blister partner

Pouch Inspector

Manual

POUCH INSPECTOR V3.0

CUT&ROLL GEN II

Pouch Inspector

Optimize the **packaging process** with a **reliable** partner.

Congratulations on purchasing the *Pouch Inspector*, a high-quality inspection machine.

To get off to a good start and make the most of our products, we recommend reading the manual first.

If you have any questions, please do not hesitate to contact your *Pouch Inspector* supplier.

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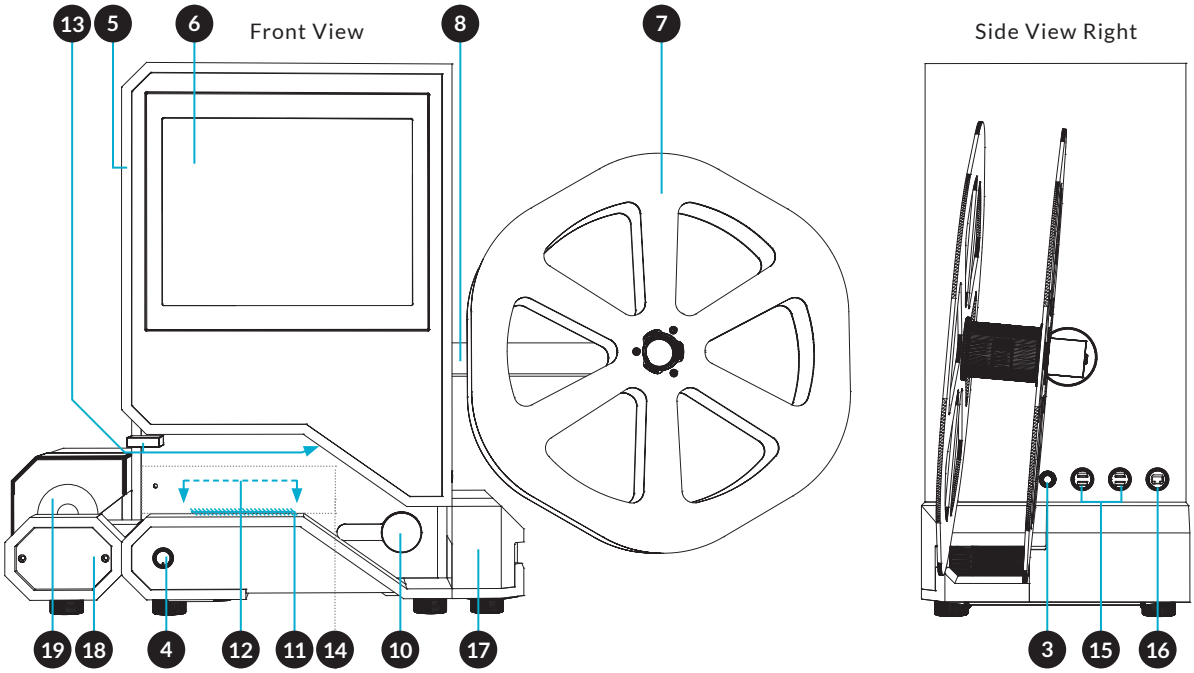
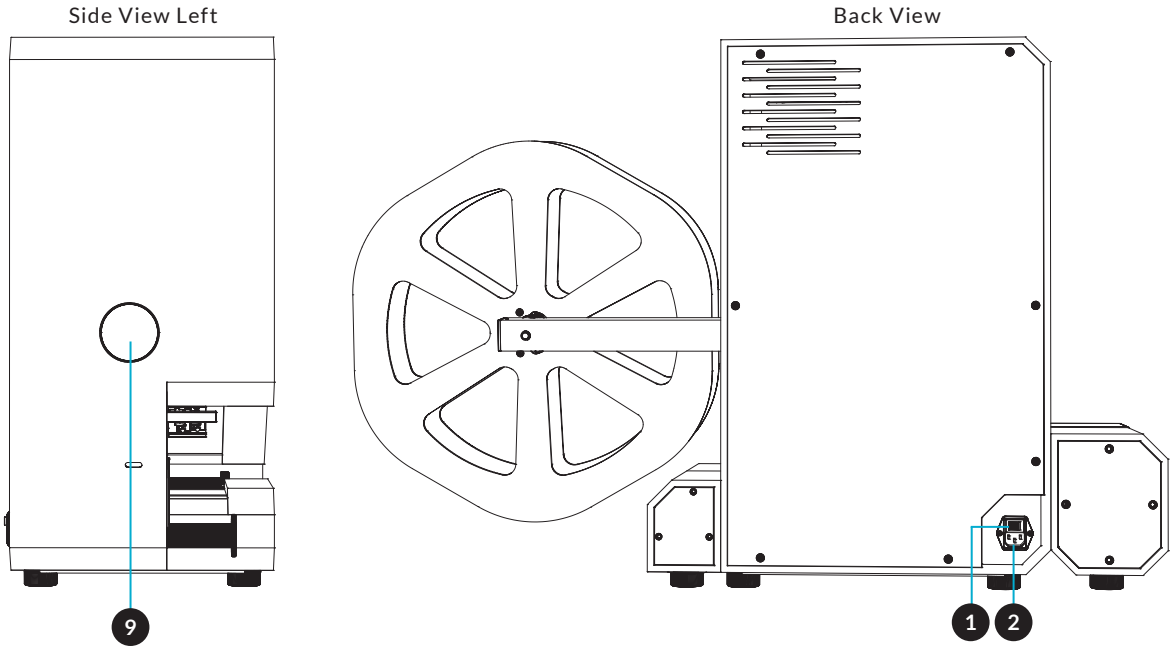
Parts Naming

