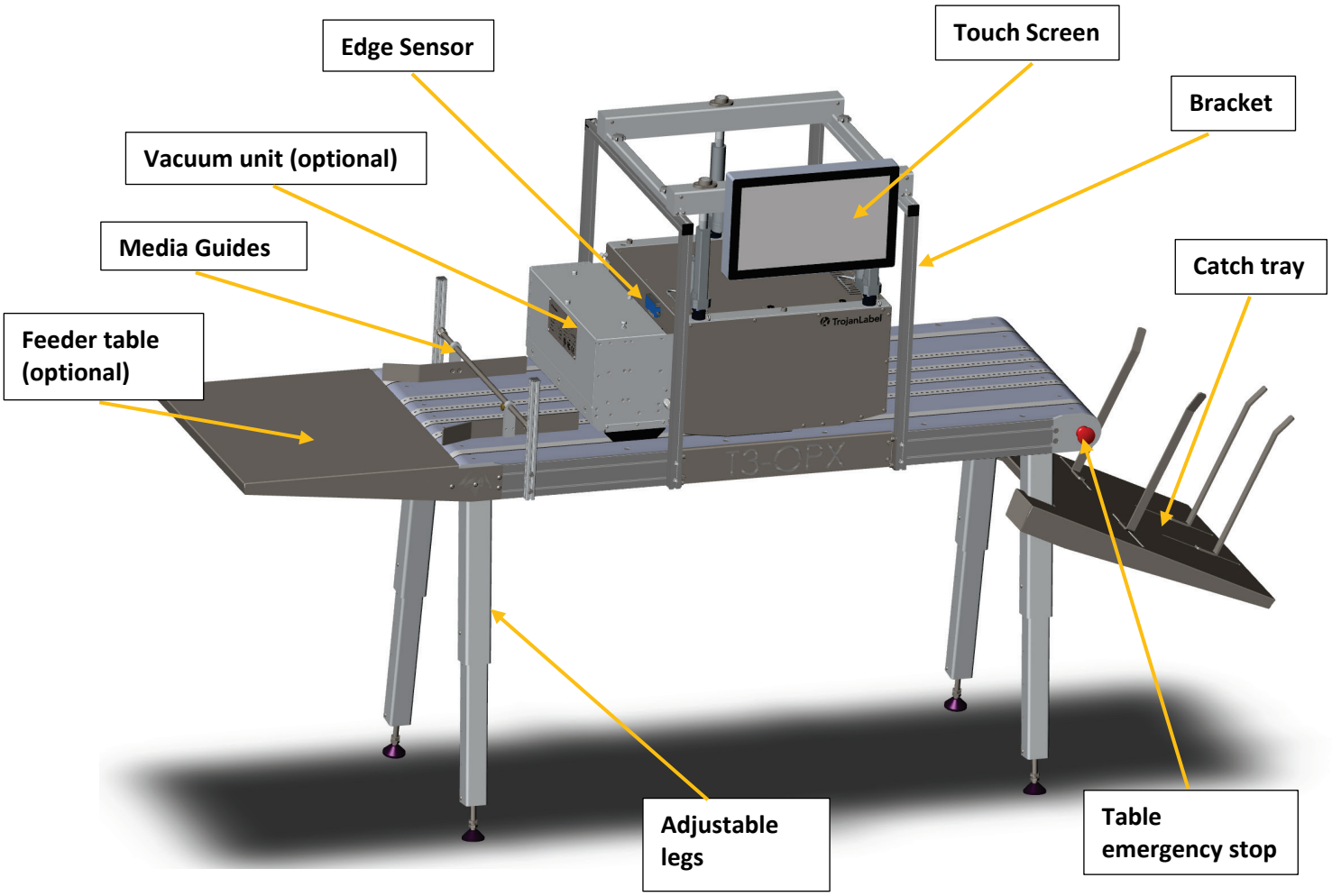




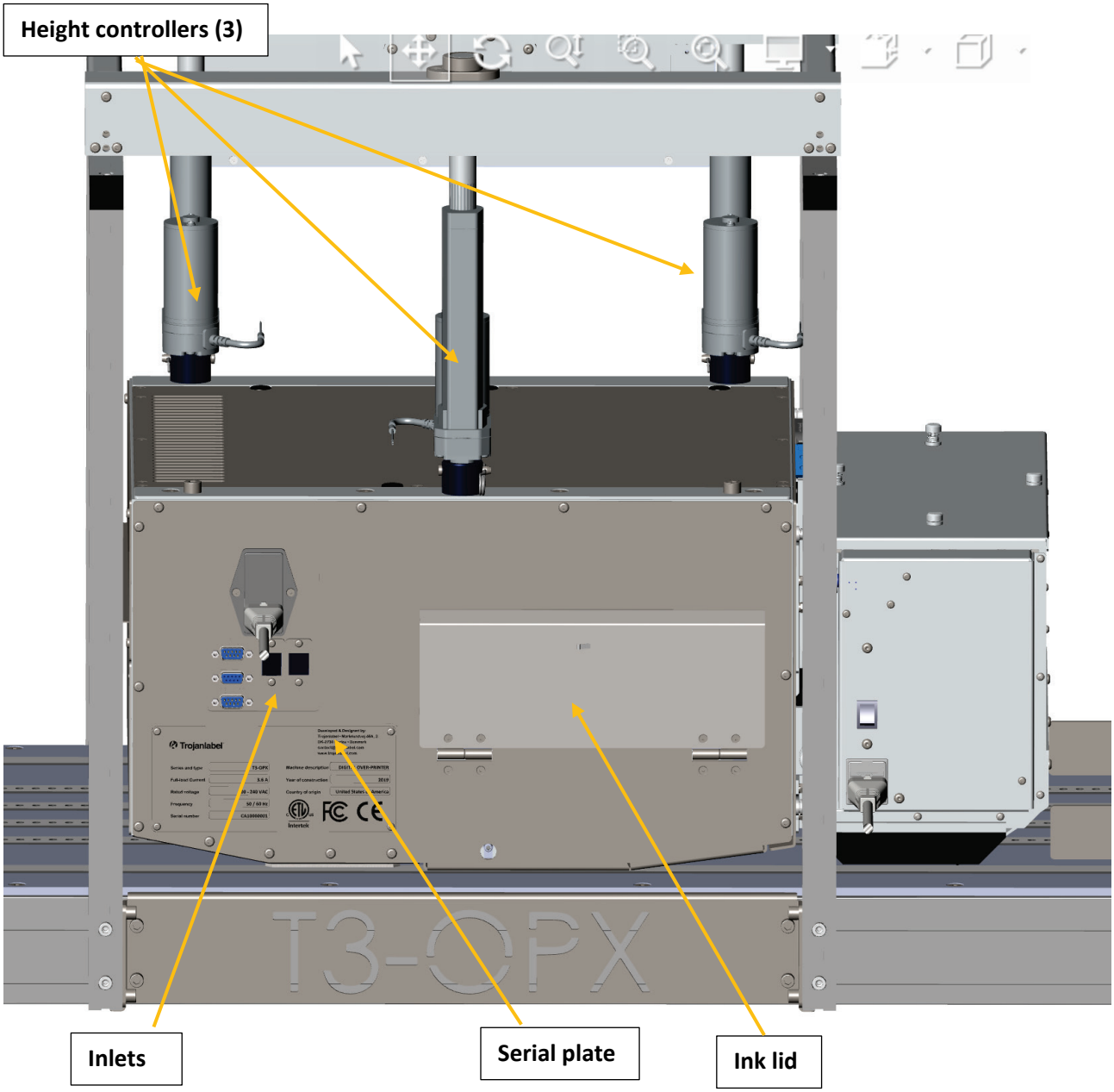
2 T3 OPX physical overview

This is example

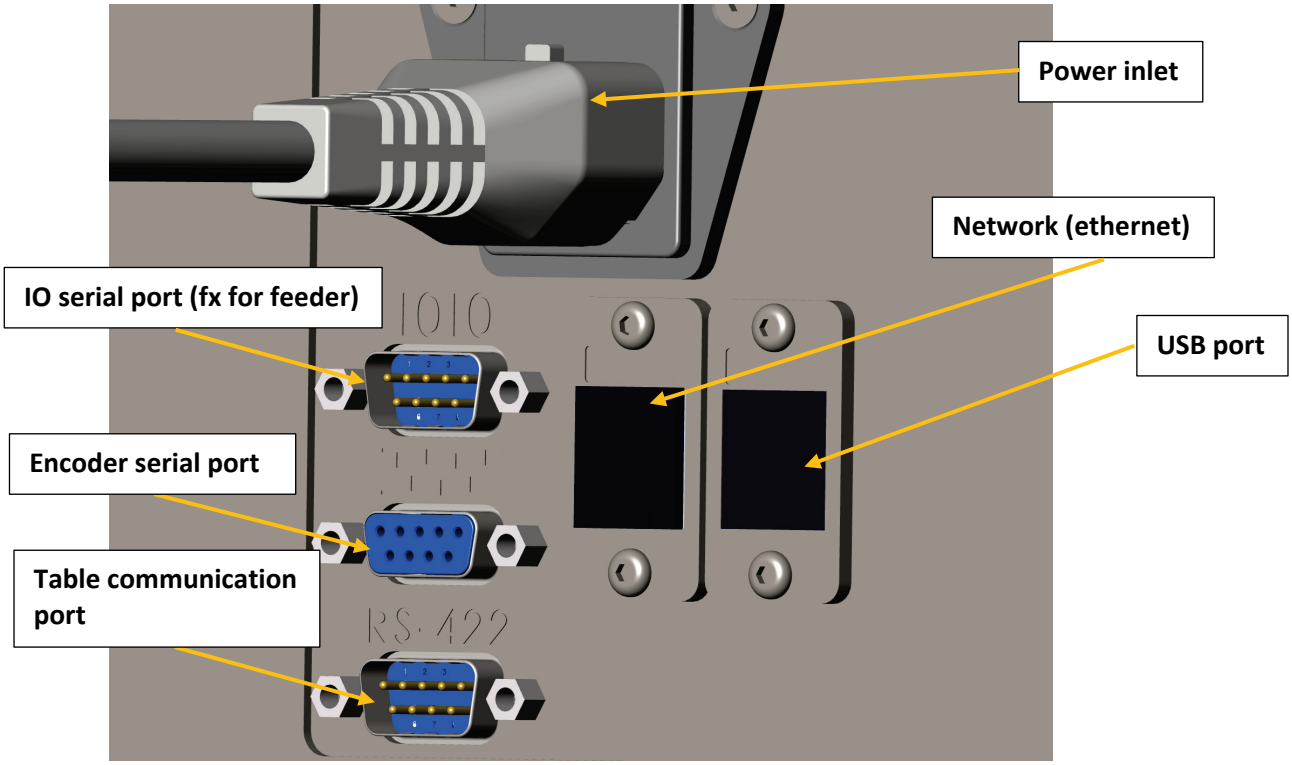
2.1 Front side



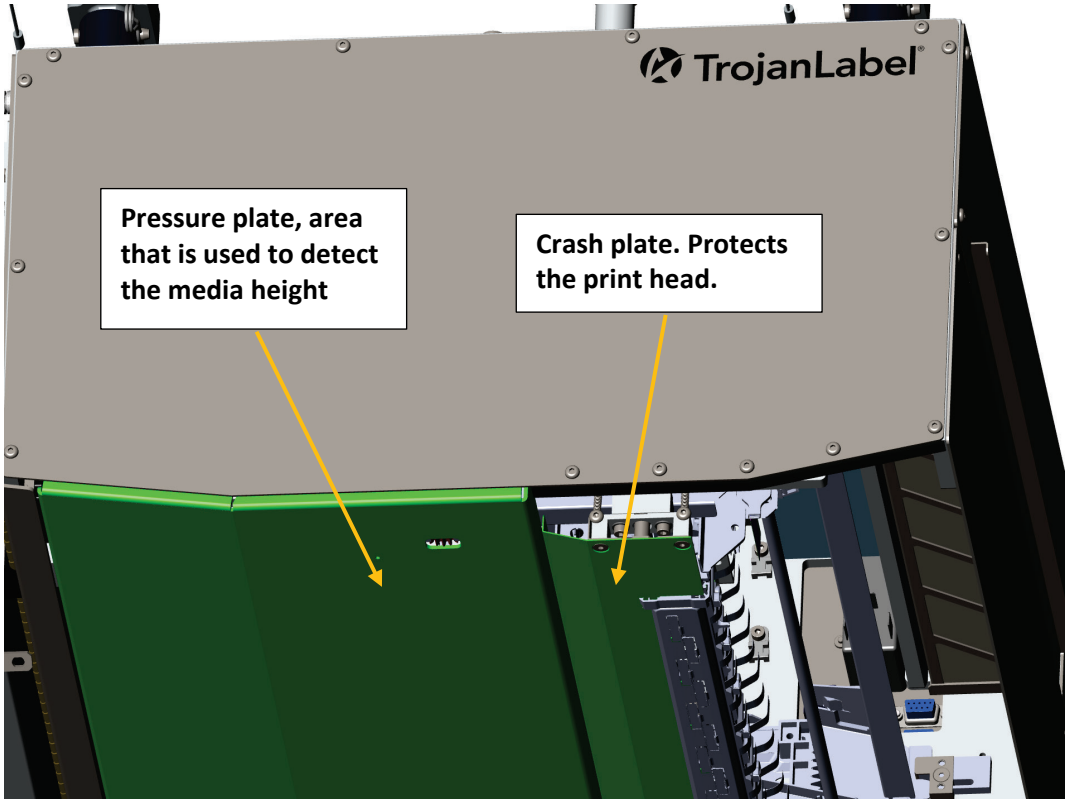
2.2 Backside



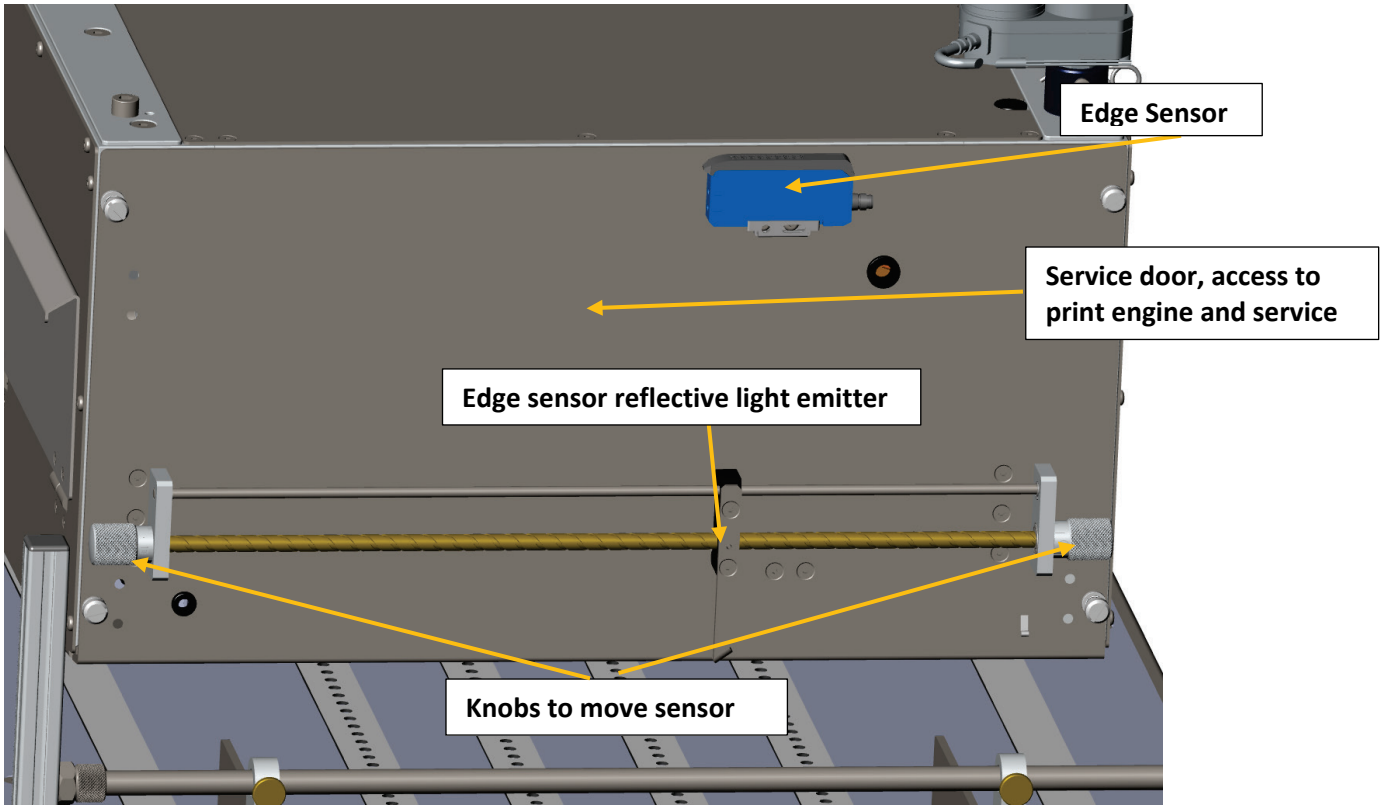
2.3 Inlets detail



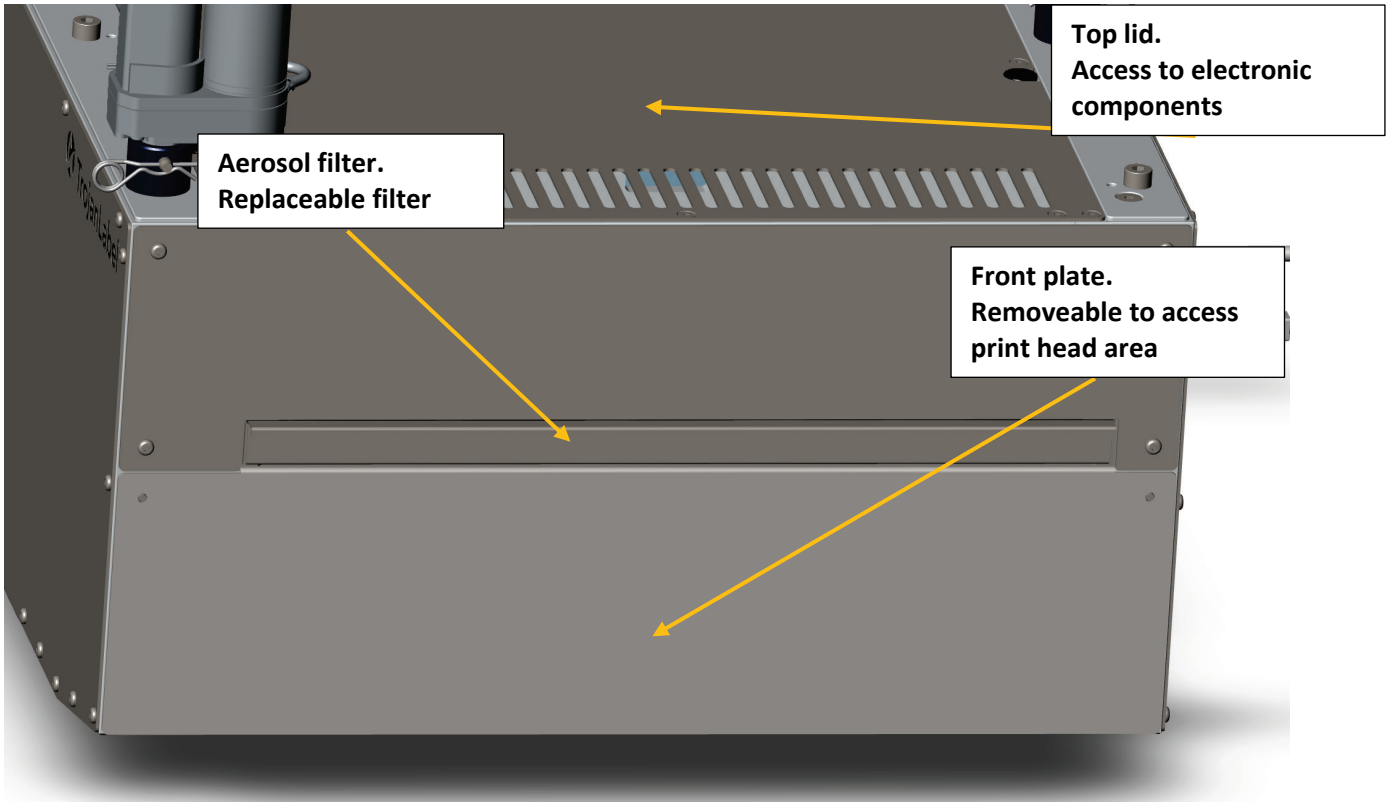
2.4 Bottom



2.5 Media Entry side (feeder side)



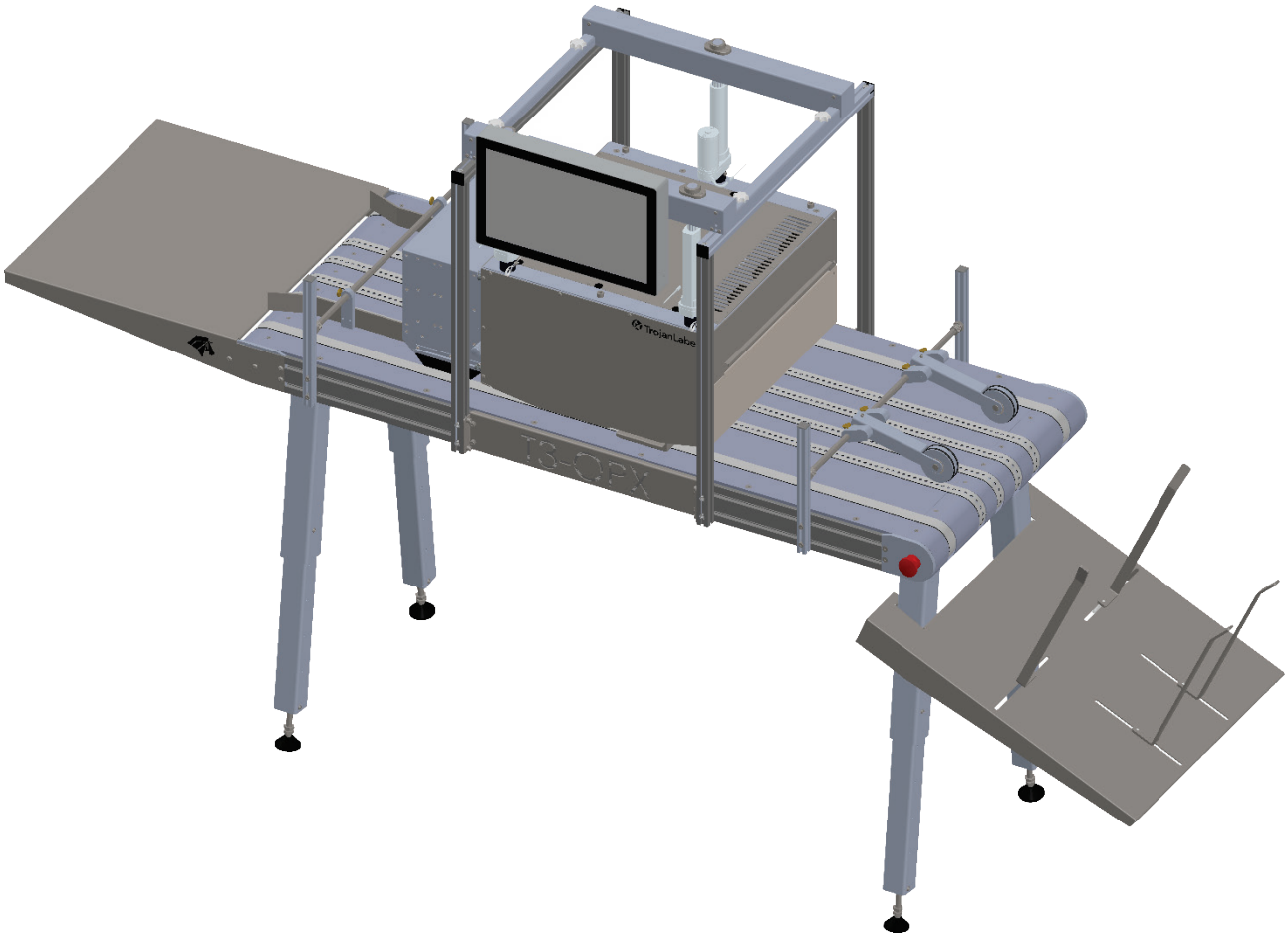
2.6 Media exit side



3 Installing the T3 OPX

This chapter describes how to install the T3-OPX using the standard bracket and height control actuators on a one of the two TrojanLabel conveyor tables (MT1 or MT2).
The operation of the mailtables are identical, only the dimensions of the conveyor tables separates them.
MT1 is 600mm wide and 1500mm long (excluding feeder and catch trays)
MT2 is 1000mm wide and 2000mm long (excluding feeder and catch trays)

The image below shows the T3-OPX installed on MT1.