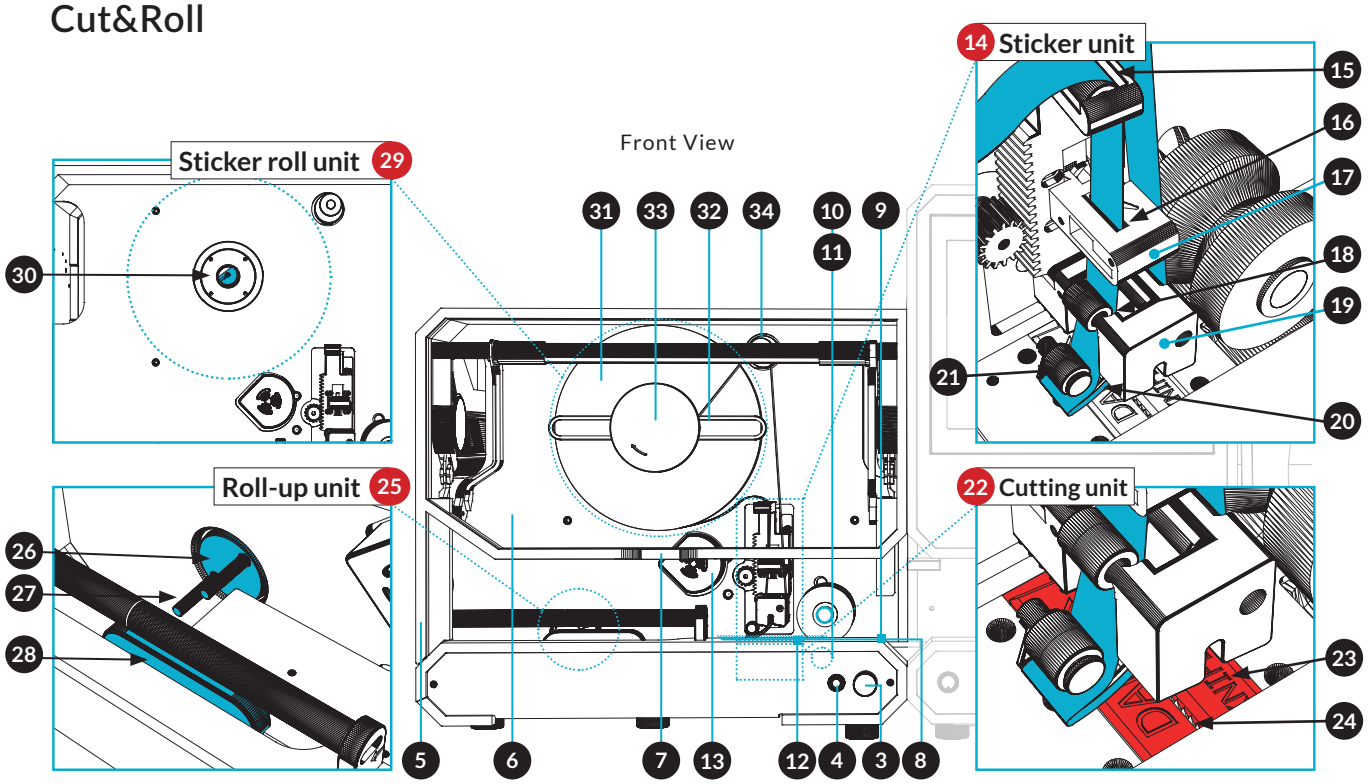
Pouch Inspector with Pi Transport

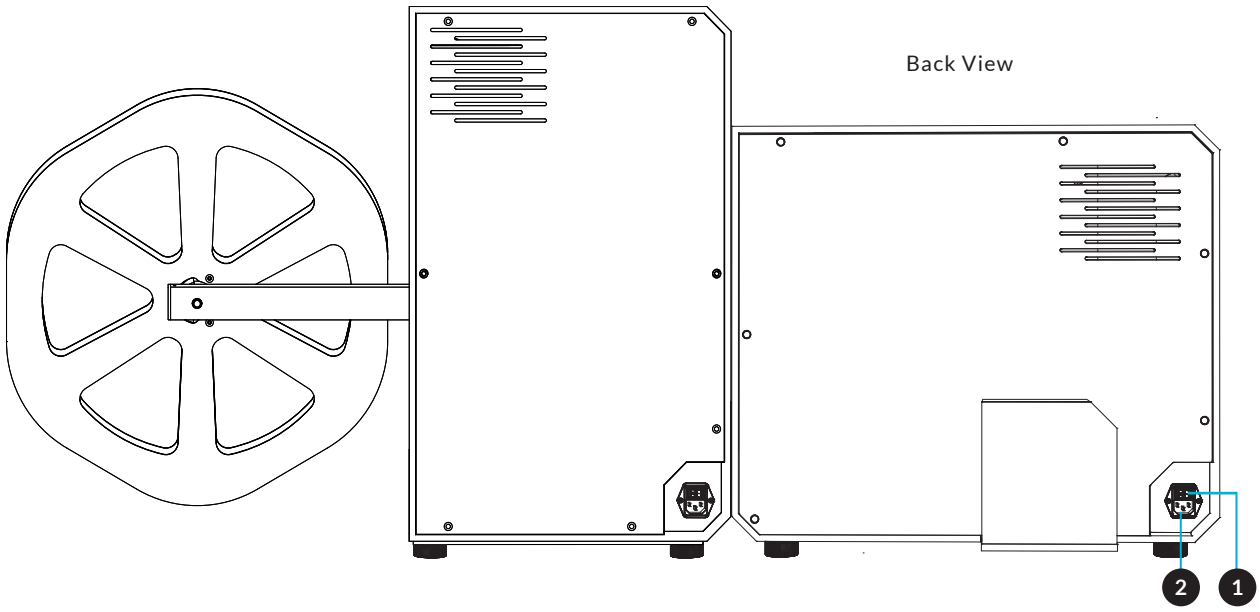




1 Main switch (back)
2 Power cable connection
3 On/off switch for computer (right side)
4 On/off switch for touchscreen (front)
5 Casing (bacteria-resistant material)
6 Touchscreen
7 Spool (Spool Spinner - hexagon)
8 Right spool arm (for inspecting spool)
9 Opening for: motorized spool arm (left) or Cut&Roll connection
10 Medication pouch guide A
11 Backlight
12 Inspection area
13 LED lighting
14 Back wall
15 USB 3 port (4 ports)
16 Ethernet (LAN) port
17 Pi Shaker (optional)
18 Pi Transport (optional)
19 Pi Transport foam roll

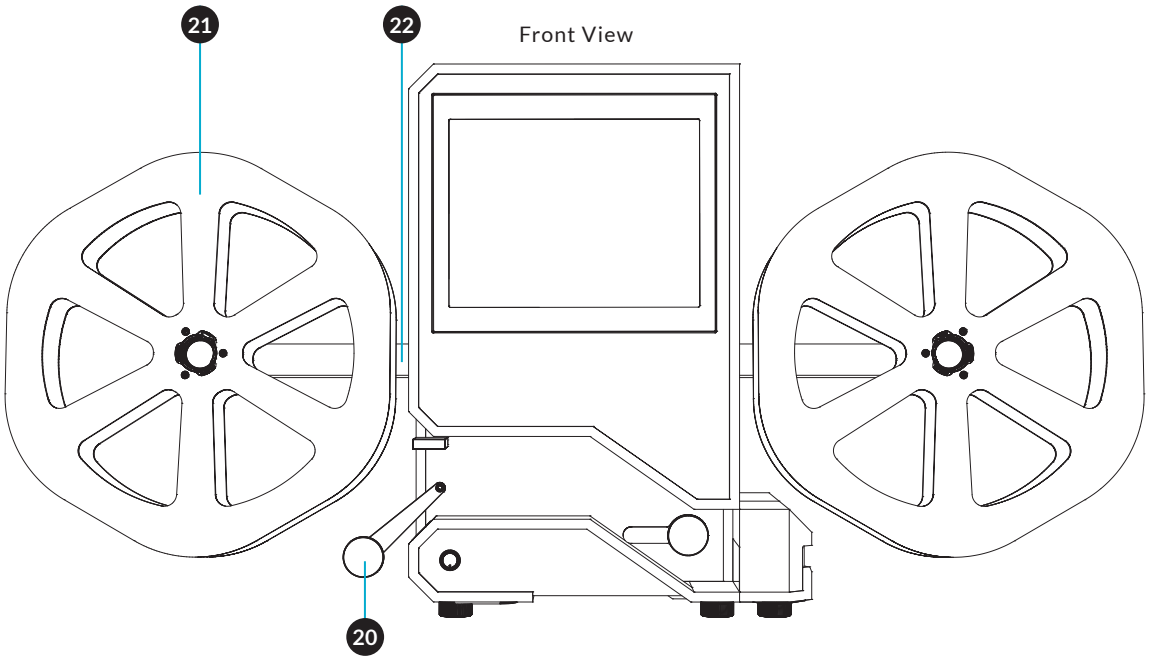
Cut&Roll





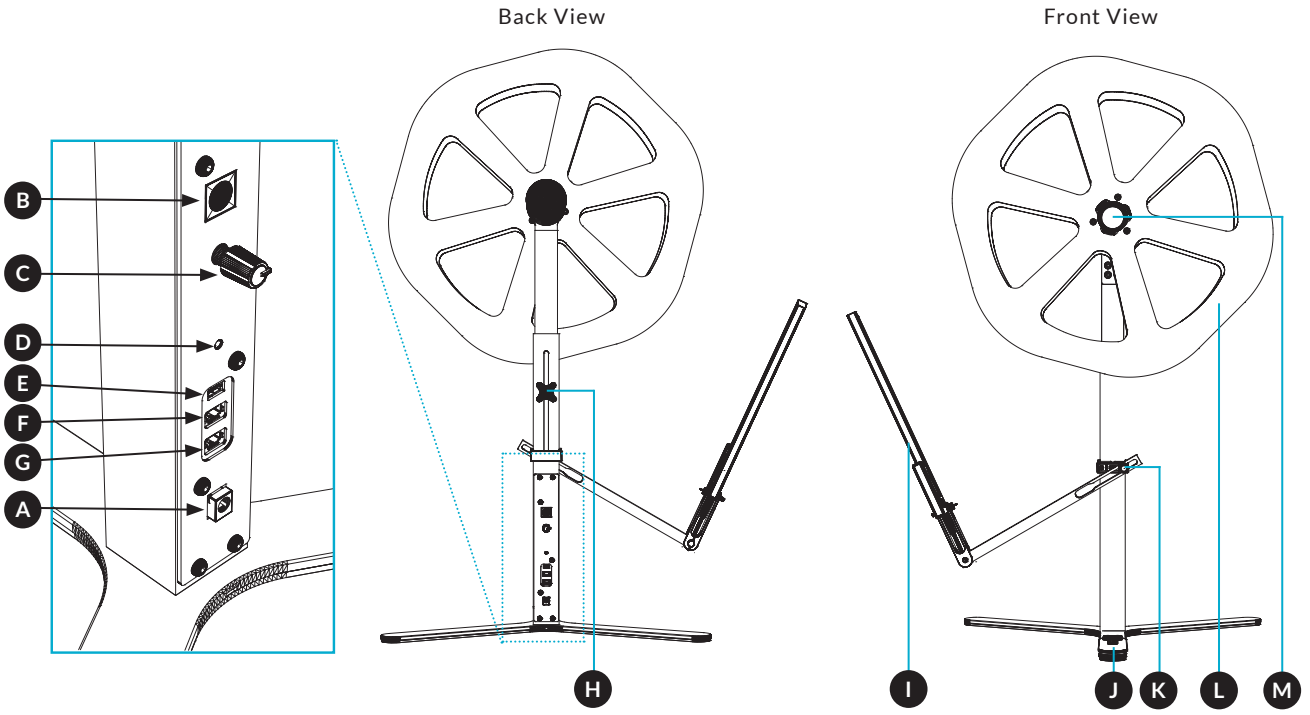
1 Main switch (back)
2 Power cable connection
3 Emergency stop button (front)
4 Reset button
5 Casing (bacteria-resistant material)
6 Transparent lid
7 Transparent lid handle
8 Transport track
9 Start sensor (sensor 1)
10 Upper foam roll [CR-002]
11 Lower foam roll [CR-018]
12 Stop sensor (sensor 2)
13 Blower
14 **Sticker unit**
15 Sticker ribbon guide 1
16 Sticker ribbon guide 2
17 Sticker sensor
18 Sticker ribbon guide 3
19 Pouch Pusher
20 Hinged lip
21 Sticker ribbon guide 4
22 **Cutting unit**
23 Spring beds (red)
24 Knife
25 **Roll-up unit**
26 Cylindrical pin guide
27 Pins (2 pieces)
28 Output flap
29 **Sticker roll unit**
30 Sticker roll holder (fixed part)
31 Sticker roll
32 Sticker roll clamp
33 Sticker ribbon holder
34 Sticker ribbon guide 5

Pouch Inspector Reel-to-Reel



20 Medication pouch guide B
21 Spool (Spool Spinner - hexagon)
22 Left spool arm (motorized arm)

Pouch Winder (optional)



A Power cable connection
B On/off switch
C Speed and direction control knob
D Reset button
E Firmware update port
F Sensor cable port
G Pedal cable port
H Spool height adjustment knob
I U-sensor
J Foot pedal
K U-sensor adjustment knob
L Spool (Spool Spinner - hexagon)
M Spool holder

1 Our Products

Pouch Inspector

The *Pouch Inspector* is a standalone inspection machine that inspects packaged medication for correct content, based on the supplied quantities and types of medication per pouch. When a strip with filled medication pouches is placed on the *Pouch Inspector*, the inspection begins immediately at a speed of approximately 3 to 5 pouches per second (180 to 300 pouches per minute).

The contents of each pouch are verified based on the visual characteristics of the pills against the expected medication. The results are stored for further processing and documentation.