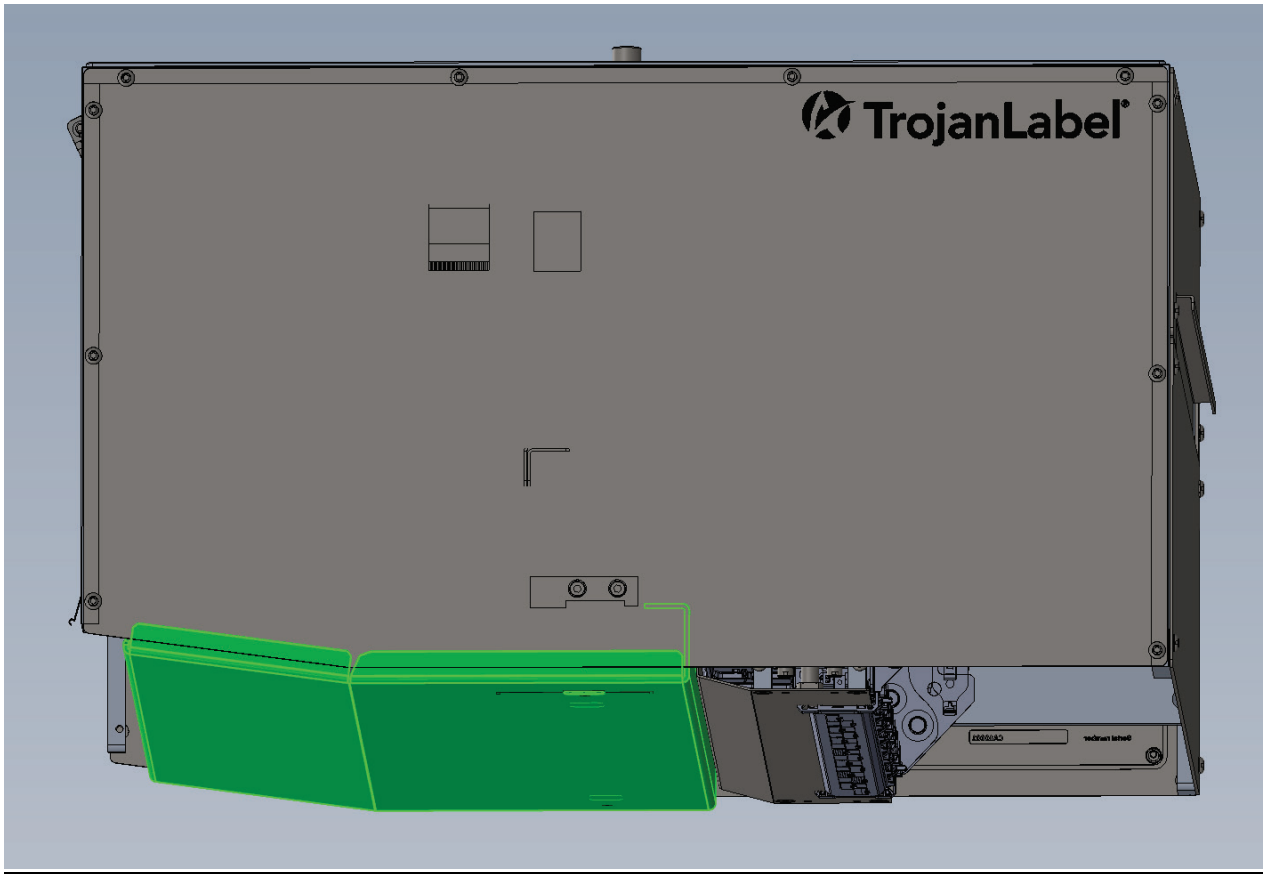


3.1 IMPORTANT:

Do not power on the unit, before reading this document.

The entry plate on the bottom of the T3 OPX printing unit is pressure sensitive. DO NOT drop the unit hard on any surface when moving it around pre-installation.

The plate is marked with green below is the pressure sensitive plate



Do not place the print-unit on any sides, other than horizontally.
Do not tilt the unit

3.2 Pre-requisites

1. Mail table (MT1 or MT2)
2. T3 OPX bracket system (for 600mm or 1000mm wide tables)
3. Allen key set 2.5 - 6mm
4. C-clip pliers

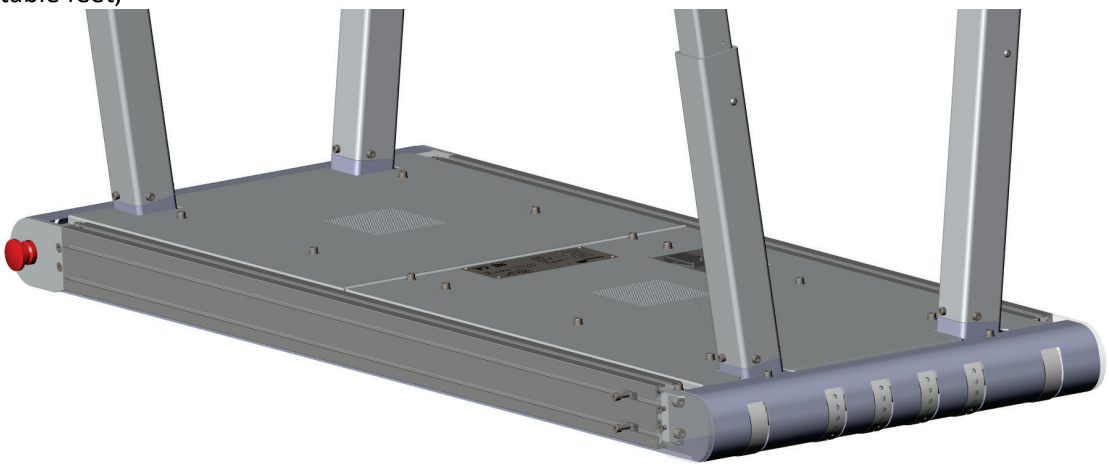
3.3 MailTable 1 or 2 setup

The process for the mailtable 1 and 2 is identical.

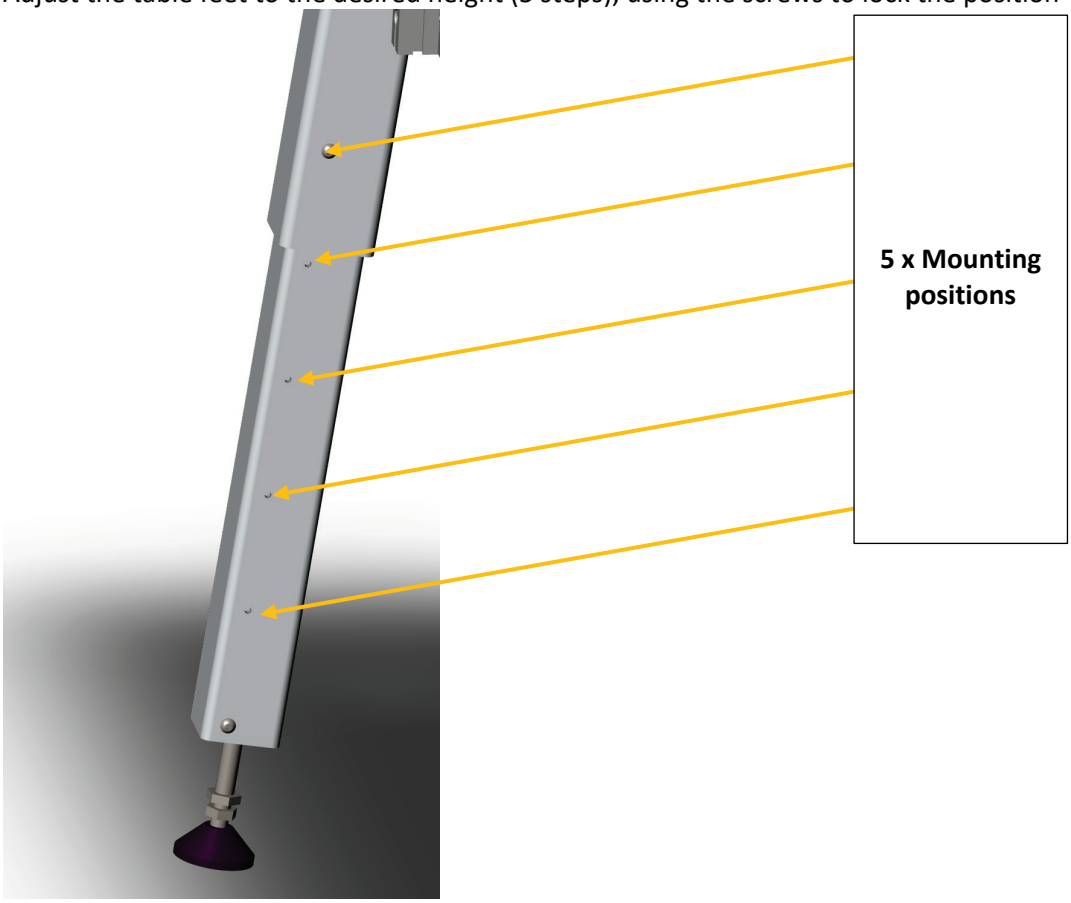
⚠	This step requires heavy lifting, ensure lifting equipment or extra personal is present to move the table (Check local rules and regulations). See chapter 1.5.5 or 1.5.6 for weight specifications.

1. Place the table upside down
    a. Place it on a mat or similar to protect the belts

2. Mount the table feet,



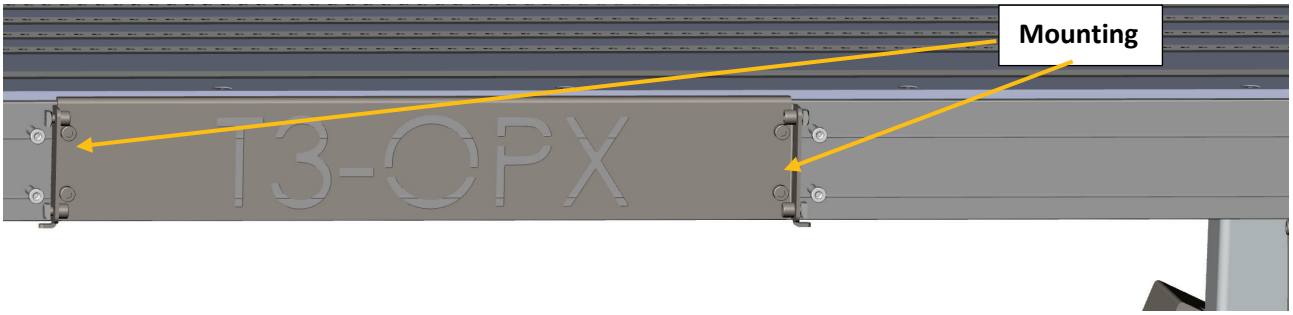
3. Adjust the table feet to the desired height (5 steps), using the screws to lock the position



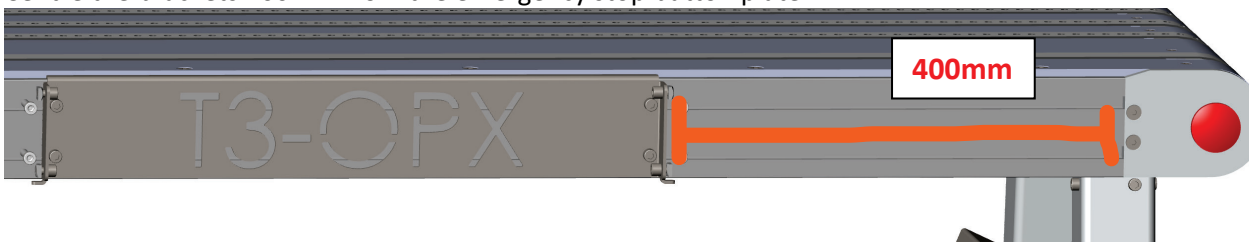
4. Turn over the table on its feet

3.4 T3 OPX Bracket system installation process

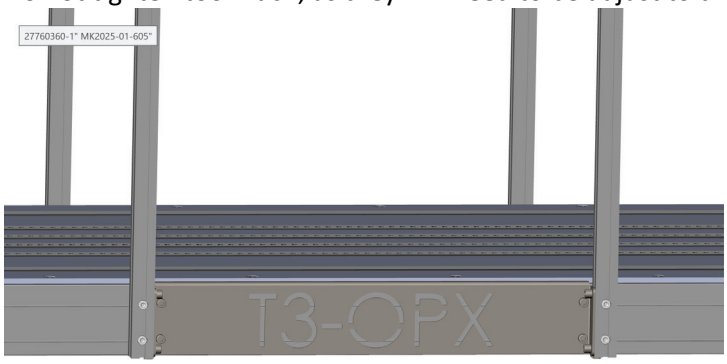
1. Mount side brackets on both table sides.
    a. Use 2x2 slot knots that are in the middle, leave at least one pair (up and down) on each side of the side brackets



b. Centre the brackets 400mm from the emergency stop button plate



2. Mount bracket system on the conveyor table
    a. Install the 4 corner posts loosely
        i. Do not tighten too much, as they will need to be adjust to the top bracket



b. Install top bracket, 4 screws

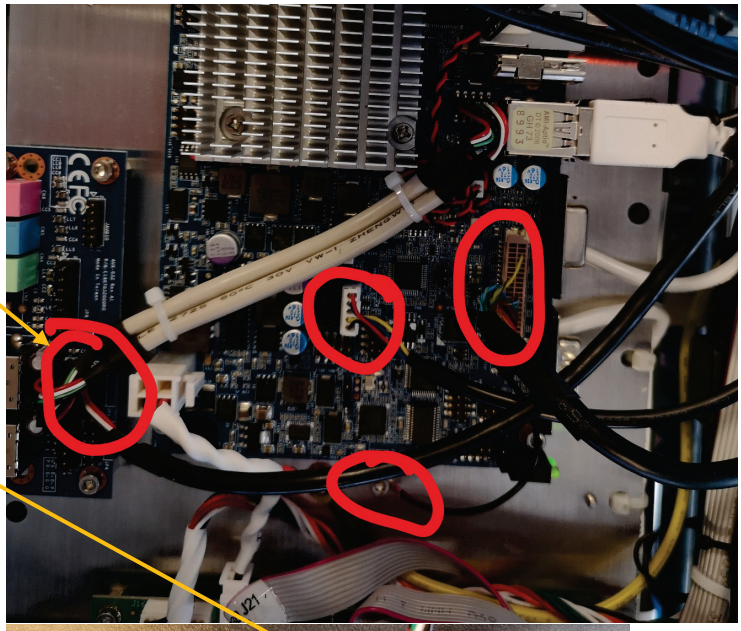
c. Ensure the bracket pairs on each side are positioned relatively correct to the other pair.

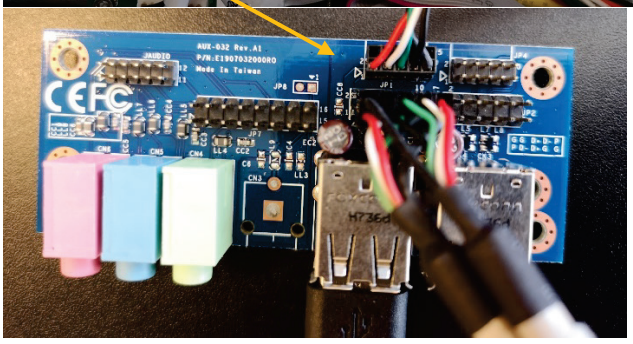
3. Carefully place the T3 OPX print unit on a box/surface that will raise the unit 25-35 mm under the bracket system.
    a. Using a raises surface will make it easier to fit the actuators to the top bracket system.
    b. Examples of raising the OPX unit, but this can also be a box (that can carry 20 kg)

4. Remove the OPX lid
5. Mount the screen
    a. Fit the screen on the bracket using the 4 screws
    b. Fit the cables on the PC (power, LVDS, mouse and ground)

Touch screen mouse connection, notice the RED cable must align with the white triangle

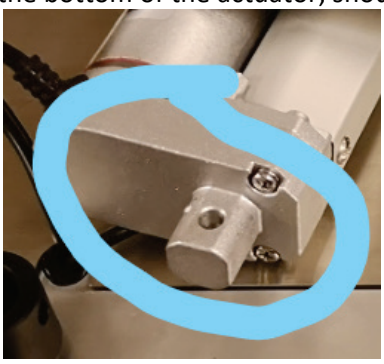
i.



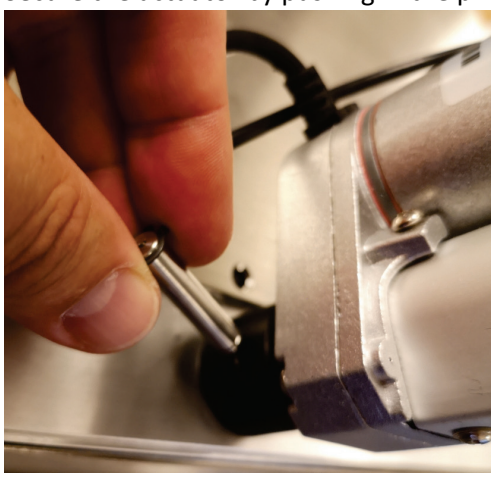


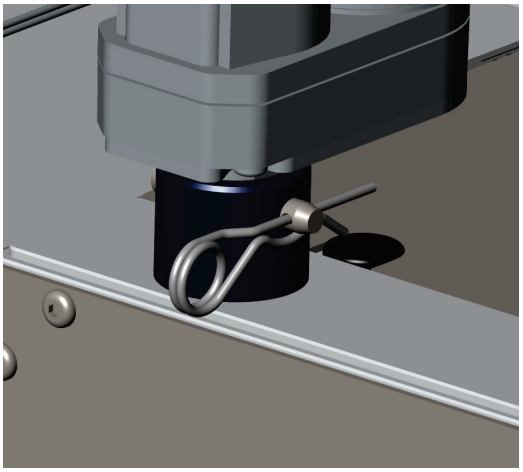
6. Mount the actuators on the T3 OPX unit
    a. Push each actuator into place in the corresponding black plastic holder (closest to where the actuator cable enters the unit).

b. Notice the rotation of the actuator. The “motor” should be facing inwards and the hole at the bottom of the actuator, should line up with the black plastic mount

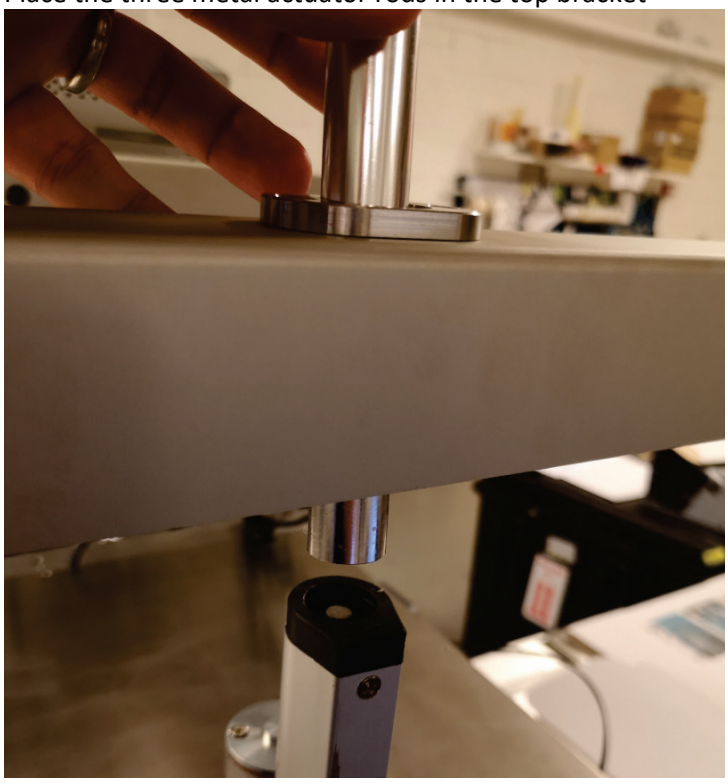


c. Secure the actuator by pushing in the pin and secure it with the Pin on the end

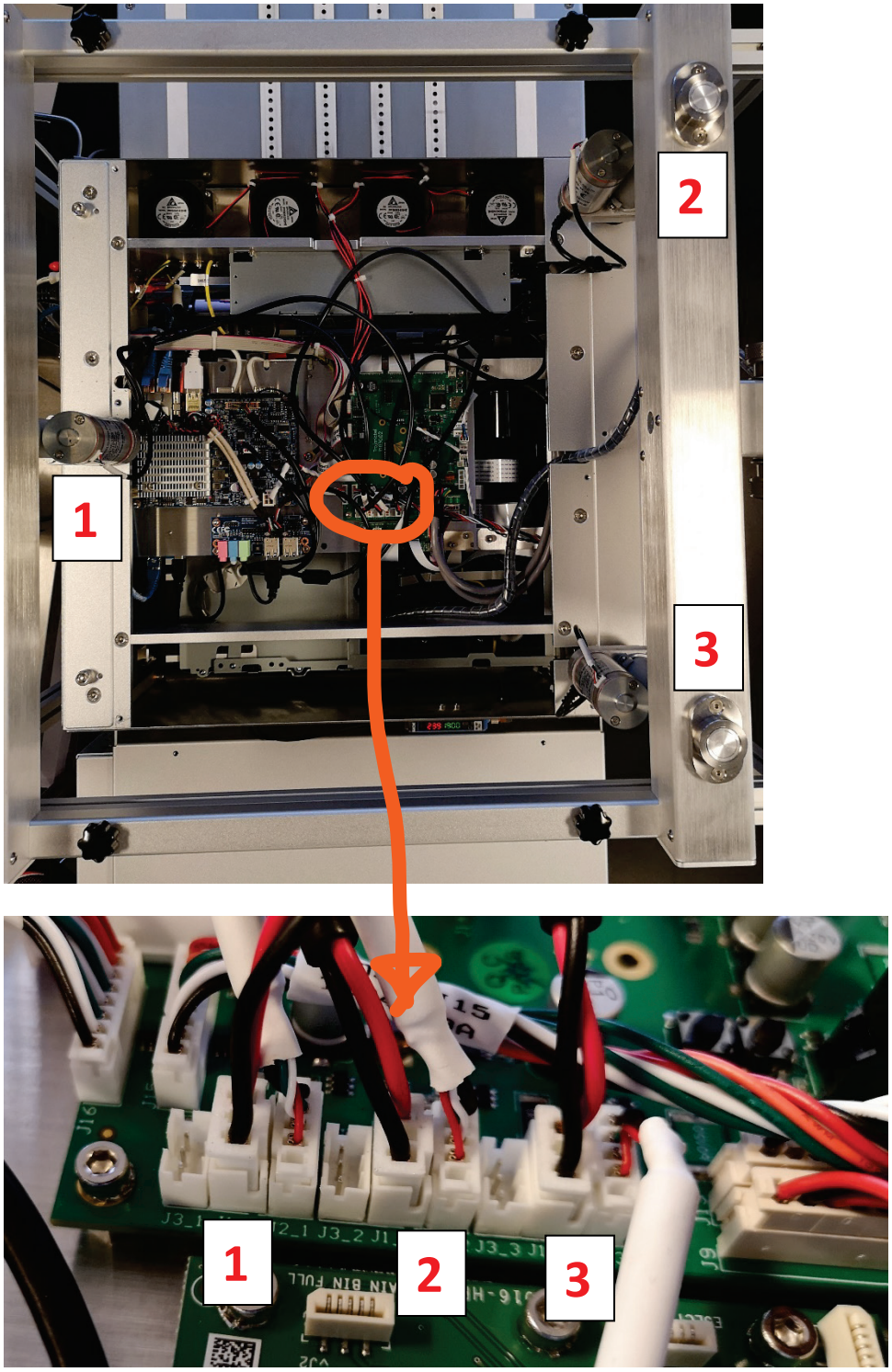




7. Install the actuators onto the bracket system.
    a. Place the three metal actuator rods in the top bracket



    b. Move the T3 OPX unit so each metal rod can fit into each actuator
    c. Push the metal rod into the actuator
        i. There may be some resistance pushig it through the plastic fitting at the top
    d. Screw the metal rod in place.
        i. Depending on the padded sureface the system is resting on, the metal rod will most likely hover a bit over the top bracket. This is normal and a part of the safety system.
    e. Carefully remove the padding under the T3 OPX print unit, ensure that the printer doesn't drop hard.
8. Connect the actuator cables.
    a. It is important that they are connected as below:



9. Mount the lid on the OPX

3.5 Connect encoder and table controls (Trojan MT1 and MT2)

Prerequisites: 2 x serial cables included with the table

1. Connect the encoder serial cable
2. Connect the table communication cable

3.6 Remove service tray plastic protection

Remove the orange plastic protection, that ensures the service tray do not shift position during transportation.