Unknown, missing, or excessive medication is marked without interrupting the process and automatically integrated into the analysis. The status of each pouch is immediately visible on the screen. Alarmed pouches are then manually checked, repaired, and re-inspected before the batch is approved for release.

Cut&Roll

As a supplement to the *Pouch Inspector* inspection process, there is the *Cut&Roll* module.

As a supplement to the *Pouch Inspector* inspection process, there is the *Cut&Roll* module. Inspected medication pouches are fed from the *Pouch Inspector* into the *Cut&Roll*. *Cut&Roll* selects, cuts, rolls, and separates the medication pouches based on the chosen selection criteria. Selection criteria can include patient, location, sub-location, time of day, and/or intake time. It is also possible to automatically separate the compact rolls into alarmed rolls, which need to go to the repair station, or alarm-free rolls, which are ready for distribution. This significantly increases production speed.

Separating alarmed from alarm-free rolls is optional. It is also possible to disable the cutting and rolling functions and simply pass through long strips of medication pouches.

Pouch Winder

The *Pouch Winder* is very practical for rolling strips of filled medication pouches from a packaging machine onto a spool.

The *U-sensor* of the *Pouch Winder* automatically detects the strip of medication pouches and controls the motor without creating tension on the strips. This prevents torn strips.

It is possible to adjust the winding direction and speed. The foot pedal can be used to manually wind a spool (in both directions).

The *Pouch Winder* can be used with any known brand of packaging machine.

For readability, the term 'packaging machine' has been chosen in this manual, which also refers to and is interchangeable with 'MDS' (Medication Distribution System).

2 Safety Instructions and Warnings

The *Pouch Inspector*, *Cut&Roll*, *Pouch Winder*, and any accessories are electrically powered machines and must be operated with care and caution. Follow the safety instructions to prevent serious injury to users and damage to the machines.

2.1 Power Supply & Network

- 220-240V
- 50-60Hz
- Minimum 2A
- 1 power outlet
- A 1 Gbps Ethernet network connection within 5 meters of the Pouch Inspector

2.1.1 Power Consumption of Pouch Inspector

- 170 Watts
- 0.8 Amps

2.1.2 Power Consumption of Pouch Inspector + Cut&Roll

- 260 Watts
- 1.4 Amps

2.2 Use of UPS

For the proper functioning and maintenance of the machines, an uninterrupted power supply is essential. Due to regional and national differences in power grids and potentially poor electrical installations, we provide a power strip with surge protection as standard with a *Pouch Inspector*. Sometimes a UPS system is necessary between the machines and the power source.

A UPS system performs three primary functions:

- It filters incoming dirty power and supplies the machines with clean, uninterrupted power.
- It provides emergency power to cover temporary voltage drops or short-term power outages.
- It enables controlled system shutdown during a prolonged power outage.

You must make the decision yourself regarding the purchase of such a system.

2.3 Lifting

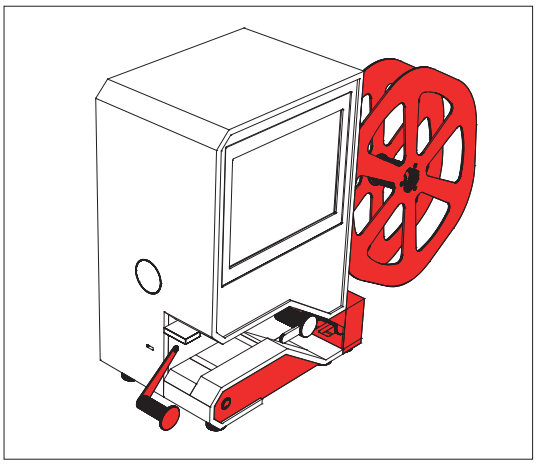
Lifting machines with moving parts requires appropriate caution. Be aware of potential hazards and turn off the machine before lifting it.
Avoid lifting by the spools and moving parts, and use proper lifting techniques.

Attention!

If the Pouch Inspector receives a significant shock, recalibration may be necessary.

2.3.1 Pouch Inspector

We recommend lifting the *Pouch Inspector* (31 kg) with two people.

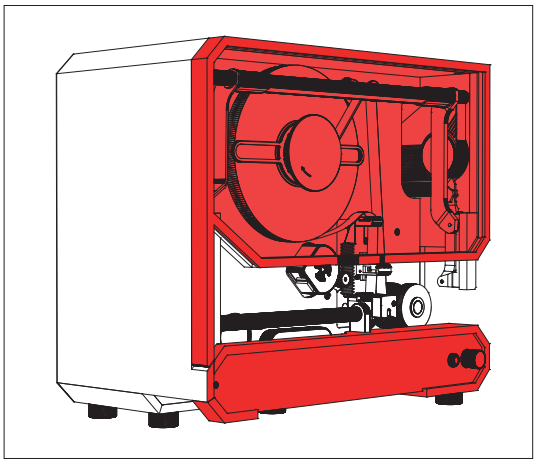


Attention!

Only lift the Pouch Inspector by the white casing.
Avoid the red-colored parts.

2.3.2 Cut&Roll

We recommend lifting the *Cut&Roll* (39,5 kg) with two people.

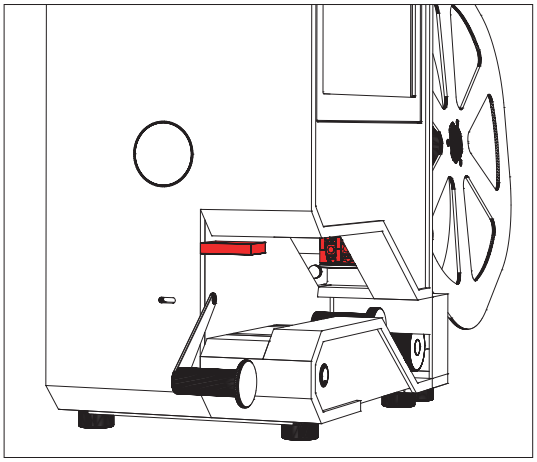


Attention!

> *Only lift the Cut&Roll by the white casing. Avoid the red-colored parts.*

2.4 LED Lighting

The *Pouch Inspector* uses LED lighting. Avoid looking directly into the LEDs [13], as this is bright and intense light and can be harmful to the eyes.



LED lighting

It can lead to temporary or permanent damage to vision, so protect your eyes if it is necessary to look towards the LEDs or turn off the machine first.

2.5 Prevent Overexposure

Ensure that sunlight does not shine directly into or on the *backlight* [11] of the *Pouch Inspector*. Indirect (sun)light or a constant light source is not a problem.

2.6 Pouch Inspector Motorized Arm

If you have purchased a *Pouch Inspector Reel-to-Reel*, be aware of the moving parts, such as the motorized arm (left), which winds the strip of medication pouches onto the spool.

Be cautious with items that can get caught in the moving parts, such as long hair, parts of clothing, and scarves, etc.

The spool can be manually stopped, minimizing the danger, but prevention is better.

Attention!