1. Open the service door
2. Remove the two plastic parts

3.7 Connect T3-OPX power supply cord and network cables

Prerequisites:
1 x power supply cord (with grounding)
1 x network cable

⚠	Grounding: Always use the supplied power supply cord connected to a grounded power outlet.

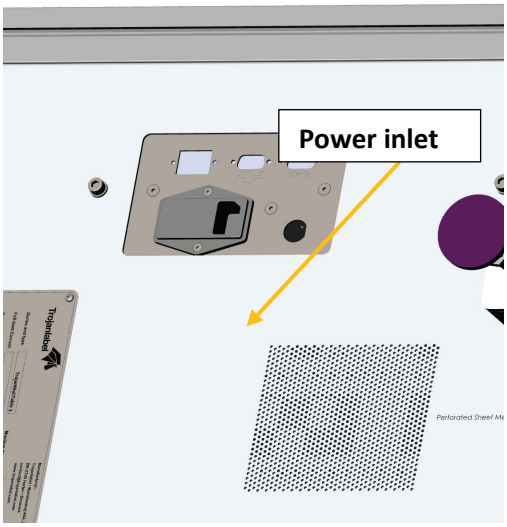
1. Connect the power supply cord to the printer power inlet
    a. See 2.3 Inlets detail for location
2. Connect the power supply cord plug to the power source outlet (grounded wall or extension cables)
3. Connect the network cable to the network inlet

3.8 Connect MT1/2 power supply cord

Prerequisites:
1 x power supply cord (with grounding)

1. Connect the power supply cord to the Mail Table power inlet

⚠	Grounding: Always use the supplied power supply cord connected to a grounded power outlet.



2. Connect the power supply cord plug to the power source outlet (grounded wall or extension cables)

3.9 Powering on

3.9.1 Safety Check

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

⚠	Grounding: Always use the supplied power supply cord connected to a grounded power outlet.

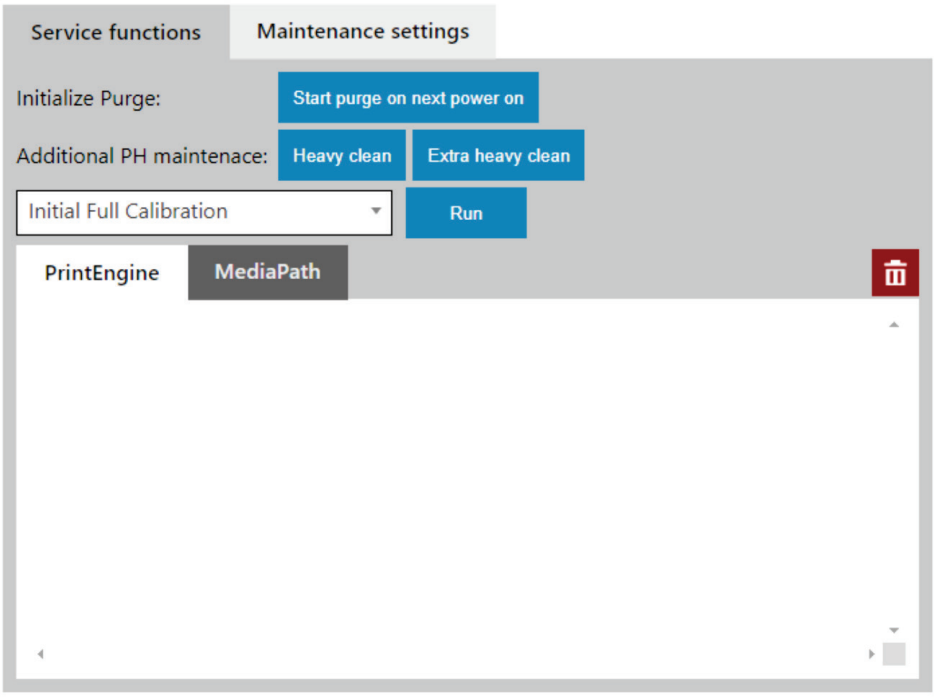
3.9.2 Power on process

Turn on the power via the power inlet switch on both T3-OPX and mail table (MT1/2)

3.10 Calibrate the table position and level unit

Calibrate the table position for the unit to determine the zero height position of the table and also ensure the unit is aligned to the table (x/y tilt). This is handled by the process below:

1. Open the service menu
2. Select “Initial Full Calibration” and press run
3. Wait for the process to finish, it will take a couple of minutes

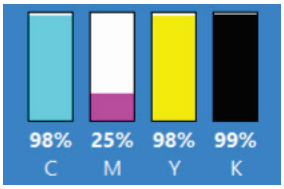


3.11 Installing Ink Cartridges

For safety, keep ink cartridges out of the reach of children. If ink is accidentally ingested, contact a physician immediately

Note: If the ink door is opened during printing, the printing will stop. This will not harm the machine.

1. Open the ink door on the back
2. Remove the orange plastic protection
3. Slide in the ink cartridge, nozzle end first, label side up. Push the cartridge in all the way. You will feel slight resistance near the end of this process as the nozzle engages the ink needles inside the printer. Repeat this step for each color.
4. Close the ink door
5. Confirm that the inks are recognized in the status bar on the touch screen. Below is just an example



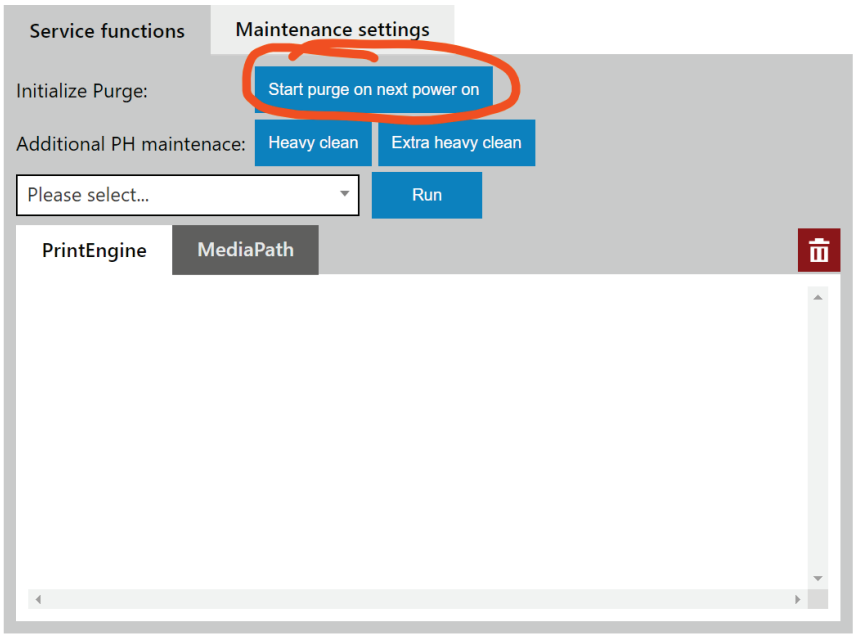
3.12 Purging the unit

The print engine must be purged to completely remove the shipping fluids. The fluids will be dispensed through the print head and into a spittoon that is supplied with the print unit. The process will take approximately 20 minutes.
The process will require the operator to place the spittoon in the correct position under the print head. The purge height will be automatic set by the process. Once all is in place, the unit is set in a special purge mode, which will require the operator to restart the unit (full power cycle).

Prerequisite:

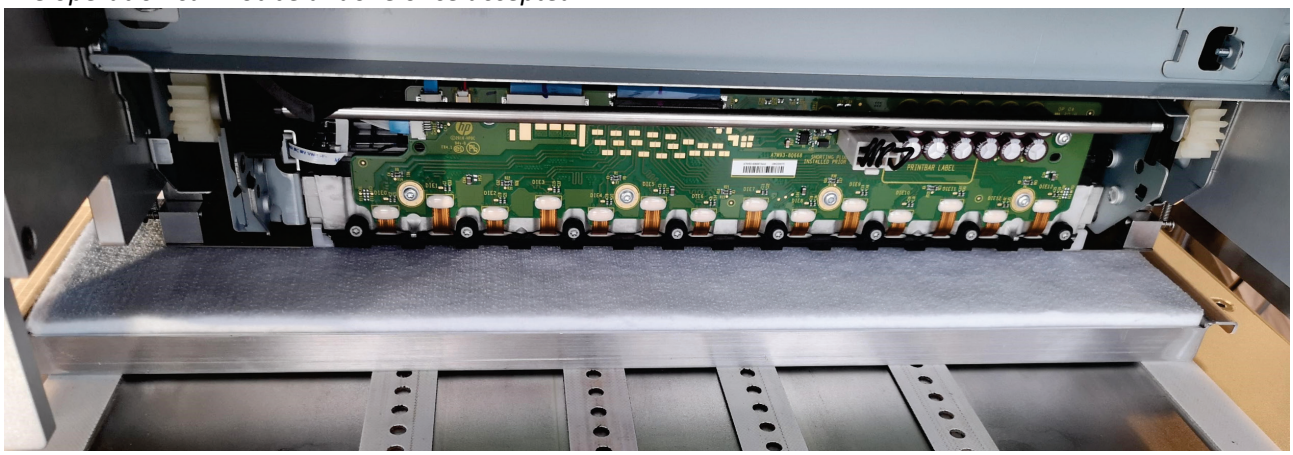
1. **Spittoon with absorption filter**
2. **Inserted inks**
3. **If using the TrojanMail table**
    a. **Table position has been calibrated (chapter 3.10)**

1. Open the service menu
2. Select “Start purge on next power on”



3. Confirm the process initiation:

Purge will deplete 300-350ml shipping fluid. It will require the spittoon placed under the print head. After pressing OK, print unit will be moved to the purge height and purge will start on next power on. The operation can not be undone once accepted.

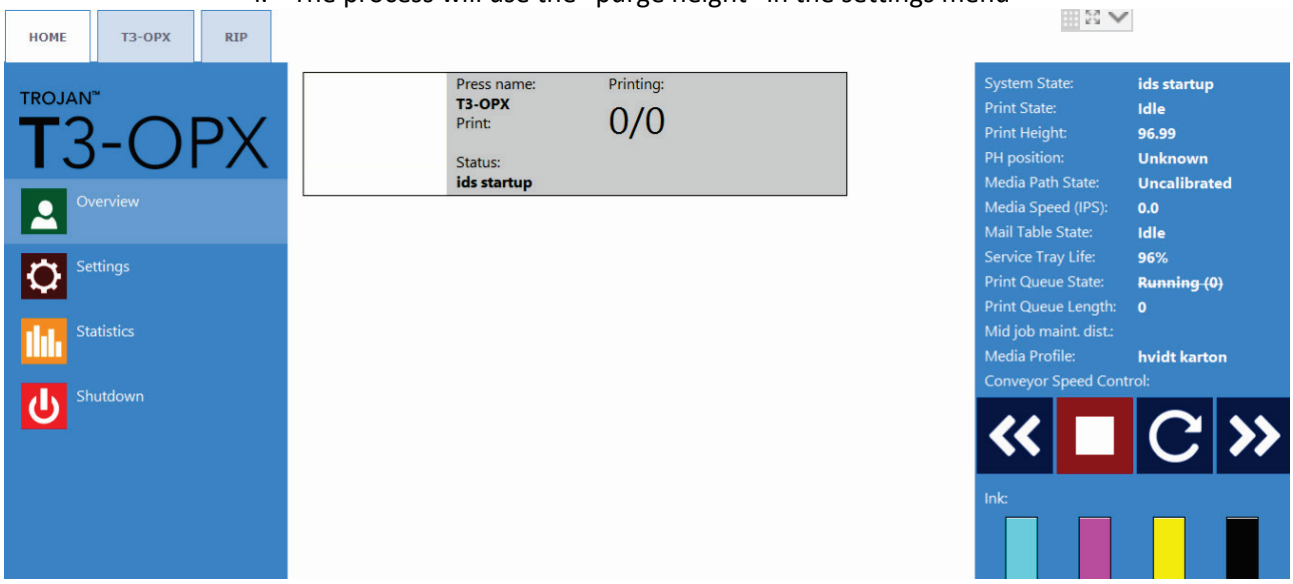


4. Success

    Purge process initialized successfully. Place spittoon under the print head, then power off the printer unit by switching off the main PSU. Purge will automatically start on next power on.

    a. If the unit failed to move to the print height, check if the height control has been initialized in the handling menu

i. The process will use the “purge height” in the settings menu

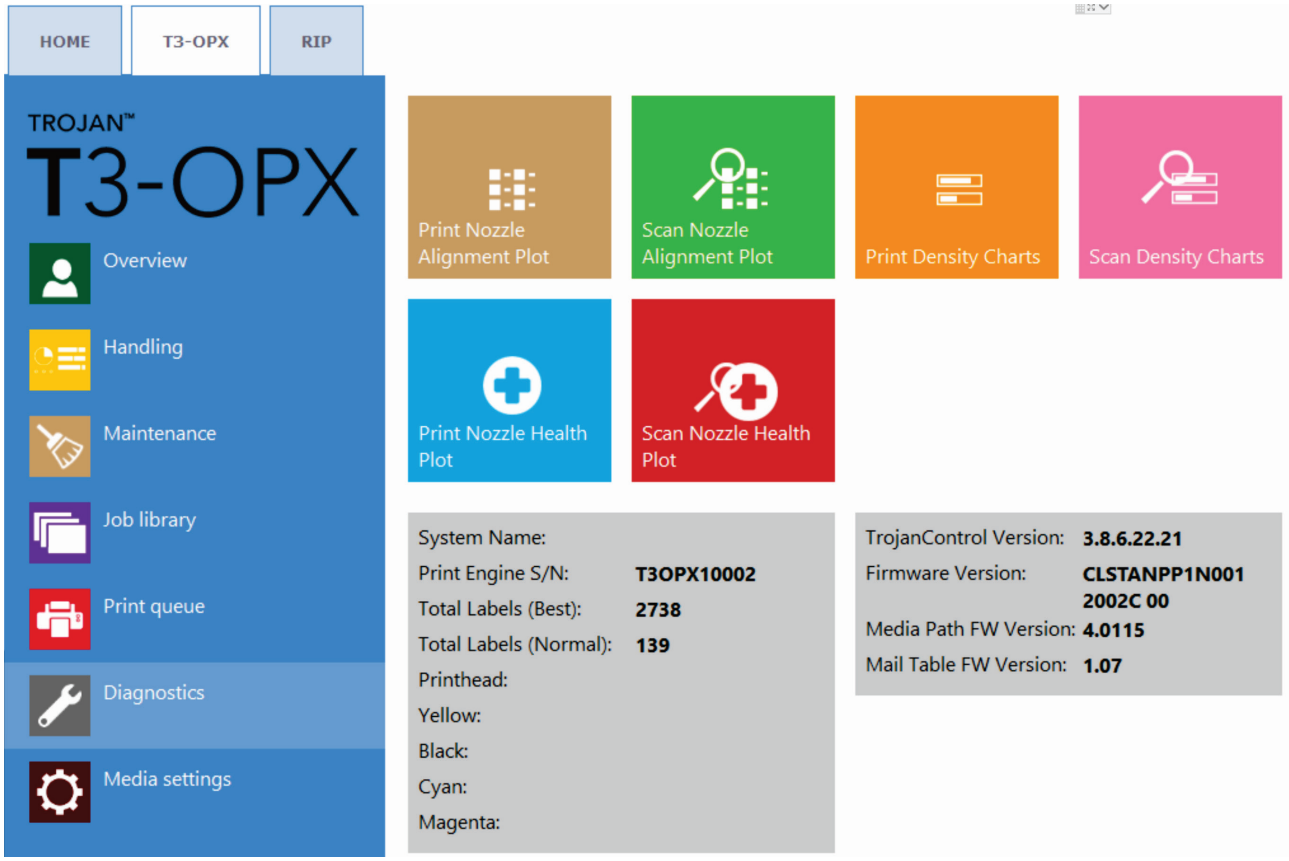


3.13 Calibrate the print head optional

The print head calibration routines consist of 3 parts:

1. Nozzle alignment
2. Color density
3. Nozzle health

All parts require a printing and scanning the result. The print unit will calibrate the nozzles and ink drop based scans. Overview of the Dianosticsa menu:



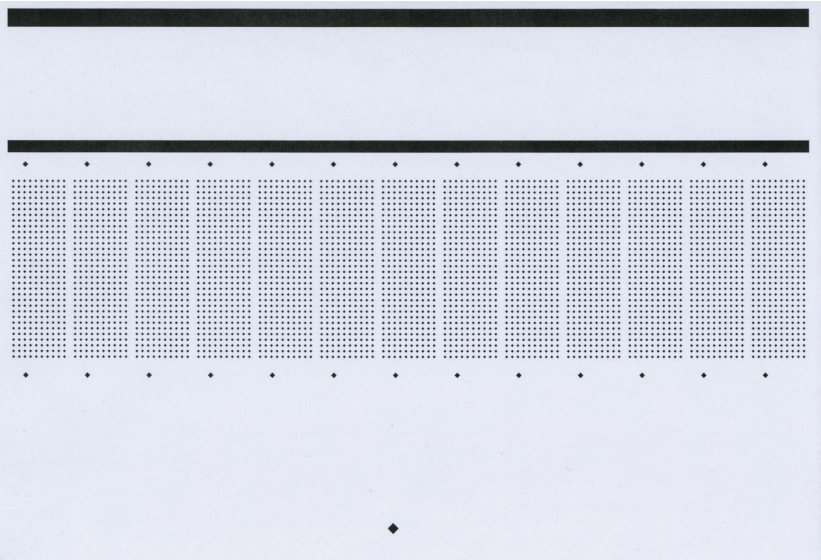
Prerequisites:

- 1 x scanner (EPSON v600)
- High grade ColorLok paper (Minimum A4), 160 grs (or heavier)
    - ColorLok logo
- Print height is calibrated to the high grade paper height
- Media entry sensor is calibrated to the high grade paper

3.13.1 Nozzle alignment

1. Goto Diagnostics menu
2. Press ”Print Nozzle Alignment Plot”
3. Place the paper on the table
4. Press ”Print Nozzle Alignment chart”

a. If the print looks good, which should look like this

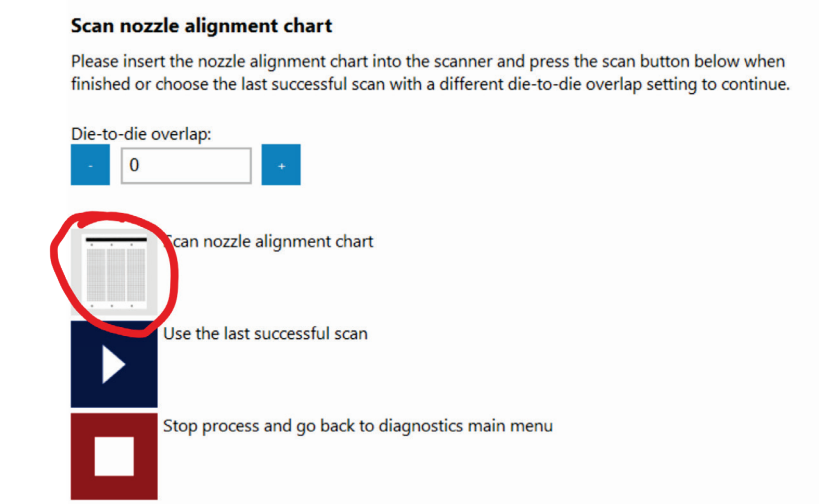


i. Press ”Go back to the diagnostics main menu”

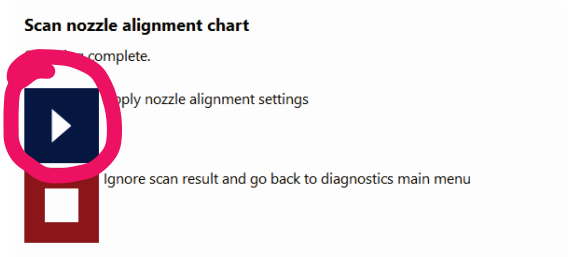
b. If not

i. Reprint, go to step

5. Press Scan the nozzle alignment chart
6. Set Die-to-die overlap to 0
    a. This feature is explained in chapter 9 “Printing on uneven surfaces (die-to-die overlap feature)”.
7. Press ”Scan nozzle alignment chart



8. If successful, then apply the settings.



3.13.2 Color Density

1. Goto Diagnostics menu
2. Press ”Print Density charts”
3. Repeat the below for each color (CMYK)
    a. Place the paper on the table
    b. Press ”Print density chart for <C, M, Y or K> color”
    c. Scan the result
    d. If successful, then apply the settings.