> *Do not move or rotate the spool manually; this can damage the motorized arm and circuit board.*

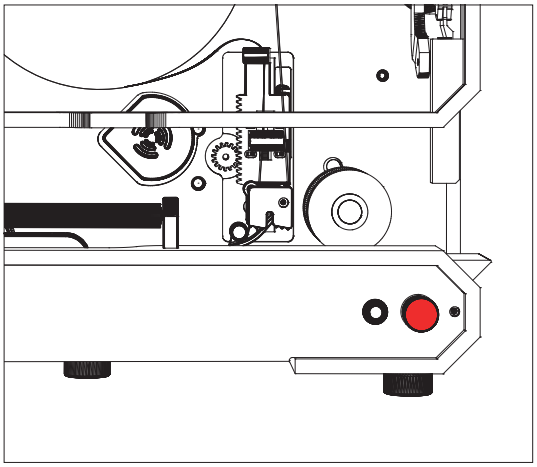
2.7 Cut&Roll Sharp and Moving Parts

If you have purchased a *Cut&Roll*, be aware of the danger of the sharp and moving parts.

These parts, such as the knife [24], foam rollers [10, 11], Pouch Pusher [19], and pins [27] of the Roll-up unit [25], are located behind the upward-hinged transparent lid [6]. This lid contains a magnetic switch that automatically stops all motors when opened.

2.7.1 Emergency Stop Button

The *Cut&Roll* emergency stop button [3] immediately shuts off all motors when pressed.



Emergency Stop Button

Press the *emergency stop button* first, then open the *transparent lid* [6]. This will stop all motors and ensure it is safe to make adjustments.

Always reset the *Cut&Roll* after using the *emergency stop button*. This can only be done if the inspection software *Pi Gui* is activated. See the explanation at 7.2.3.

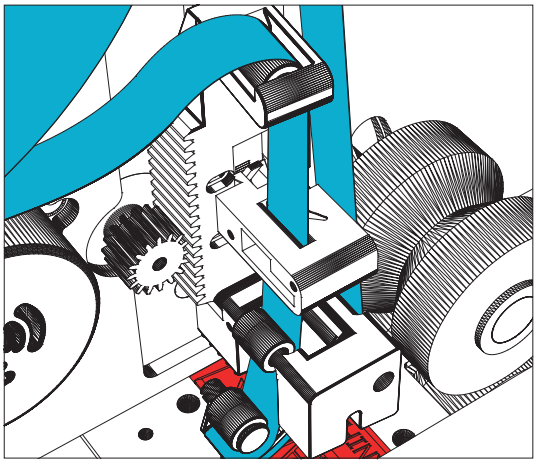
2.7.2 Cutting Unit

In case of problems or adjustments, such as replacing a *sticker roll* or removing pill residues, always press the *emergency stop button* [3] first, then open the *transparent lid* [6].

This will stop all motors and ensure it is safe to make adjustments.

When pressing these *spring beds* [23], the *knife* [24] becomes exposed. The *Pouch Pusher* [19] moves up and down towards the *knife*.

The knife of the *cutting unit* [22] is located between two red *spring beds* [23].



Cutting Unit

Attention!

> *Be careful with the cutting unit. The knife is very sharp.*

2.8 Inside

Always ensure that the back of the *casing* [5] of the *Pouch Inspector* and *Cut&Roll* is closed and remains closed. Power and electrical cables (230 V) are located there. Only a qualified technician should open the casing of the machine.

2.9 Pouch Inspector Cleaning Advice

To ensure the best operation of the machines, cleaning is necessary.

Cleaning is an underestimated necessity for maintaining and ensuring the proper functioning of the machines.

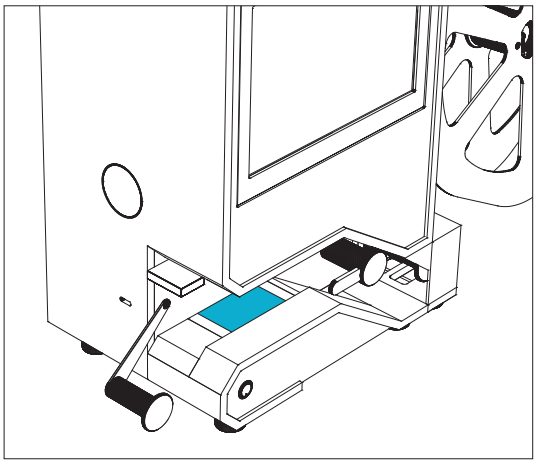
Due to dirt, poor maintenance, and wear, the machines may no longer operate optimally. Our advice is to actively clean the machines in relation to the production quantity.

2.9.1 Cleaning the Backlight

The *backlight* [11] is the square transparent panel over which the strips of medication pouches slide. Cleaning should be done from left to right with a slightly damp, soft microfiber cloth.

Attention!

> *Do not use alcohol. It can damage the surface of the backlight.*



Backlight

Reason:	Ink from the medication pouches remains on the surface and, over time, causes more false alarms or obstructs the proper reading of barcodes.
Frequency:	Daily - depending on the production volume, type of film, and ink used.
Time:	1 minute
Tool:	Water (do not use alcohol!)

2.9.2 Cleaning the Touchscreen

The *touchscreen* [6] can be cleaned with a slightly damp, soft microfiber cloth or screen cleaning wipe. Hard rubbing is not necessary to remove fingerprints or grease stains.

Attention!

> *Use little water or a professional screen cleaner, but no alcohol-based products to prevent damage.*

Reason:	To maintain optimal performance
Frequency:	Daily
Time:	1 minute
Tool:	Water or professional screen cleaner

2.9.3 Cleaning the Casing

The *casing* [5] (the white parts of the machine) can be cleaned with a slightly damp sponge with water and/or alcohol. Black ink residues can be easily removed with a sponge.

Reason:	Aesthetic
Frequency:	As needed
Time:	5 minutes
Tool:	Water or alcohol

2.10 Cut&Roll Cleaning Advice

To ensure the best operation of the machines, cleaning is necessary.

Cleaning is an underestimated necessity for maintaining and ensuring the proper functioning of the machines.

Due to dirt, poor maintenance, and wear, the machines may no longer operate optimally.

Our advice is to actively clean the machines in relation to the production quantity.

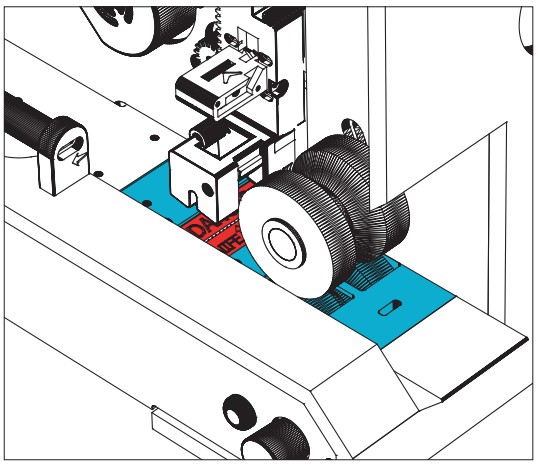
2.10.1 Cleaning the Transport track

The *Transport track* [8] of the *Cut&Roll* is the narrow track at the bottom where the medication pouches are pulled over.

Attention!

> *Do not use alcohol. It can damage the surface of the Transport track and the sensors located there.*

Cleaning should be done with a slightly damp microfiber cloth.



Transport track

Reason:	Ink residues can stick and cause unevenness.
Frequency:	Weekly, depending on the production volume.
Time:	1 minute
Tool:	Water (do not use alcohol!)

2.10.2 Cleaning the Casing

The *casing* [5] (the white parts of the machine) can be cleaned with a slightly damp sponge with water and/or alcohol.

Black ink residues can be easily removed this way.

Reden:	Aesthetic
Frequentie:	As needed
Tijd:	5 minutes
Tool:	Water or alcohol

3 Inspection is not Control

Be aware that the *Pouch Inspector* is an inspection machine. It inspects the contents of the medication pouches but does not verify the identity of the objects (pills).

It is important to realize that humans are always responsible for the correct input (data) into the computer system to achieve the correct outcome and minimize errors.

To provide more insight into how the *Pouch Inspector*'s inspection differs from control, here is more information about these processes.

3.1 What is Identity Control?

Identity control of a pill involves determining with certainty which medication it is based on its chemical composition. This requires examining the chemical components of each pill individually. Generally, this is done using a sample of the pill to be tested.

For complete identity control, various analytical techniques are often combined to ensure a reliable identification of the medication. These are comprehensive and time-consuming tests.

3.2 How Does Inspection Work?

The *Pouch Inspector* receives information from the packaging machine (or MDS) about what the contents of each medication pouch should be. A single strip of filled medication pouches is placed on the *Pouch Inspector* by hand or on a spool. Each pouch is inspected and assessed.
To determine if the contents correspond to the production order, the *Pouch Inspector* 'views' the objects (pills) in each pouch and compares their physical characteristics to reference models in the database. Various parameters are inspected, such as color, shape, diameter, surface, and quantity. It also records if there are objects in the pouch that do not belong or if there are too many objects. It looks for *match*es or discrepancies to determine if the expected pill *match*es the reference model within the set tolerances.

If it *match*es, the determination of the *Pouch Inspector* (including any set tolerances) is that the contents of the pouch correspond to the production order.
If discrepancies are found, the contents do not *match* the expected packaged objects (pills) according to the *Pouch Inspector*'s comparison with the reference models in the database of the production order. This may involve one or more objects (pills) that do not *match* in appearance, are too many, or are missing, and the medication pouch is marked with an alarm.

During the inspection of an object (pill) by the *Pouch Inspector*, the chemical composition is not determined; it is not an identity determination. It only establishes the highest possible expectation based on physical characteristics. Because our high-end software continuously enriches the database with information about the objects (pills) and makes comparisons extremely quickly—much faster than the human brain and much more accurately—it is possible to determine with relatively high certainty that the object *match*es the reference model.

3.3 Establishing the Identity of the Reference Model

The *Pouch Inspector* software inspects the medication pouches by searching for objects in the pouch and *match*ing them with models that the user has added. These models are called reference models.

A reference model is an established model that determines which image of the object (the pill) corresponds to which medication name and its associated identity characteristics. This is assessed and established by authorized personnel within the organization.

Since identity control is not performed by the *Pouch Inspector*, it is crucial that identity control for the reference models takes place in a controlled and procedural work environment.

3.4 Filling the Database with Reference Models

The *Pouch Inspector* is equipped with an I*n-process Model Manager* (*IMM* technology), which allows inspection to start immediately without needing to first 'train' all the medication. From the start, *IMM* applies intelligent automatic detection of new objects (pills) without interrupting the inspection.

Each medication pouch is inspected very precisely. Based on reference models, it is determined whether the contents correspond to the production order. If there is no reference model available for an object (pill) (i.e., no reference models have been trained yet), the pouch with the object is 100% rejected and included in the analysis.