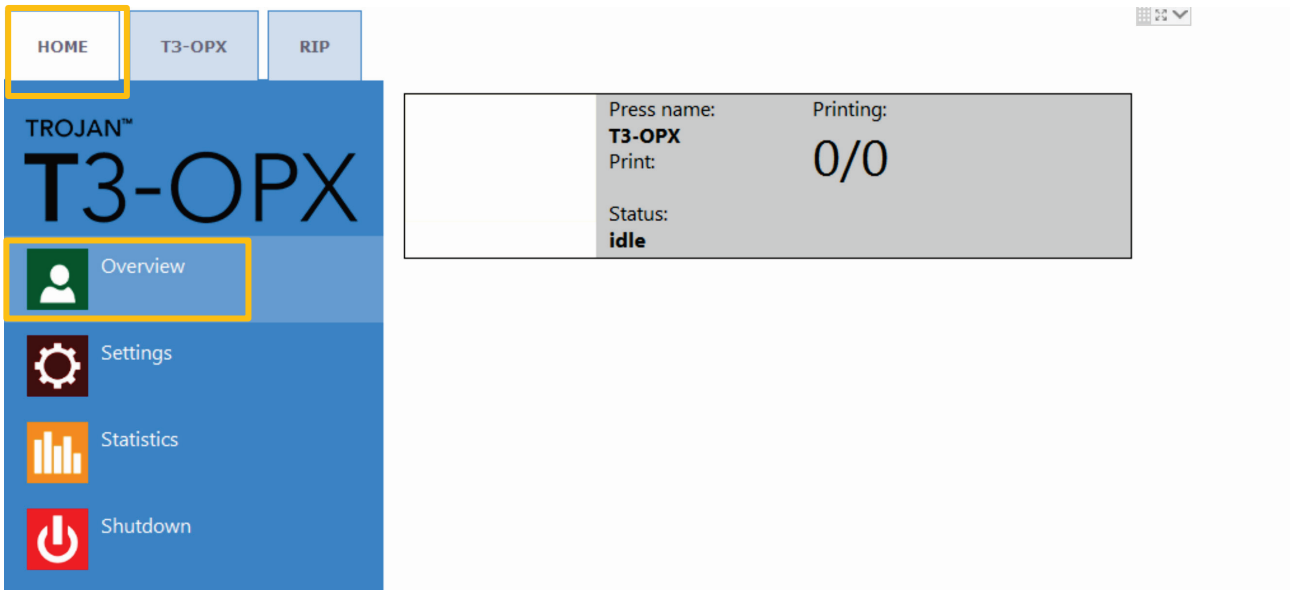
3.13.3 Nozzle health alignment

The nozzle health alignment is good to determine the current state of the nozzles and will show which once that are not printing. Scanning the printed output, will enable the printer to some extend cover the missing nozzles. However, please note that there a no guarantees that it will eliminate issues with missing nozzles.

1. Goto Diagnostics menu
2. Press ”Print Nozzle health plot”
3. Place the paper on the table
4. Press ”Print Nozzle health plot - ODD”
    a. Scan the result
    b. If successful, then apply the settings.
5. Place the paper on the table
6. Press ”Print Nozzle health plot - EVEN”
    a. Scan the result
    b. If successful, then apply the settings.

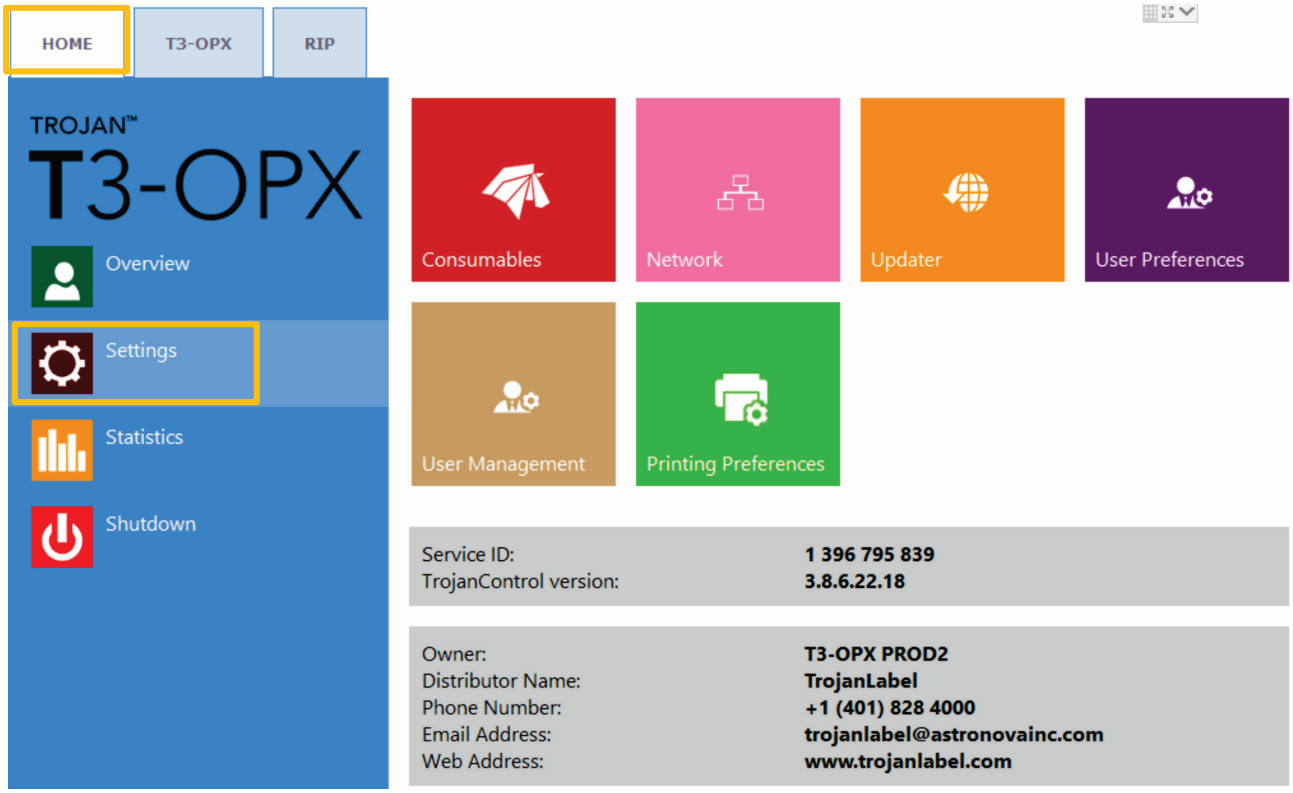
4 General Settings (HOME tab)

4.1 Overview menu



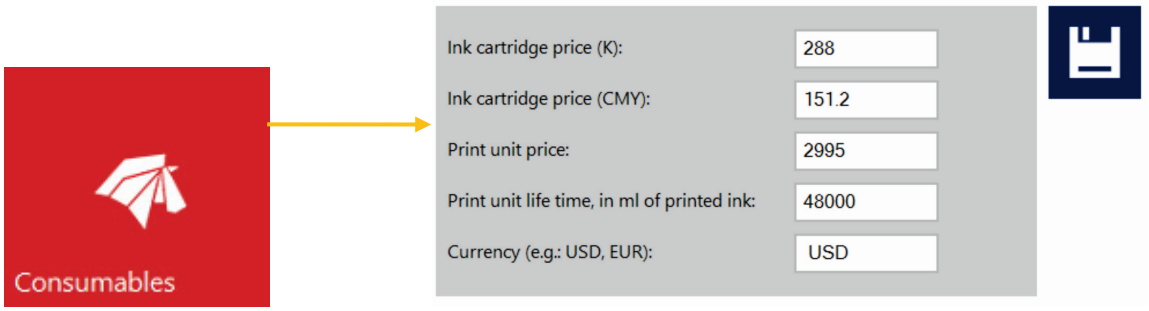
- Information from currently printed job, including:
  - Preview image of the label which is being printed at the moment
  - Label counter
  - Name of print job in job library

4.2 Settings menu



- **Service ID:** A unique ID for each T3-OPX press. Based on the service ID, Trojanlabel support team can access to the Trojan Control via the internet from remote and provide technical support.
- **Actual software version:** Version number of the Trojan Control interface (GUI) currently running on the machine.
- **Trojanlabel technicians or the local Trojanlabel distributor complete the owner and distributor contact information field at installation. This field is not editable for end users.**

4.2.1 Consumables Button:

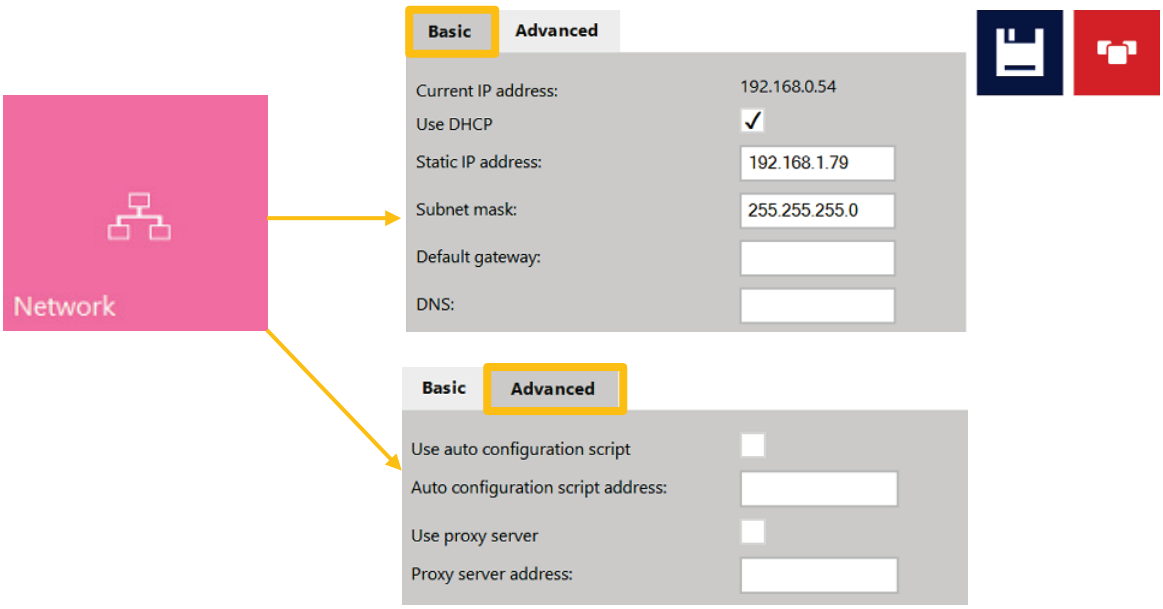


- **Ink cartridge price (K)** Insert price of one black (K) cartridge in local currency. This is used for ink cost calculation.
  NOTE: The ink price displayed in above screenshot is illustration only.

- **Ink cartridge price (CMY)** Insert price of one CMY (they are priced identically) cartridge in local currency. This is used for ink cost calculation.
  NOTE: The ink price displayed in above screenshot is illustration only.
- **Print unit price** when entered is also included in cost calculation in statistics menu
- **Print head life time** is theoretical value given in milliliters, which is used in combination with the Print unit price, to calculate the wear cost of the print unit for the particular job. The value entered here represents the printed ink volume until a planned print head change.
  An expected amortization is also calculated with the cost/label calculation.
- **Currency** Insert the currency of the above costs. This is for display only, no conversions are made based on the input.

IMPORTANT: Press the blue '**Save' button** to apply the changes.

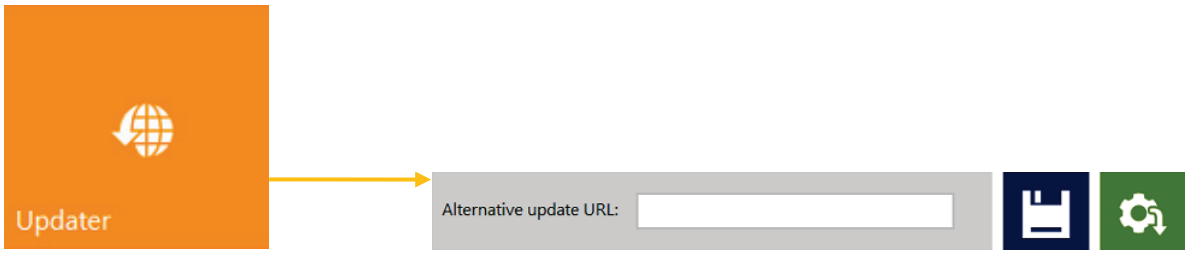
4.2.2 Network Button



- Select **'Use DHCP'** checkbox to acquire IP address for the T3-OPX from the local network (as long as DHCP mode is selected, the T3-OPX ignores any static IP settings).
- **Current IP address** field displays the current IP address of the T3-OPX on the local network.
- Uncheck **'Use DHCP'** checkbox when local network policy recommends using static IP address.
- **Red button: 'Restart Trojan Control and Print Engine'** button is for re-initializing the software and also restarting the print engine.
  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** whenever the local network policy requires these for network/internet connection.

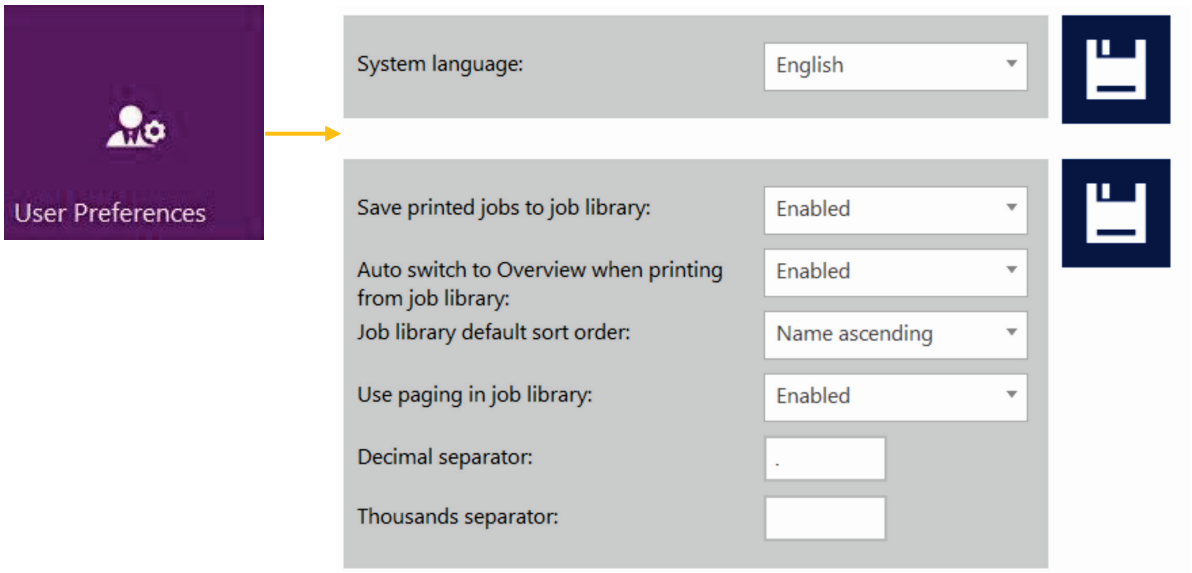
IMPORTANT: Press the blue '**Save' button** to apply the changes.

4.2.3 Updater Button



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

4.2.4 User Preferences Button



- **System language:** Select the desired language from the list.
  Press blue 'Save' button next to scroll-down menu to apply selected language.
- **Save printed jobs to job library:**
  Enabled: The print job is stored and available for reprinting from the job library.
  Disabled: The print jobs sent after disabling this option 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.
- **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.

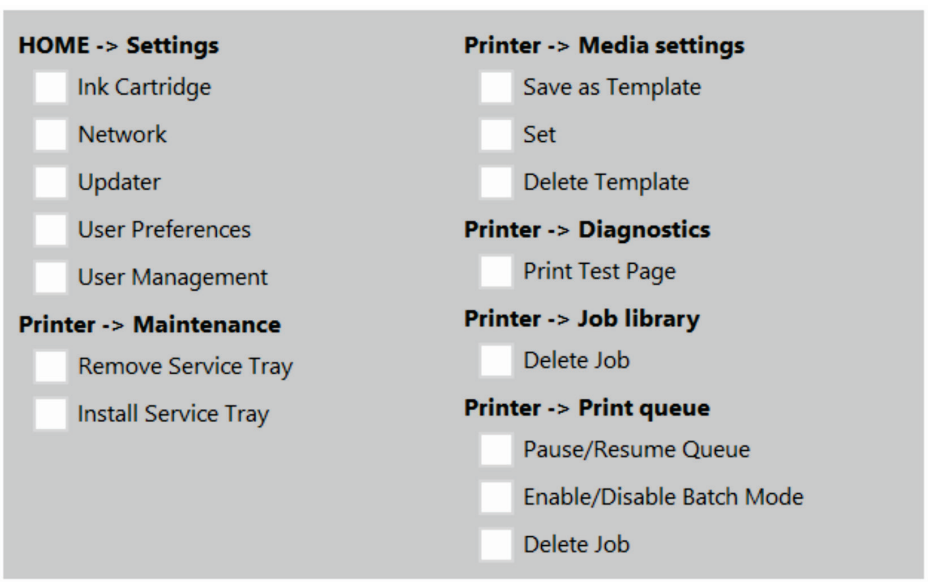
4.2.5 User Management button

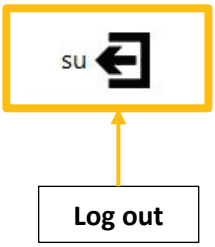
- By default user management is not enabled, therefore every function of the T3-OPX is accessible without user authentication.
- **Enable user management checkbox:** When selected and activated, then user authentication is required for accessing specific functions in TrojanControl software. A user with '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 Trojan Control software.

Add new user

Save new user settings / save changes in existing user account

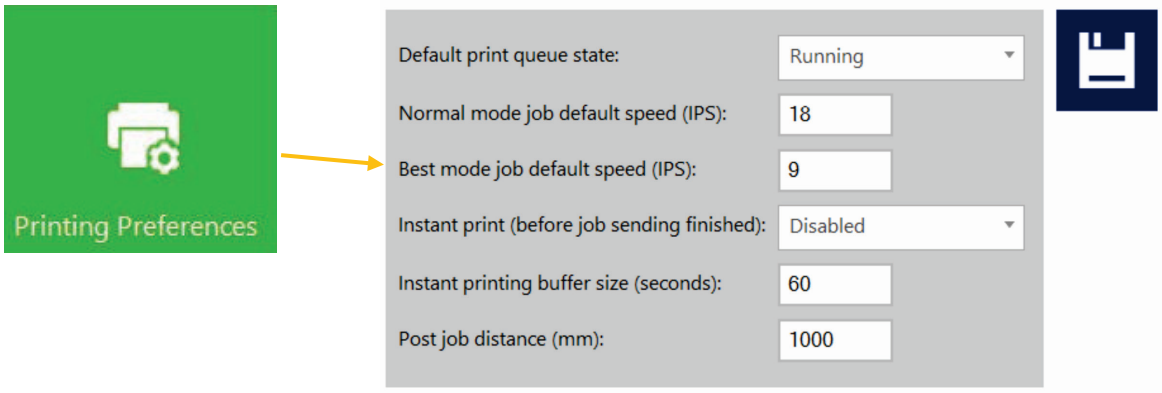
Delete user from list





IMPORTANT: The default password for the **admin** user is **123**.
NOTE: Passwords can only contain numbers.
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.

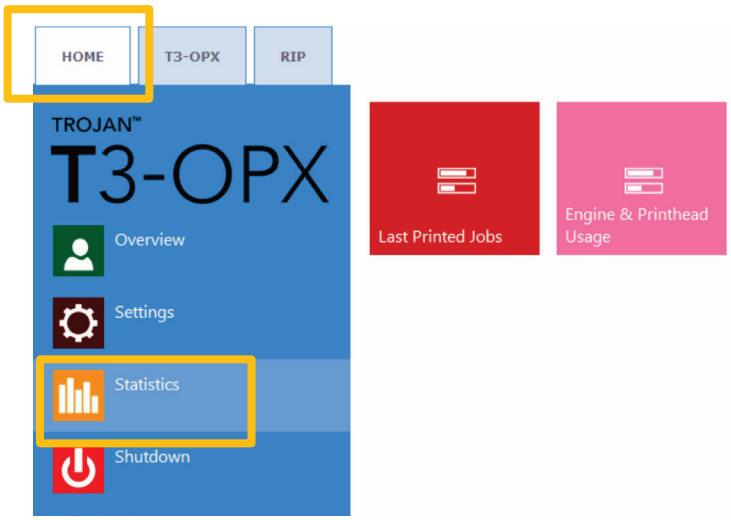
4.2.6 Printing prefrences button



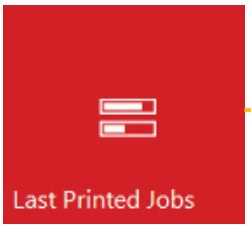
- **Default print queue state:**
  Running: (Default) Print jobs are queued progressively as they sent and processed in FIFO (first in first out) system. The queue can be managed from Print queue menu (see section 11.3.5).
  Paused: The print queue is paused when machine starts.
- **Normal mode job default speed (IPS):** defines the default speed of jobs transferred with the normal mode setting (usually 300 dpi)
- **Best mode job default speed (IPS):** defines the default speed of jobs transferred with the best mode setting (usually 600dpi)
  - **NOTE:** IPS = Inches per Second.
- **Instant print (before job sending finished):** enabled/disabled. Currently not available
- **Instant printing buffer size (seconds):** timer set for the buffering when Instant print option is enabled. Currently not available
- **Post Job Distance (mm):** currently not available

IMPORTANT: Press the blue '**Save' button** to apply the changes.

4.3 Statistics menu



4.3.1 Last Printed Jobs button:

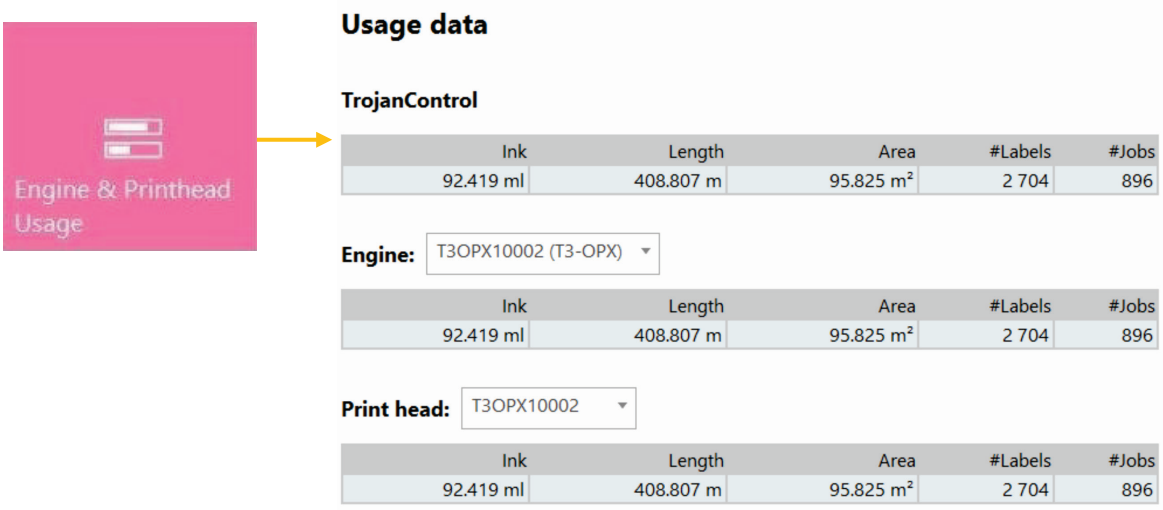


Job ID/Name	Pages	Mode	Printed Ink (nL)	Cost/label (ink)	Cost/label (ink + PH)	Cost/label (ink + PH + media)
20150427_081659_10	10	Best(6IPS)	1 262 000	0.0480€*	0.0480€*	0.0739€*
20150425_121817_6	1	Normal(12IPS)	39 000	0.0148€	0.0148€	0.0248€
20150425_121806_5	1	Normal(12IPS)	21 000	0.0080€	0.0080€	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 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 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 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 T3-OPX tab- > Media settings menu
- **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

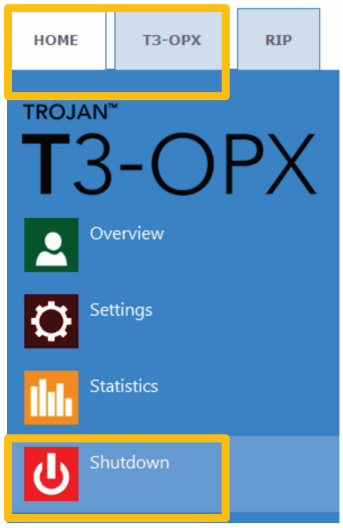
NOTE: Prices marked by * contain estimated cost of maintenances as well (pre-, mid-, post job maintenance). Prices without * mark are pure printing cost of 1 label without maintenance cost added (for printing samples without maintenance).

4.3.2 Engine & Printhead Usage button:



- **TrojanControl:** Total statistics for the T3-OPX 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 print heads which have been inserted into the T3-OPX. All print unit 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 is displayed as an empty record.
  NOTE: Printhead usage data is the total usage in the particular T3-OPXs. Does not include usage history from usage data on other T3-OPX presses if the particular printhead has been used in multiple machines.

4.4 Shutdown



- Shuts down the T3-OPX completely.
  NOTE: When shutting down the unit 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 TrojanTwo press.

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.

4.5 Exporting statistics data to a CSV file/ viewing statistics from a browser

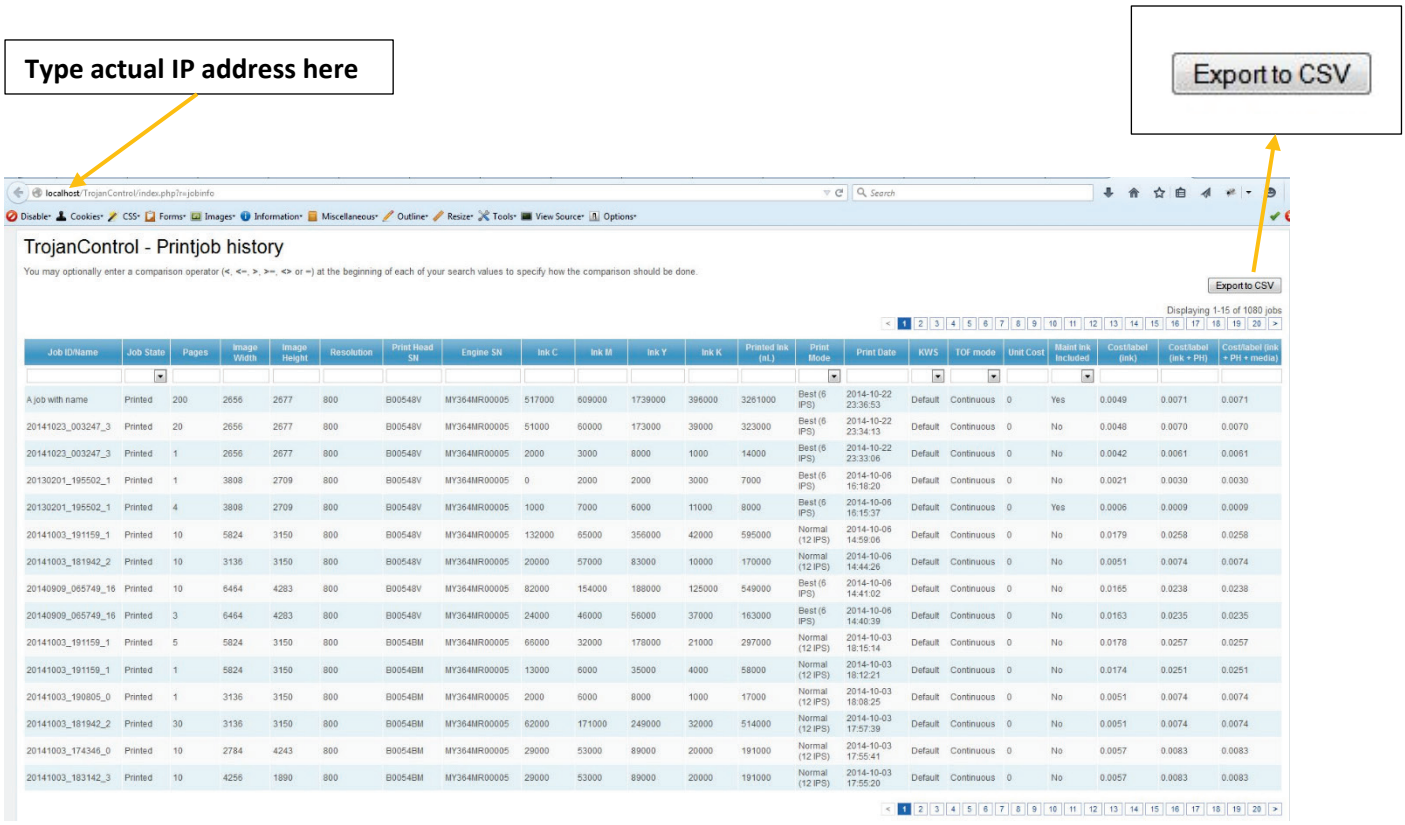
Statistics data from HOME -> Statistics menu can be exported and saved into a CSV file from a user PC which is connected to the same network as the T3-OPX.

- Actual IP address of the T3-OPX can be set or acquired at/from HOME -> Settings -> Network menu

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 T3-OPX into a browser at a user PC:



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.

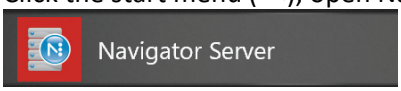
5 Transferring print jobs to the T3-OPX using the Xitron RIP

This chapter will walk throuh the steps on how to transfer a job to the job library of the T3-OPX using the Xitron RIP.

5.1 Starting the Xitron RIP Server

To transfer jobs using the Xitron RIP it is required that the RIP server is running. Note the server does not have to run on the same PC as the client.
This can be done two ways on the RIP server PC:

1. Click the start menu (), open Navigator, then click “Navigator Server”



2. Double click “Launcher”

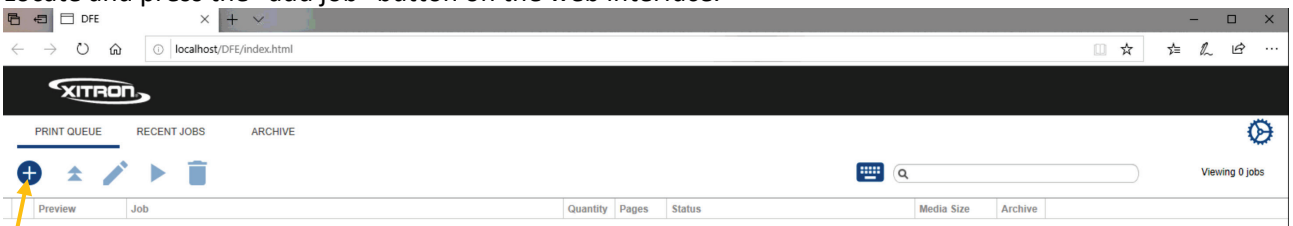
5.2 Transferring a job from the web client

Recommended browser is “Google Chrome”.

1. Start the Navigator Digital Front End (DFE)
   a. Click the start menu (), open Navigator, then click “DFE”

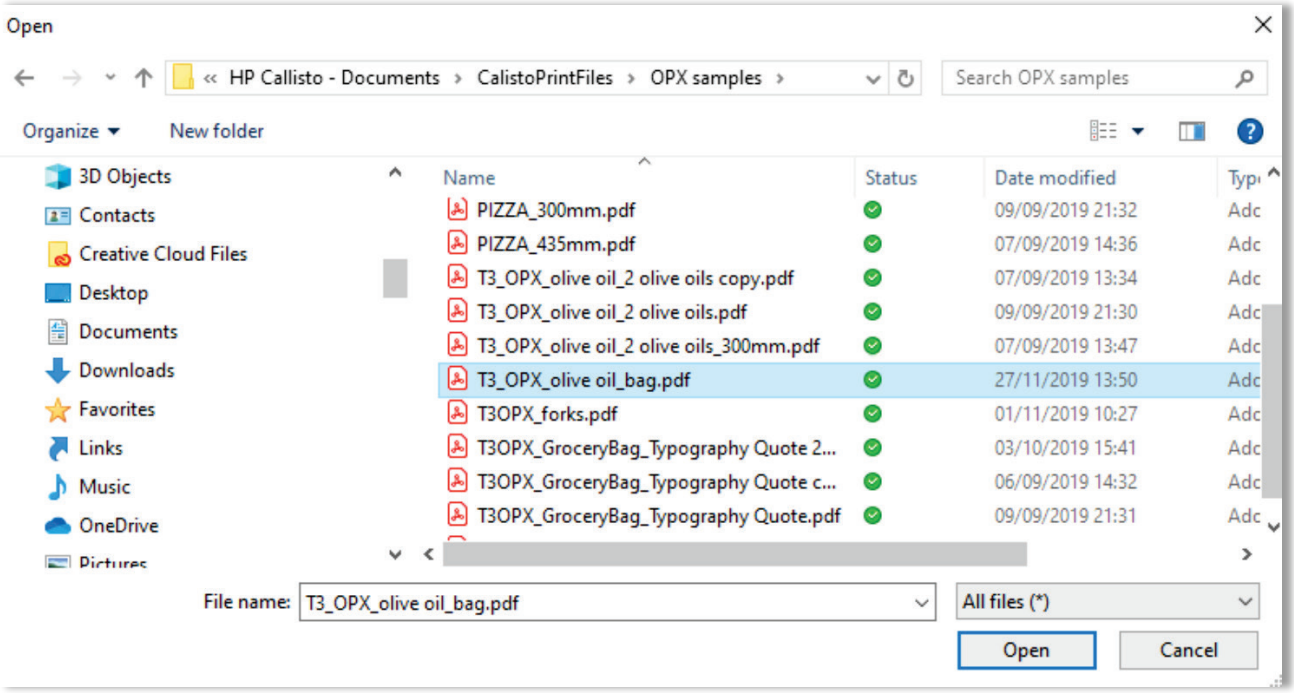
   b. Or Double click “DFE” shortcut icon on the desktop

2. Locate and press the ”add job” button on the web interface.

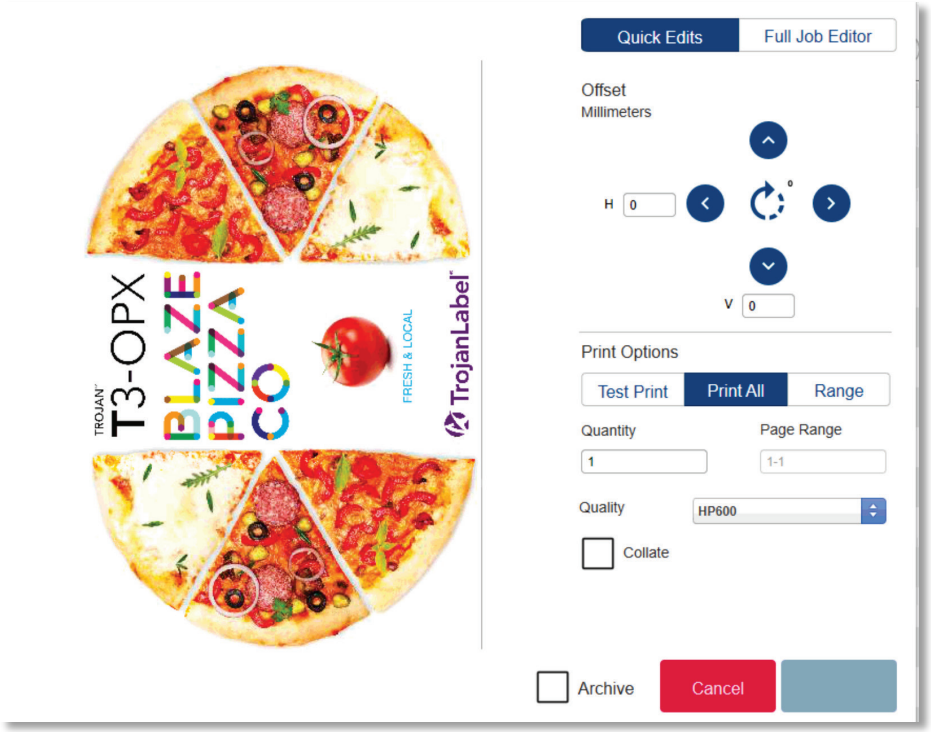


Add job button

3. Navigate to your file in the pop-up window.



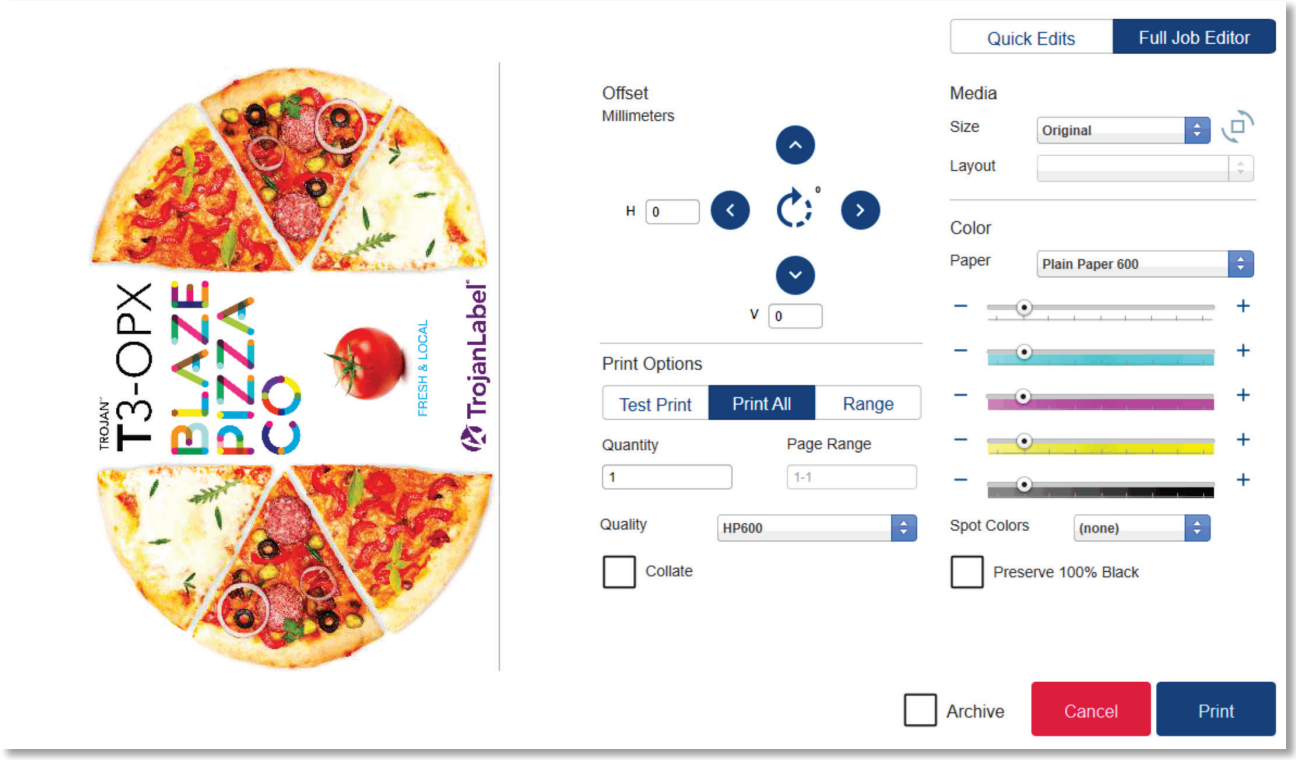
4. Select your file, then select the OPEN button. After the file is uploaded the QUICK EDITS screen is opened. In this screen you can make various changes such as rotations, print range, collation, etc.



   a. You can also select the FULL JOB EDITOR at the top right.

5. In the Full Job Editor screen you can do the same changes as the QUICK JOB EDITOR as well as changing the Paper Profile, Overall Color Changes and Spot Color Adjustments. When you have

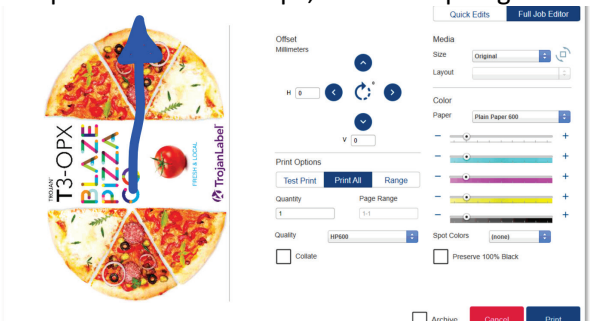
made any necessary changes, select "Print" and your file will be sent to the printer.



6. Press Print to send the job to job library on the T3-OPX

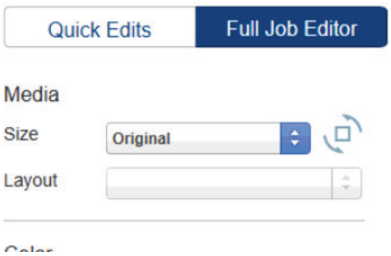
5.2.1 Print direction

The print direction is “up”, and the top edge will be printed first:



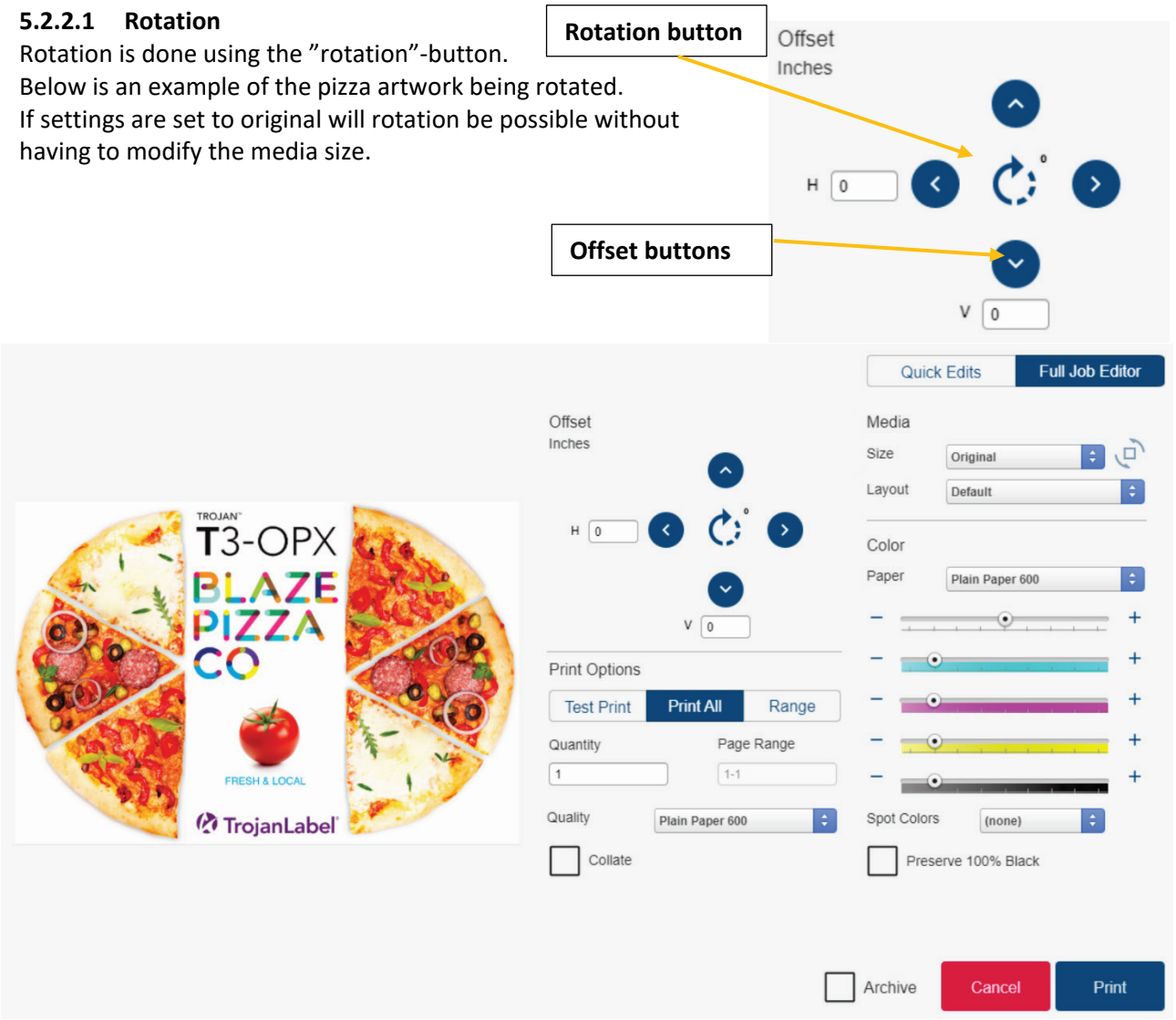
5.2.2 Rotation, offsetting and media size

To use the offsetting (moving) and rotation, it is important that the Media size is adjusted to fit the new dimensions.
When a job is loaded the media size will automatically be set the dimension of the job, including any white space. This is indicated by the size being set to “Original”.
It is easy to see if an image needs a new media size when rotating or offsetting, as the image will be truncated if it doesn’t fit.



5.2.2.1 Rotation

Rotation is done using the ”rotation”-button.
Below is an example of the pizza artwork being rotated.
If settings are set to original will rotation be possible without having to modify the media size.



5.2.2.2 Offsetting

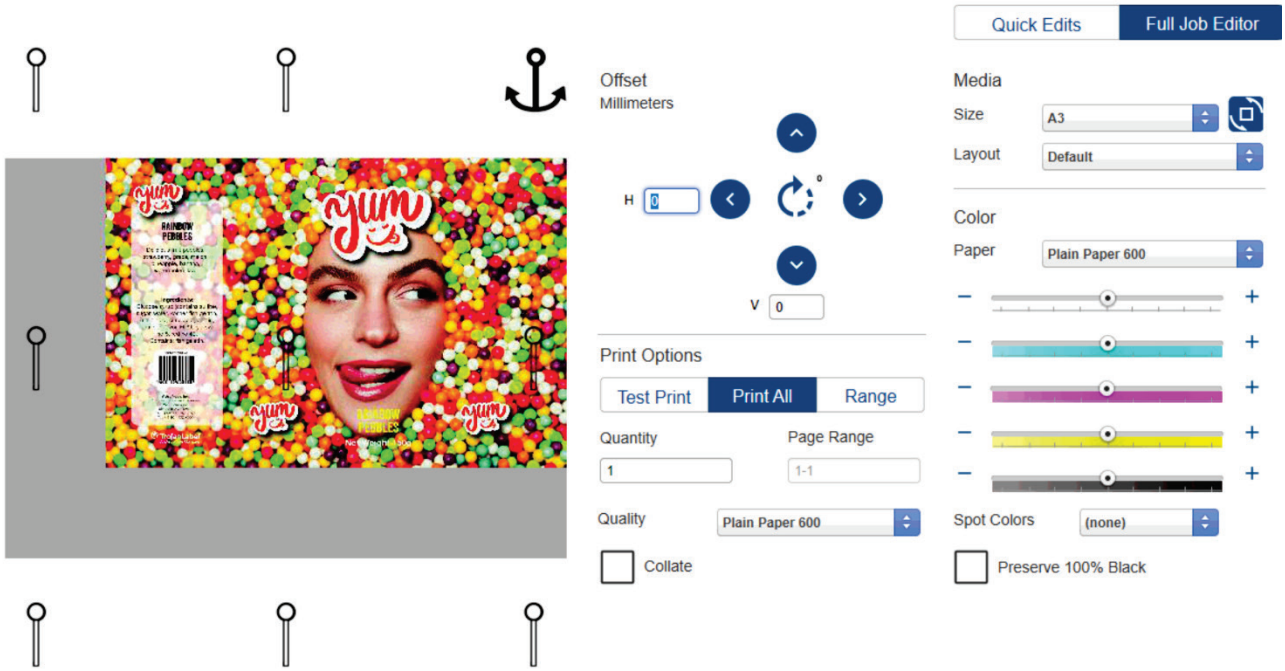
A print job is per definition centred, so you need to move the artwork using the offest buttons and adjusting the ”media size” to fit it diffenrently. Alternatively align the media differently.

Use the buttons to offset the artwork, the units (inches or milimtres) are decided by the locale of the PC. This is managed in the language settings of the PC.

It is not possible to use the offset button to move the media, without adjusting the media size too. Unless you just want to truncate the artwork, as this is what effectively will do.

To move an image to fx the far right:

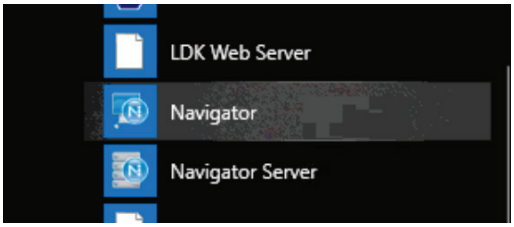
1. Select A3 as Media size
2. Use the rotate button, for landscape
3. Click on the image to activate the anchor points
4. Click the top right to place it.



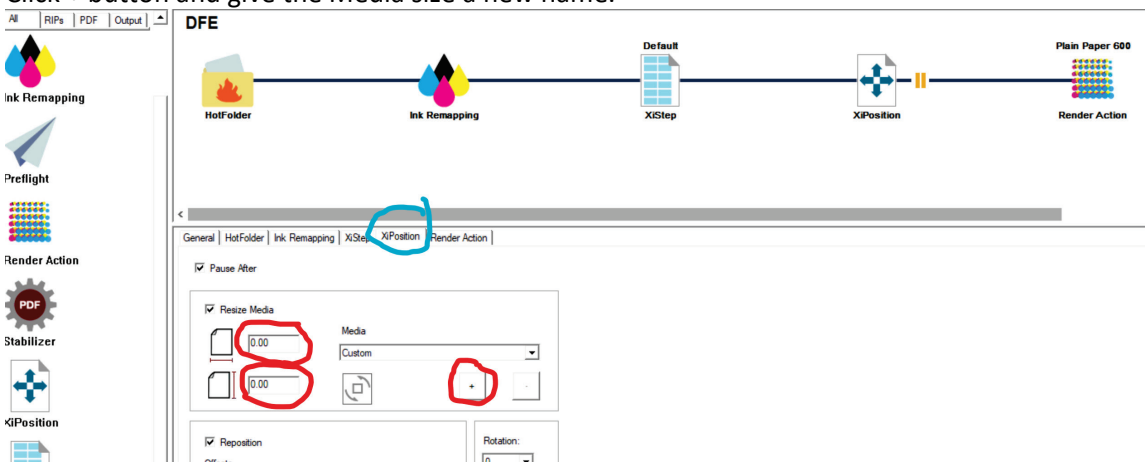
a. Note: if the standard Media Sizes are not fit for the artwork, then create a custom media size (see chapter 5.2.2.3 Creating custom media sizes)

5.2.2.3 Creating custom media sizes

1. Close the DFE browser
2. To create a custom media size; open the Navigator client, it is placed on the Navigator “folder” in the start menu:

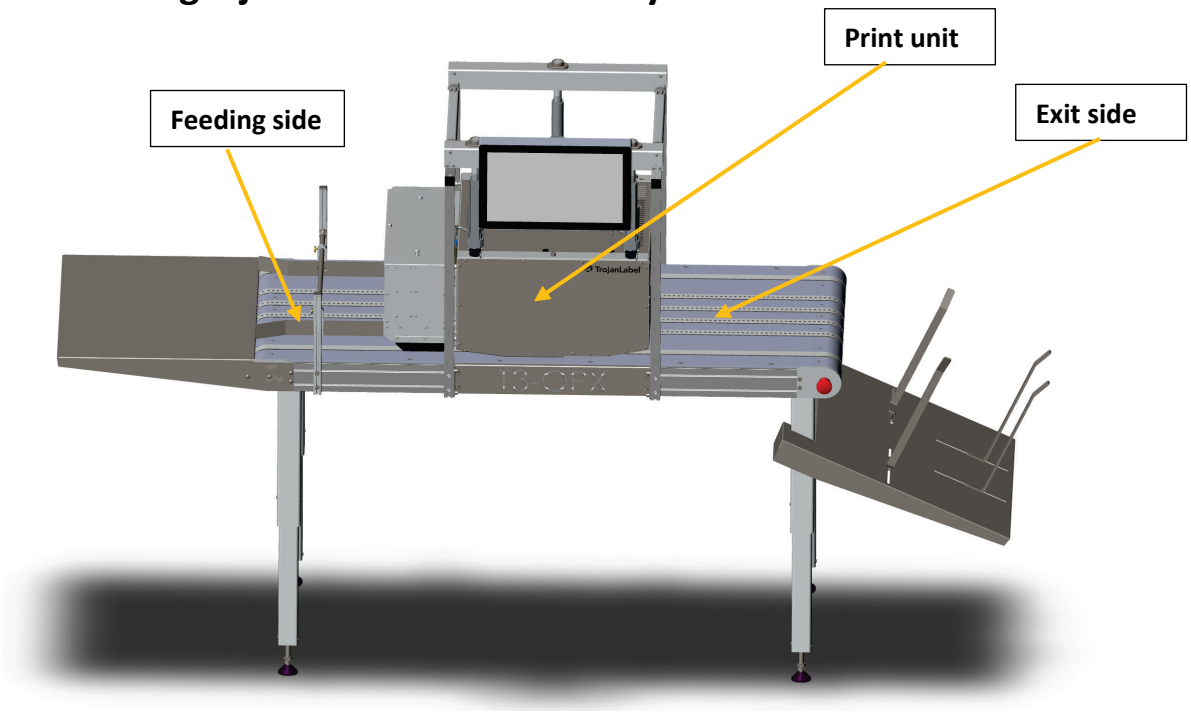


3. Right click the DFE workflow (should be the only one), and select Edit Workflow
4. Go to the XiPosition (blue circle)
5. Set the width and height
6. Click + button and give the Media size a new name.



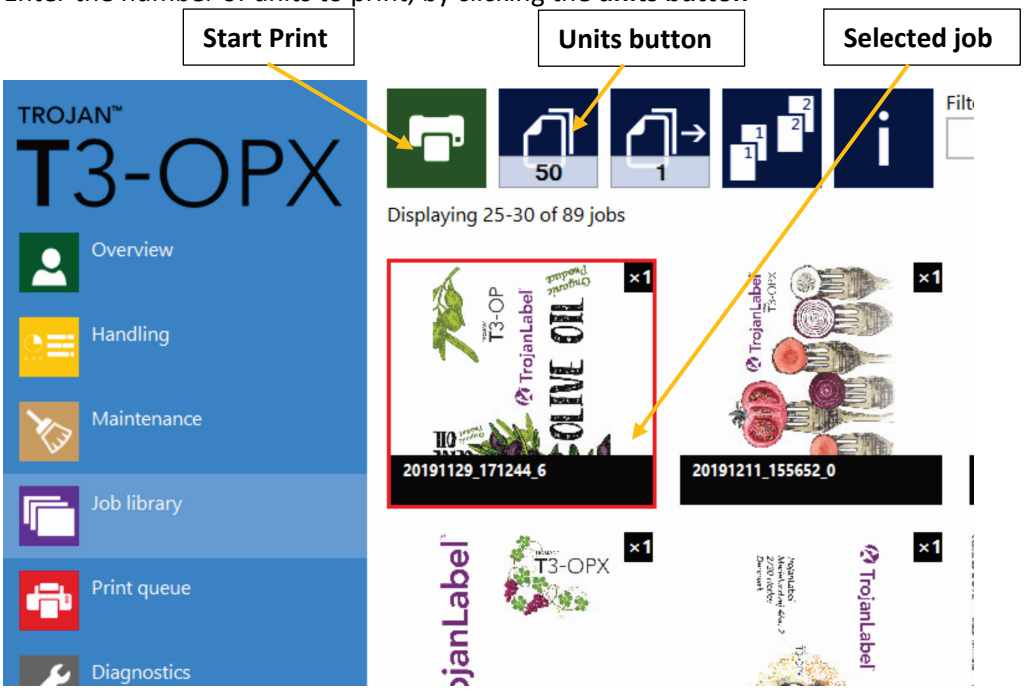
7. Open the DFE in browser again
8. Select the new Media in the size drop down.

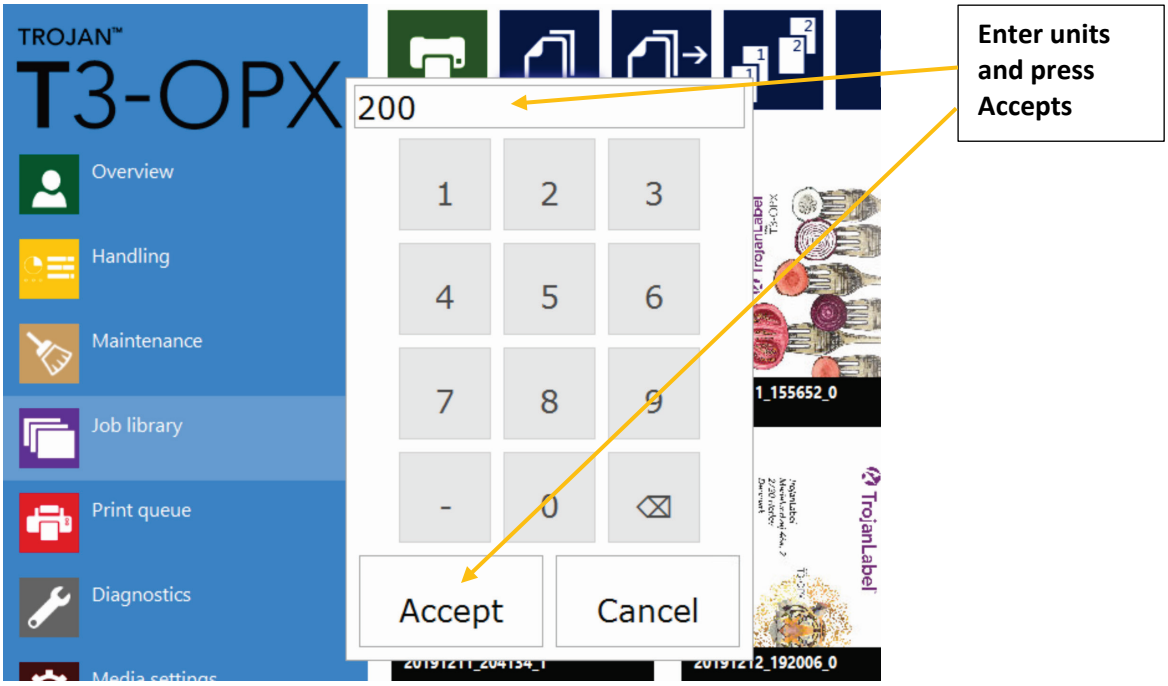
6 Printing a job from the Job Library



NOTE: all jobs are per default centred. Use the RIP to move the print or position the medie accordingly.

1. Select or create the **media profile** in menu: **media settings** (See chapter 8 Automatically calibrating the job/media height)
   This will ensure that the job has the correct print height relative to the media and edge sensor is set
2. Place the media to print on the **feeding side** (see above) of the print unit
3. Go to the **job library**
4. Select the **print job** (indicated by a red square)
5. Enter the number of units to print, by clicking the **units button**





6. Press the green **print button**
7. Feed the media

This guide will start with the two most common menus that the operator will use when printing jobs: **Job Library** and **Media Settings.**

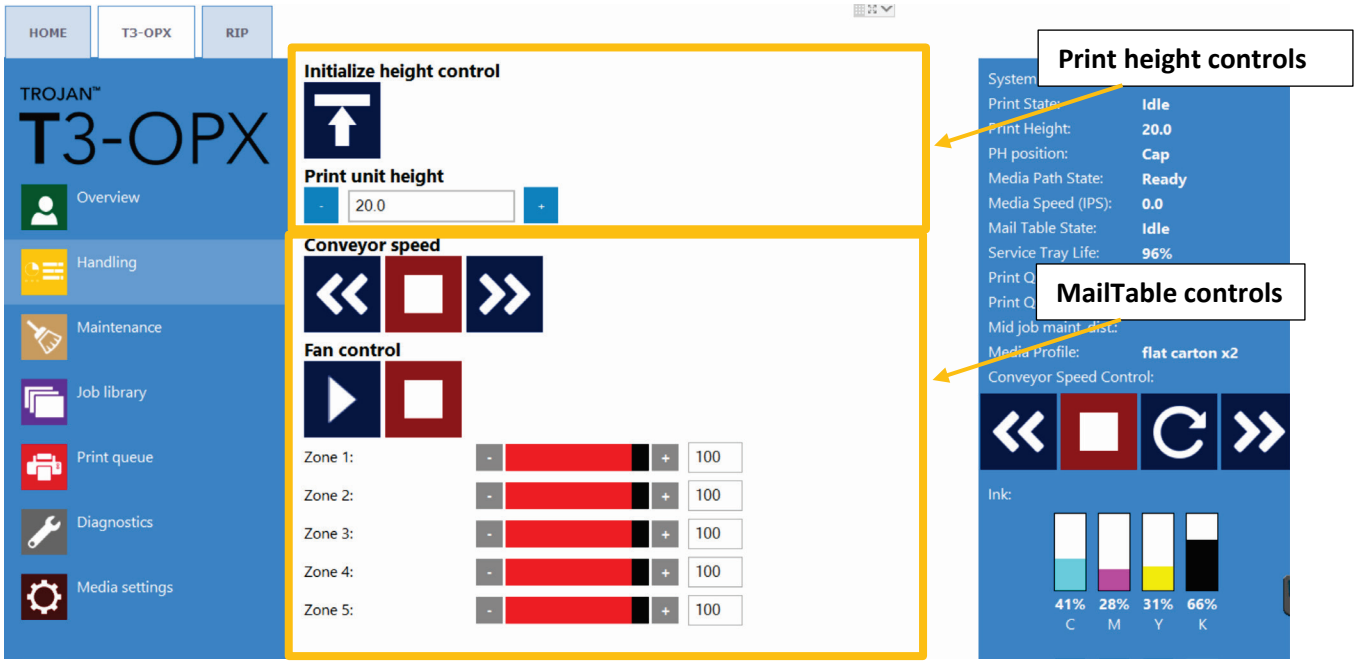
7 Operations menu

Media profiles are the base of a print job. The media profile is the configuration of either a print job or/and the media being print on, such as pre-setting the height of the media and where the artwork is positioned on the media, i.e. the TOF (Top of form, i.e the distance from the leading edge of the media).

Media profiles are created in the media settings and one of the most powerful features is the automatic height calibration. This chapter will explain how to create and manage media profiles.

7.1 Handling overview

The ”Handling” menu is used for moving the print unit up or down, moving the mail table and adjusting/testing the vacuum fans when printing.



7.1.1 Initialize height control

Press the button for the unit to initialize the height controllers. When the unit is powered on will the initial **Media Path State** status be ”Uncalibrated” and the unit can not move up or down.
When pressing the button will the height controllers move to the top position and the Media path state will change to ”Ready”.

7.1.2 Print unit height

Use the -/+ buttons to move the unit up or down on increments of 0.2 mm.
Enter a value and the unit will move to the position.

7.1.3 MailTable (MT1/2) controls

7.1.3.1 Conveyor speed (MT1 and MT2 controls)

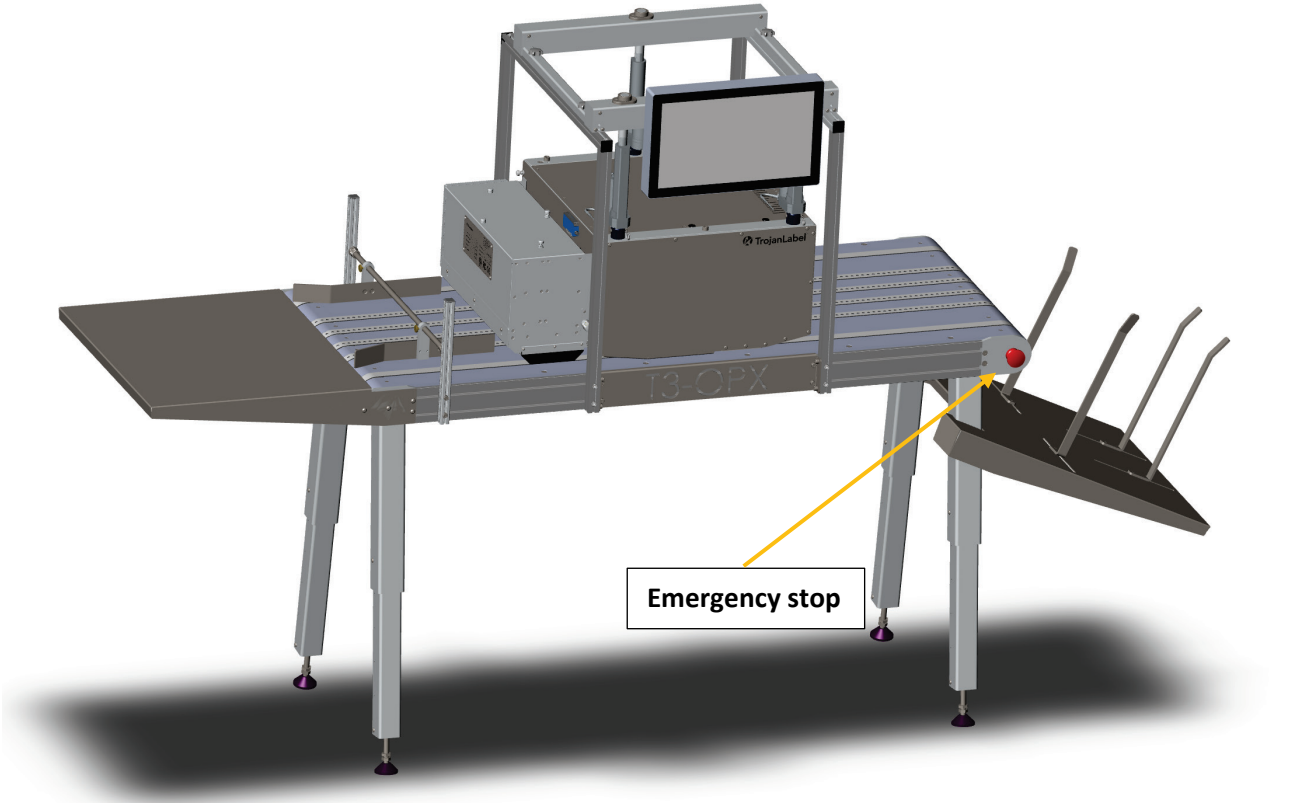
Move the table belts forward  or backward  , each push will increase the speed by 1 ips (please note that there will be some latency, so rapidly consecutive presses, will not be registered). Press stop  to move the belts to a halt.

7.1.3.2 Fan control (MT1 and MT2 controls)

Use the start  button to test the fans, use the stop  button to stop the fans.
Use the Zone (1-5) controls to individually set the fan speed from 0 to 100.

7.1.3.3 Emergency stop

The emergency stop placement:



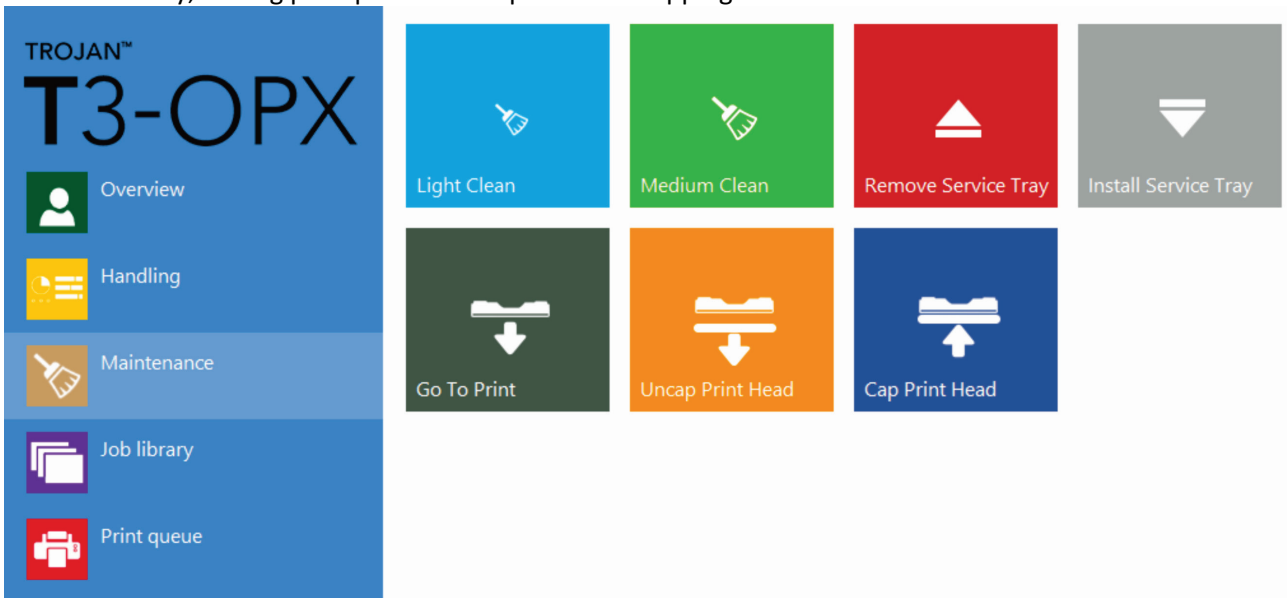
Pressing the emergency stop button will:

1. Stop the table
2. Stop the height controllers

The emergency stop can be released by twisting the emergency stop button.

7.2 Maintenance overview

The maintenance menu controls the print head maintenance functions, which includes cleaning, replacinf the service tray, testing print position and print head capping



7.2.1 Light clean

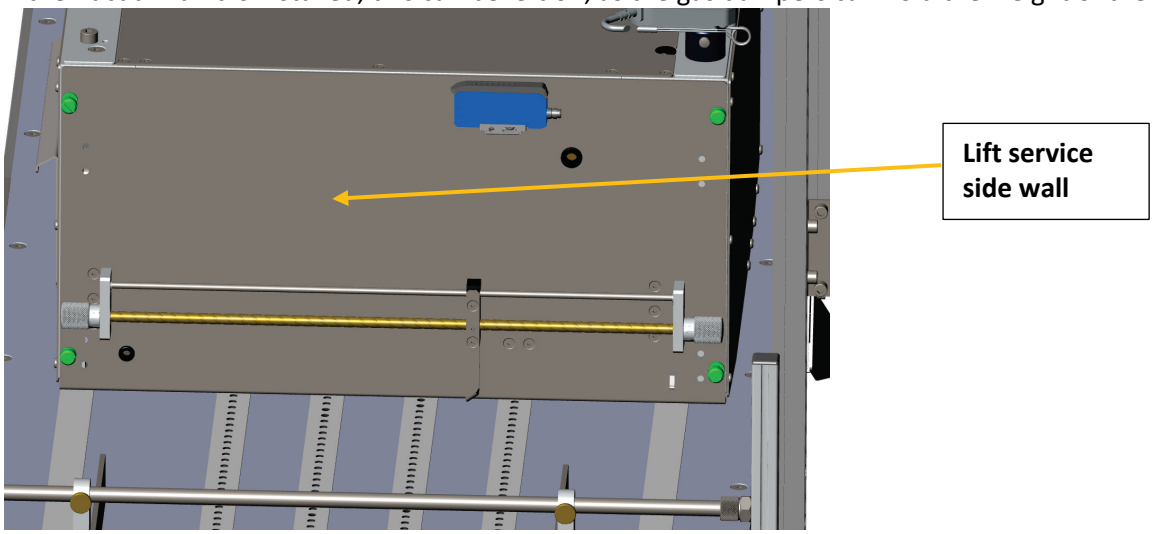
The **Light Clean** option will make a quick wipe of the print head and activate the nozzles by spitting. This is useful if dust or aerosol has accumulated on the nozzle area of the print head during print.

7.2.2 Medium clean

The **Medium clean** option will make a more thorough cleaning process of the print head and can be used if the **Light clean** is not able to remove foreign objects from the print zone. This can also be used if a nozzle area seems dehydrated.

7.2.3 Remove service tray

Remove service tray is used to replace the service tray when the whole wiper cloth has been used. This is indicated by the **Service Tray Life** (in the status coloumn) reaches 0%.
Important: Before pressing the button, open the service side of the unit by removing the 4 finger screws (indicated by green) and lifting it up.
If the Vacuum unit is installed, this can be left on, as the gas dampers can hold the weight of the VAC unit.



Press the **Remove service tray** button and wait for the service tray to retract. Pull out the service tray and replace it with a fresh tray.
Notice the print head will be uncapped during this process, so have the replacement tray ready before starting this process

7.2.4 Install service tray

When the service tray in re-inserted, press the **Install service tray**. The service tray will move into position and cap the print head. The **Service tray life** status should be 99-100% for a new tray.

7.2.5 Go to Print

Pressing this button will uncap and move the print head in to the print position, directly over the crash plate. Use this function if you suspect that the print head is not lining up directly over the crash plate. It is important that the print position is over crash plate, as this ensure that the print head is as close to the media as possible.

7.2.6 Uncap print head

This function will retract the service tray and expose the print head. This can be useful if you want to manually wipe the print head. The print head will be uncapped for 60 seconds and the automatically cap again.
IMPORTANT: only use a clean lint free cloth and DI water. Wipe gently across the surface.

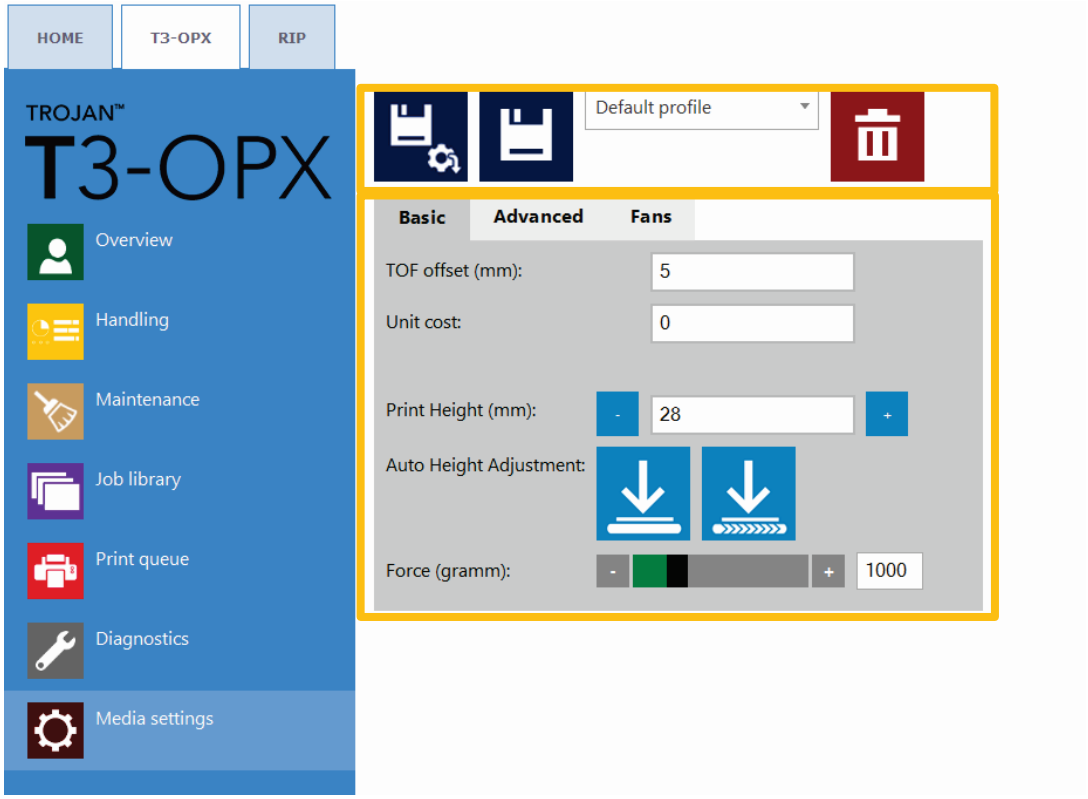
7.2.7 Cap Print Head

This function will cap the print head, by moving the service tray back in to idle position.

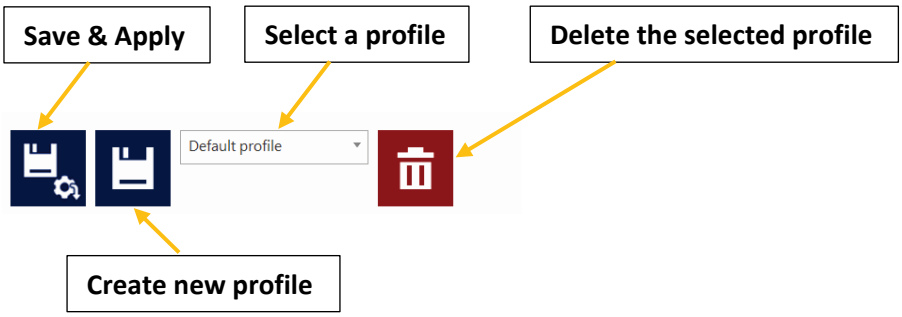
7.3 Media settings overview

The ”Media settings” menu point is the key for printing, and a profile must be actively set before print a job. The media settings controls the print height and where the artwork is placed on the media relative to the detected edge of the media.

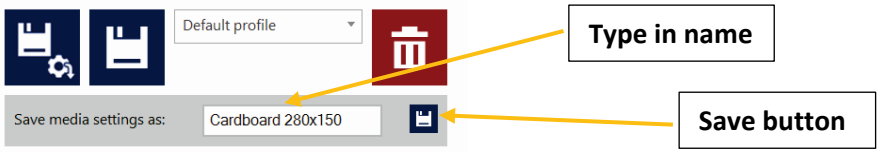
The Media settings has a **profile control section** and **three tabs to manage the properties of the selected profile**



7.3.1 Profile control section



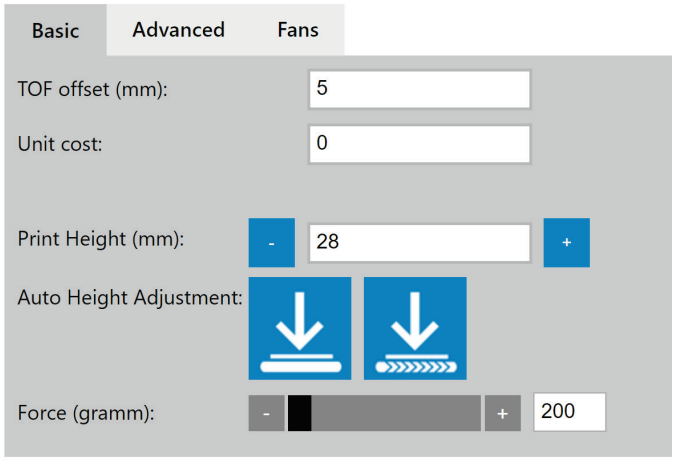
- Save & Apply
  Saves the properties to the current selected profile and applies the settings
- Create a new profile
  Save properties to a new media profile. Type in the name of the new profle and press the small save button.
  Important: It only saves the profile, they are not applied, until the apply button is saved



- Select a profile
  Select a media profile from the drop-down list
- Delete the selected profile
  Deletes the media profile, when confirming the deletion pop up.

7.3.2 Basic tab

This is were the typical settings are managed



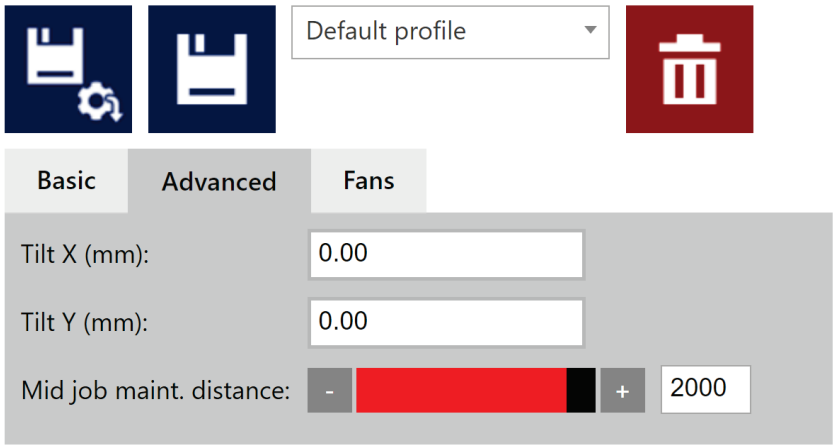
- **TOF offset (mm):**
  Set the distance from the edge of the material (registred by the edge sensor) to the position of the printed artwork
- **Unit Cost:**
  Cost of the media (one unit, fx a box, paper bag etc). Currency is set in the HOME -> Consumables menu
- **Print height (mm):**
  Distance between the table and the print head crash plate. Set the value in milimeters.
  - The print unit is not physically moved until the apply settings button is pressed
- **Auto height adjustment:**
  The auto adjustment will use the ”weight” specified in the Force setting below to apply pressure and use the force feedback to set the height. Once the heigh is determined, is the Print height field updated. There are two options for auto height adjustment:

  
  ”Adjust height”-button.
  Start automatic height adjustment of the media placed under the pressure plate

  
  ”Move and adjust height”-button.
  Moves the media placed on the conveyor belts on the entry side under the pressure plate, then starts the automatic heigh adjustment. When complete will the media be moved back to the starting position. Requirement: The entry sensor must be able to register the media.

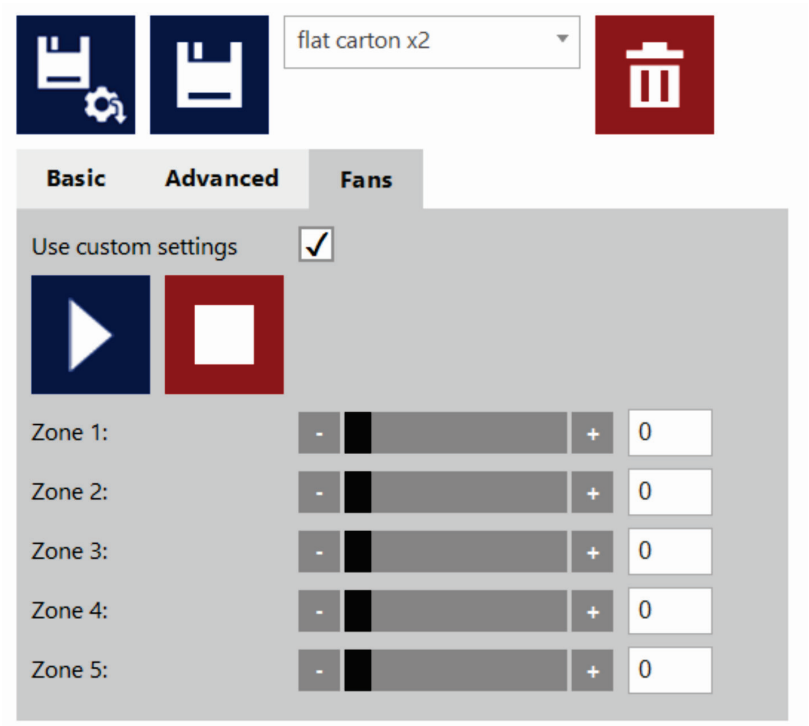
- **Force (gramm):**
  Set the Force in grams. The value determine the lowering force of the pressure plate. Maximum force is 20.000 grams (20 kg).
  - Typical values
    - Cardboard: 2000
    - Egg carton: 200
    - Envelope: 1000

7.3.3 Advanced tab



- Tilt X (mm)
  Set the tilt across the printhead in millimeters (+/- 5mm). Useful if the material is slightly higher in one of the sides, fx bag handles.
- Tilt Y (mm)
  Set the directional tilt in millimeters (+/- 5mm).
- Mid Job maint. Distance.
  Set the number of units that the system will print, before stopping and performing ”mid job maintenance”. The counter is reset after each job.

7.3.4 Fans tab



The general setting of the maul tables vacuum fans are managed in the ”Handling” menu, however these settings can be overriden by checking the ”Use custom settings” box.
The start, stop and zone controls are not visible until the ”Use custom settings” box is checked. When it is checked use the start and stop button to test the fan settings in Zone 1-5. These settings are then saved to the media profile and used when printing with profile.

7.3.5 Setting up a media (job) profile in Media settings

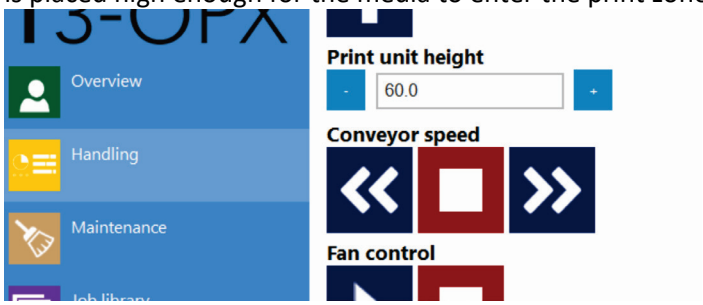
Media profiles are the base of a print job. The media profile is the configuration of either a print job or/and the media being print on, such as pre-setting the height of the media and where the artwork is positioned on the media, i.e. the TOF (Top of form, i.e the distance from the leading edge of the media).

8 Automatically calibrating the job/media height

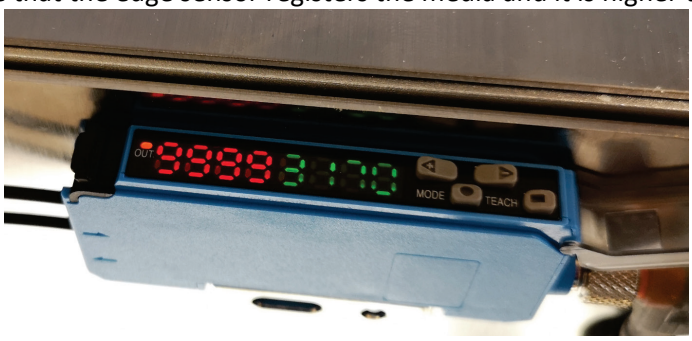
The T3-OPX can automatically adjust the height controllers to the media that the operator wants to print on. The height can then be saved to media profile. Please refer to 7.1 ”Handling overview” and 7.3 ”Media settings overview” for detailed description of the functions described below.

How to use the fully automated height adjustment process:

1. Select the media to print on
2. Test that the media is detected by the Edge sensor.
   a. Go to ”Handling” and possibly adjust the ”print unit height” to ensure that the print engine is placed high enough for the media to enter the print zone under print unit.

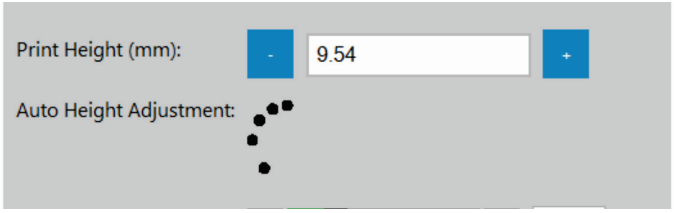


   b. Move the media under the edge sensor either
      i. Manually or
      ii. Place it on the feeding side of the belt(s) and then start the belts
   c. Validate that the edge sensor registers the media and it is higher than the preset threshold.
      i.



3. Place the media on the feeding side of the belt again.
4. Go to the ”Basic”-tab in ”Media Settings”
5. Adjust the ”Force” to the material
6. Start automatic height adjustment of the media by pressing the ”move and adjust” button:

   a. The adjustment process is indicated by dots circulating instead of the buttons

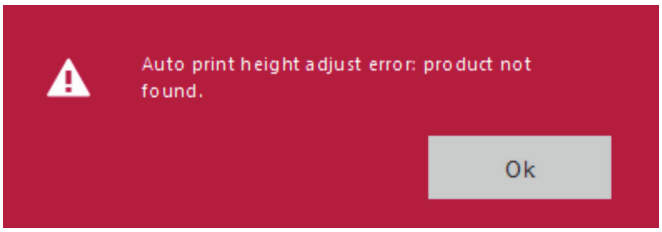


   b. The media is moved under the print engine
   c. The height is adjusted
   d. The media is moved back to the feeding zone

e. The ”Print Height (mm)” is updated with the new value and adjustments buttons are visible again

Additional information:

1. The Height Controllers will move up to 20mm, when pressing the ”Move and Adjust Height”-button, if the current print height is physically less than 20mm.
2. Setting the force too high can crush the material.
3. If t he edge sensor does not detect the material, then the belt will stop and return the media and display an error ”Auto print height adjust error: product not found”



9 Printing on uneven surfaces (die-to-die overlap feature)

When printing on uneven surfaces it can be useful to user the die-to-die overlap feature. This feature will enable to the operator to move the print unit further from the media.

We recommend only doing this using an existing successful scan of the nozzle alignment plot. Which is indicated with the button “Use last successful scan” in the scan nozzle alignment porcess

The feature will allow -8 and 7 nozzles of modification to the alignment. Positive values will push the lines together and negative values move them apart.

- Positive values should be used when white lines appear (too far from the media, which is the typical challenge).
- Negative values should be used when darker lines appear (too close to the media)

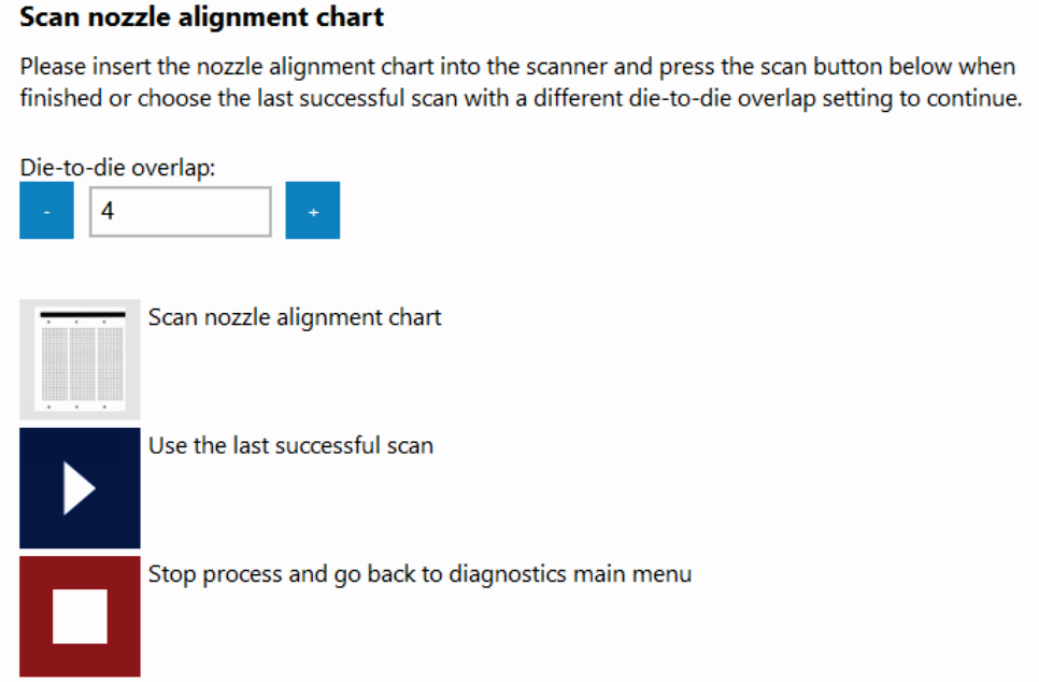
The die-to-to overlap feature allows the operator to control the die lines that are positioned with approximately 20mm separation.
If the print head is too far from the media will the die lines be visible as white lines. The recommendation is to get closer to the media, but if this is not possible (fx if the handles from a paper bag is interfering with the transport), then to the solution could be to adjust the die-to-die overlap.

Example of value:
A die-to-die value of 4, will typically allow a 2mm higher print height.

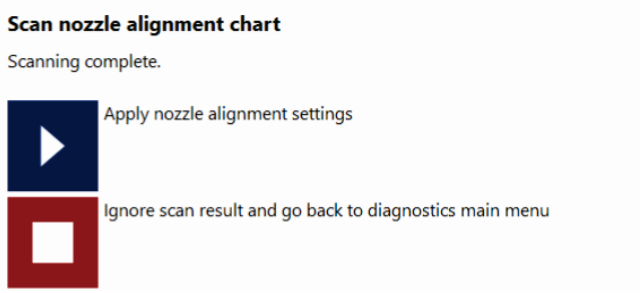
It is recommended to set the print height in the media settings first, to ensure consistency in the process:

Process of adjusting the die-to-die overlap:

1. Go to T3-OPX tab -> Diagnostics
2. Select “Scan Nozzle alignment plot”
3. Insert the die-to-die overlap value (-8 to 7)
4. Select “Use the last successful scan” and wait for the process to finish



5. Select “Apply nozzle alignment settings”

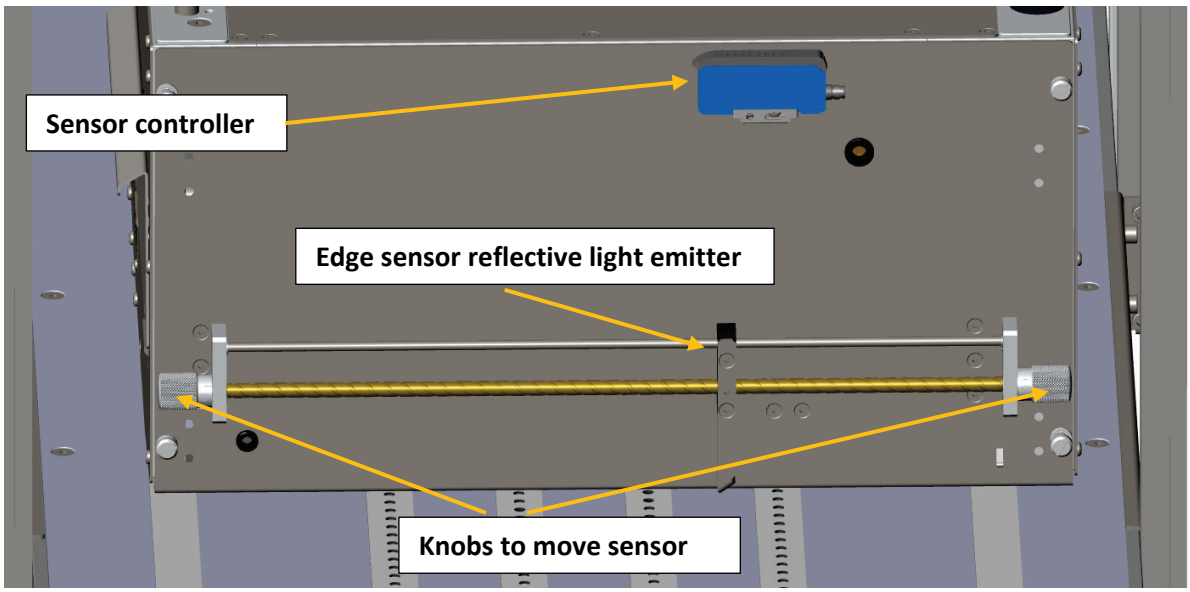


6. The process is complete
    a. Remember to insert the value of 0 when restoring the alignment.

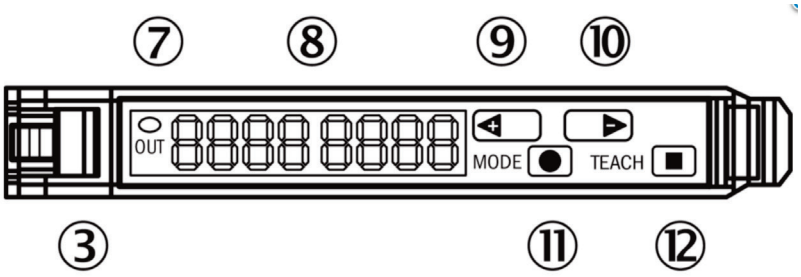
Note: The functionality involves updating the actual nozzle alignment within the print head, this means that the feature requires a recalibration of the nozzle alignment every time and is therefore not a part of the Media Profile (in media settings). Consequently, adjusting the die-to-die overlap will affect all media profiles.

10 Edge sensor (TOF control)

The edge sensor is used to detect the edge of the material moving under the print unit.
The edge sensor can be moved by twisting the knobs on each side of the rod. The sensor can be moved across the width of the print unit, but DO NOT place the sensor over a belt, as this will interfere with the edge registrations.



10.1Sensor overview



③ Locking the fiber-optic cables
⑦ LED indicator orange, lights up when switching output is active
⑧ Numeric display 2 x 4-digit, green: switching threshold, operating mode, red: actual value, Teach-in and function parameter
⑨ step pushbutton > (manual switching threshold: higher/next function parameter)
⑩ step pushbutton < (manual switching threshold: lower/previous function parameter)
⑪ Mode/Enter-button
⑫ Teach-in button

10.2Adjusting the sensor to the media

1. Move the print unit to a height position where the media can pass underneath, it does not need to 100% set to the height but within 10mm above the media.
2. Adjust the sensor ensure that switching threshold is not activated. This means that the green value (switching threshold), should be less than the actual value. Use the step buttons (9) and (10) to adjust the value. Remember that the sensor should not be over the belts, but over the black surface on the table.
3. Place the media under the sensor, the Led indicator (7) should light up orange, when the media is removed then the led indicator shall switch off. Use the step buttons to tweak the sensitivity up or down. The threshold value is instantly saved

11 User replaceable parts

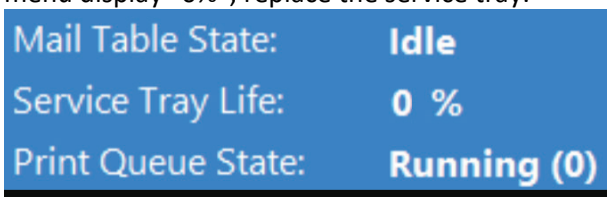
This chapter describes all parts that can replaced by the operator (excluding ink cartridge replacement which is explained in chapter 3.11 “Installing Ink Cartridges”)

11.1 Ink cartridge part numbers

Part number	Description
27610001	High Yield Cyan Ink Cartridge (~16,000 pages)
27610002	High Yield Magenta Ink Cartridge (~16,000 pages)
27610003	High Yield Yellow Ink Cartridge (~16,000 pages)
27610004	High Yield Black Ink Cartridge (~20,000 pages)

11.2 Service tray replacement

When the end of Service tray life has been reached, which is indicated by the Service tray life in the status menu display “0%”, replace the service tray:

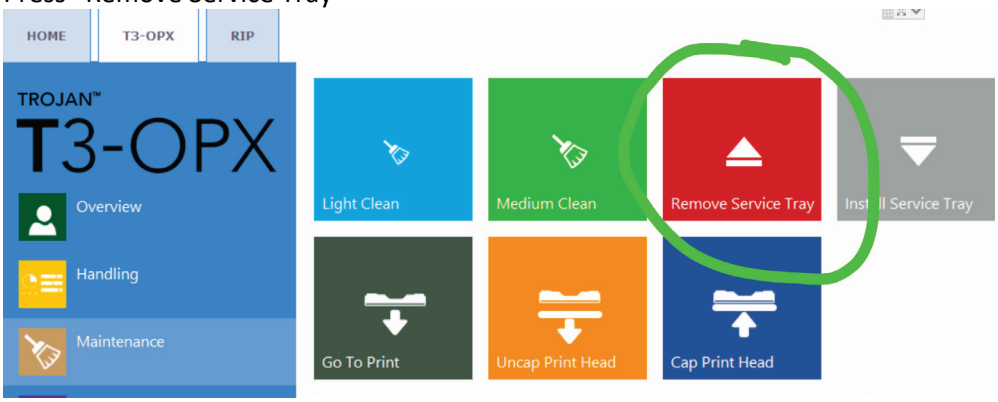


Part number	Description
15141290	T3-OPX SERVICE TRAY 

⚠	This process will leave the print head uncapped for a short period. Please keep this time to a minimum by reading the complete process before initiating the steps.

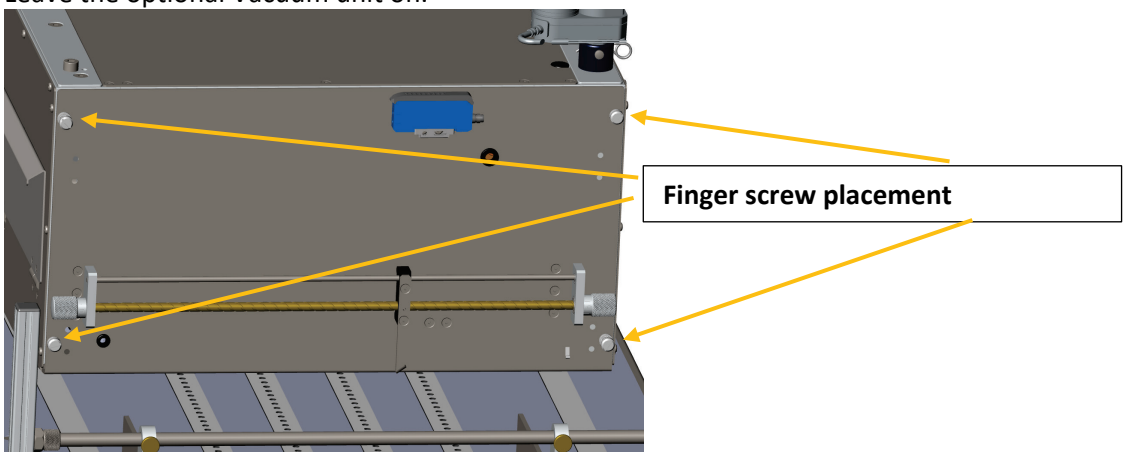
11.2.1 Service tray replacement process

1. Unpack the new service tray
2. Ensure the unit is not printing.
3. Go to the “T3-OPX” tab
4. Select Maintenance
5. Press “Remove Service Tray”

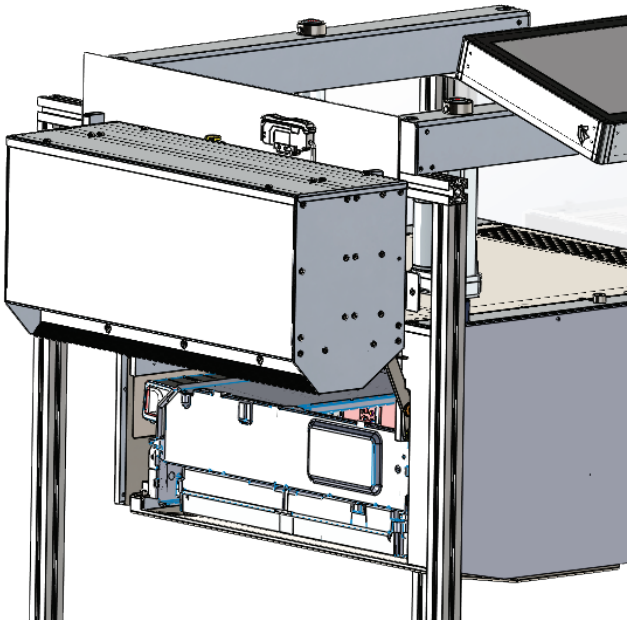


6. Open the “service door” on the feeding side of the unit, by removing the four finger screws

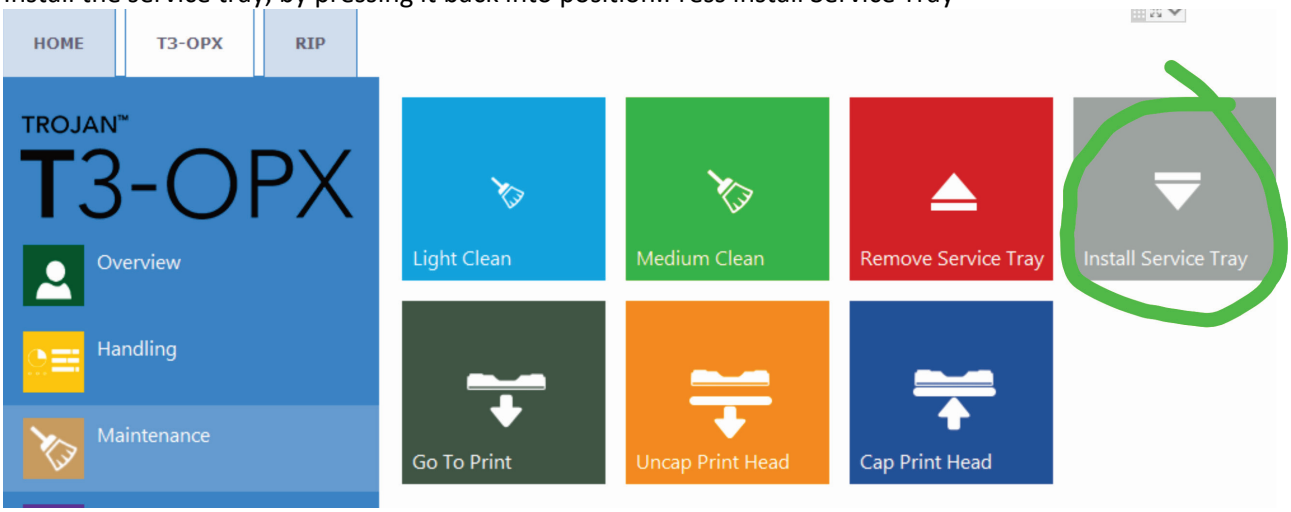
a. Leave the optional Vacuum unit on.



7. Lift up the Service door until it stops. The gas pumps will maintain the position
   a. It can carry the weight of the optional Vacuum unit



8. Wait for the service tray to be pushed to the end
9. Pull the service tray out
10. Install the service tray, by pressing it back into position.Press install Service Tray



11. Wait for the service tray to position it selves under the print head and confirm that the service tray life is 100% (if the service tray is new).

11.2.2 Moving the service tray manually

It is possible to move the service tray manually in both directions.

Requirements:
Torx T20 screwdriver

1. Go to the back side of the unit
2. There is a hole under the ink doors
3. Insert the Torx screwdriver and locate the service tray screw (should be straight in)

Warning: Moving the service tray will uncap the print head. So be careful with this operation.

11.3 Fuse power inlet

The fuse in the power inlet can be replaced by the operator

Part number	Description
15140120	FUSE T3.15A 

11.3.1 Fuse replacement process

⚠	Remove power cord cable before continuing

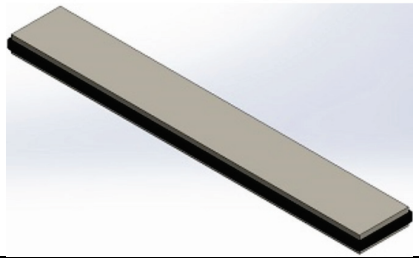
1. Open the fuse lid on the power inlet carefully using a flat head screw driver.

a. The lid is marked with a white sticker and a description (T3.15A)

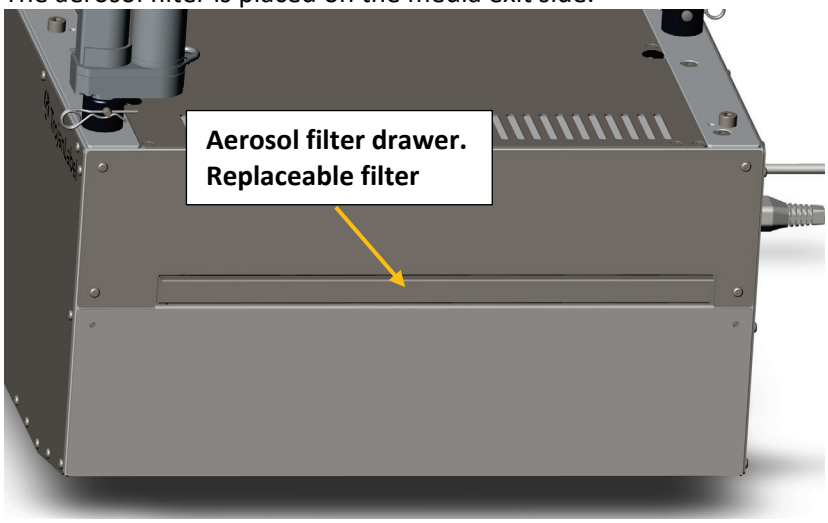
2. Remove the fuse
3. Insert the replacement fuse

11.4 Aerosol filter

The aerosol filter absorbs fine ink particles that is not absorbed by the media when printing. Although the filter is effective, some particles will still end up in the print zone, on the print head, table and side walls. The filter can be replaced during printing, but this is not recommended.

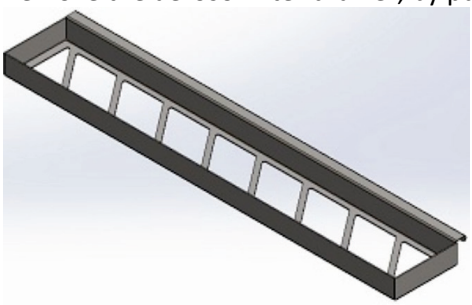
Part number	Description
27760660	T3-OPX AEROSOL FILTER 

The aerosol filter is placed on the media exit side.



11.4.1 Aerosol filter replacement process

1. Remove the aerosol filter drawer, by pulling the handle



2. Remove the filter in the drawer
3. Insert a fresh filter
4. Insert the aerosol filter drawer

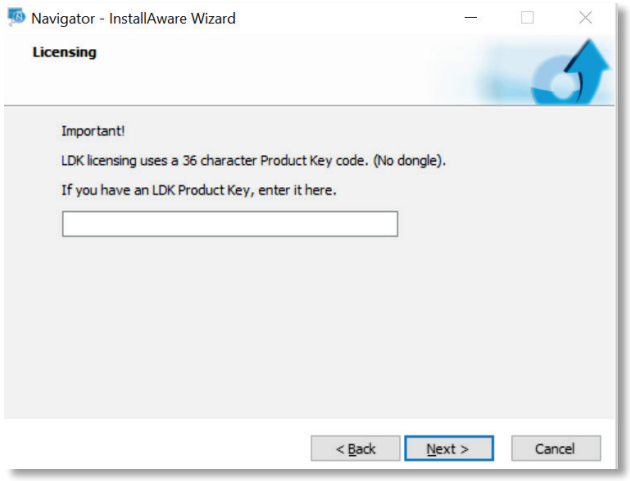
12 RIP installation (XITRON)

Prerequisites:

a. USB dongle, plugged in
b. 36-digit code, delivered with the dongle

Process:

1. Please uninstall existing copies before installing this version.
2. Download the latest version of the RIP from the website.
    a. http://trojanextranet.com/External/RIP/NavigatorT3OPX.zip
3. Be sure to unzip the entire folder before running the installer.
    a. install both the RIP server and client on the PC by double clicking the file below.
        i. NavigatorHHRInstaller.exe
    b. Type in the 36 digit code



    c. It is recommended to use the default directories when prompted for location
    d. Type in the ip address of the T3-OPX when prompted for it.
        i. To find the ip address, see chapter 4.2 Settings menu
4. After the installation please validate the following.
    a. Open File Exporer (⊞+e) Browse to "%appdata%\Xitron\HPPW" and open the HPPW.ini file The relevant line should look as follows.
        i. IPAddress=<ip address of the printer>
        ii. IPPort = 9106
    b. Typical example of the full hppw.ini file:

```
[General]
RESTCalls = 0
PoolSizeMB = 32
IPAddress = 192.168.0.193
IPPort = 9106
```

5. Start the the server and client, by double clicking the ”Launcher” on the desktop.

12.1 Link TrojanControl

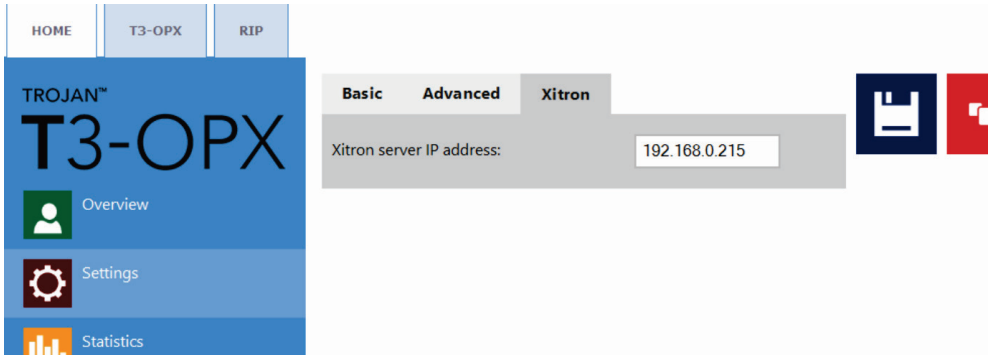
Insert the IP address of the RIP server in the TrojanControl, this will enable to features:

1. Show thumbnails in the Job Library

2. Enable the RIP client tab

Process:

1. Go to HOME -> Settings -> Network
2. Click on the Xitron tab
    a. Insert the IP address of the RIP server



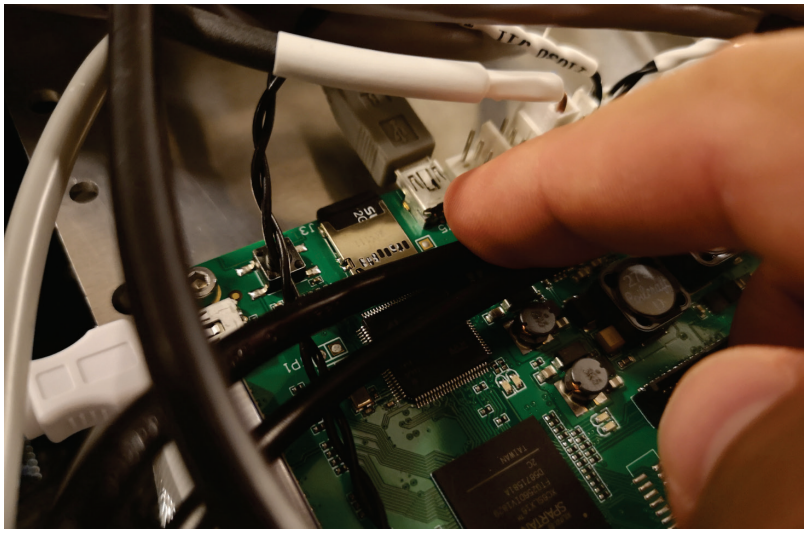
12.2 Installing just the client

To install just a client on a PC in the same network as the RIP server and printer, run the following file:

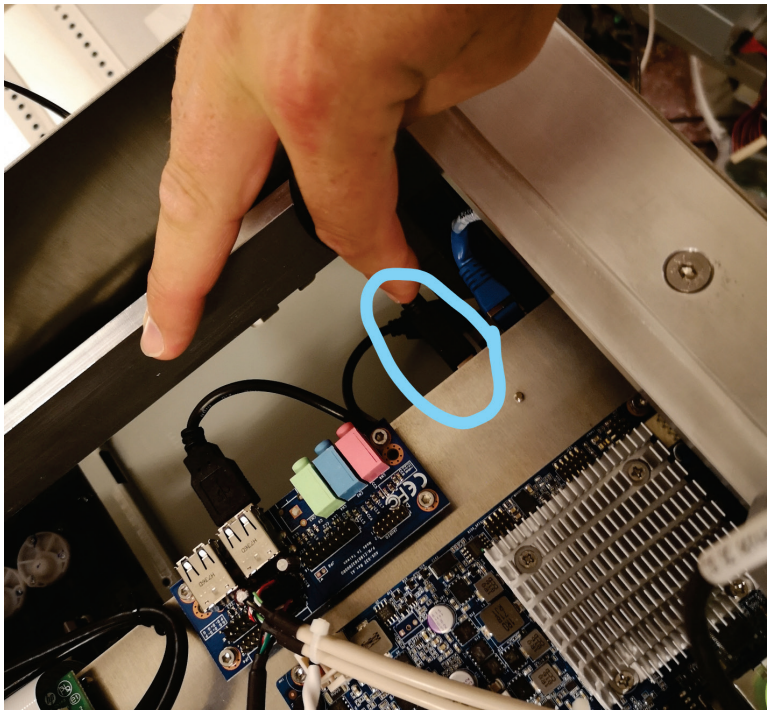
1. NavigatorHHRClientInstaller.exe

13 Debugging connections.

1. To debug the webpath board Connect an external PC to the T1030 board (the new webpath)
    a. Use a USB -> USB Mini to connect



2. To the MPCA to a an external PC to the MPCA
    a. Use a USB AB to connect
    b.



13.1 Controls for T1030 (webpath board)

Typical commands to use, these can be run through the webpath accessed through putty or directly through teraterm (USB mini connection):

Function	Command	Comment
Move the unit up or down	`dcseekmm` <value in mm 0-100>	0 is the highest position, 100 is the lowest position.
Calibrate actuators	`dcz`	Unit is moved to the top and calibrated (tilt etc)
Calibrate the table position height and x nad y tilt, to create the base settings.	`calall`	
Read the power state of the mpca	`Mpcap`	It will return 1 if the power is on

Push the virtual power button of the MPCA	`Mpcap` (2 or 0)	2 the button is pressed, 0 the button is released.
		To switch it on
		`>mpcap 2`
		wait 2 seconds then enter
		`>mpcap 0`

Power control of mpca, fans etc	`V33off <0,1 or blank>`	Blank reads the value 0 power is provided 1 power is cut
Read the weight on of the individual load sensor, there are 4 in total	`Lgram <1,2,3 or 4>`	
Read the total weight on the load sensors	`Lgramt`	No parameters

14 Revision history

1 Thomas Jensen

1.1 Thomas Jensen

Add RIP ip address (12.1) and die-to-die overlap feature (9)

1.2 Thomas Jensen

RIP Rotation and offsetting explained. Manual service tray movement