During the *batch* analysis, the responsible person with the appropriate rights must determine and establish which medication the unknown object actually is. One of the proposed models is linked to the correct medication description by this person. Once the suggestion is assessed and approved, an active reference model for that object (pill) is created and used for future production inspections.

From the moment a model is added and released, it is immediately used in the inspection process. Previously inspected pouches can be easily re-inspected without needing to be run through the *Pouch Inspector* again.

Due to *IMM* and this methodology, the manual pre-training of medication is unnecessary, saving a lot of time. *IMM* also ensures that the database becomes more complete and continuously up-to-date during all productions.

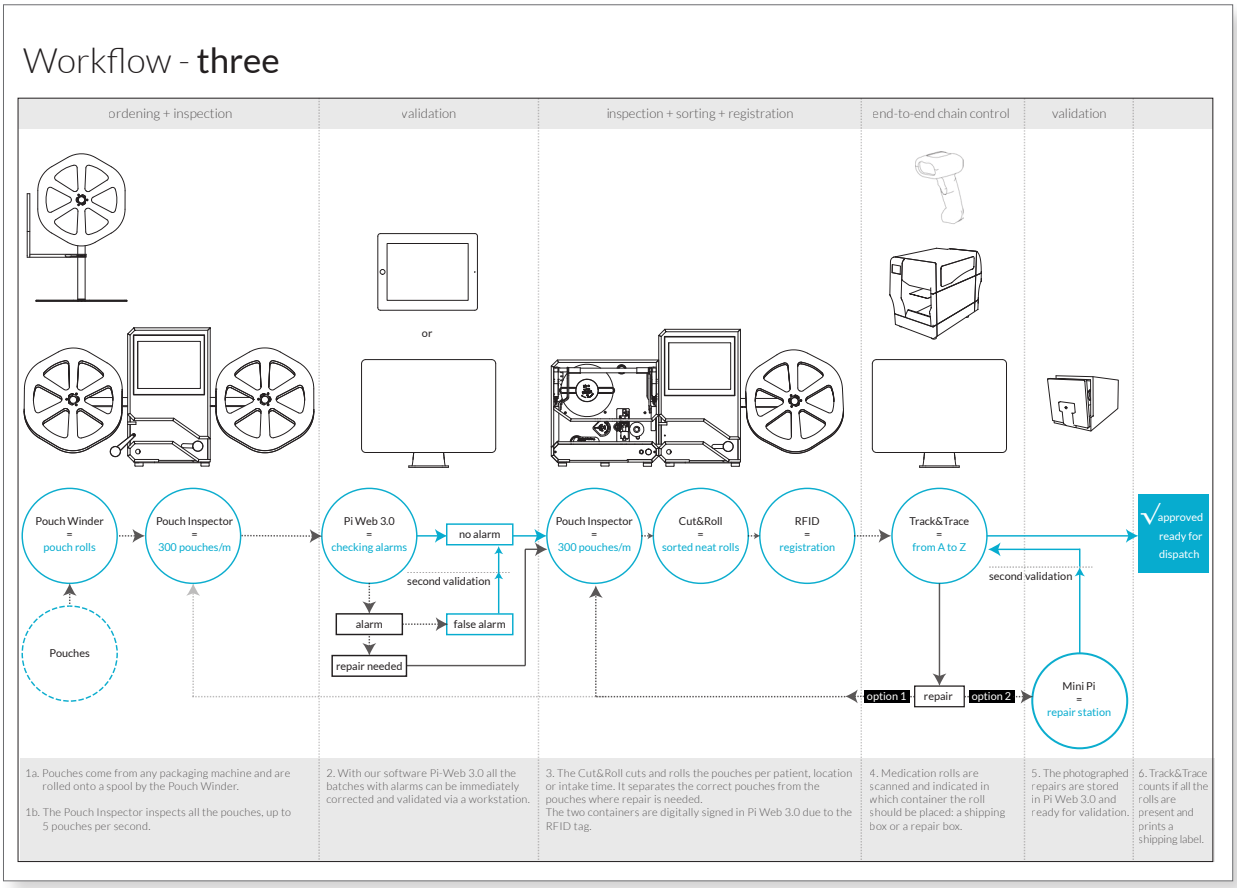
4 Configurations & Workflows

The optimal configuration for your production depends on many different factors, including the quantity of medication pouches to be inspected, the desired end result, and the handling of the medication pouches.

All medication pouches are inspected and analyzed in the same way, whether using a *Pouch Inspector* with *Pi Transport* or a *Pouch Inspector* with *Cut&Roll*. However, the difference lies in how the pouches are processed.

In the first option, the strips end up as long ribbons in a bin and then need to be manually processed into individual rolls per patient. In the second option, with *Cut&Roll*, the end result is compact rolls per patient, which can optionally be sorted immediately into separate bins. One bin is for rolls that contain alarms and may need to be repaired, and the other bin is for alarm-free rolls that are ready for further distribution.

The three configurations can also be combined into various *workflows*. For an optimal and efficient processing *workflow*, different *workflow* combinations can be created.
For example, a *Pouch Inspector Reel-to-Reel* that inspects medication pouches at high speed can be combined with a *Pouch Inspector* with *Cut&Roll* that then rolls the strips of medication pouches per patient and sorts these rolls into those needing repair and alarm-free rolls ready for further processing. With this *workflow*, 'Workflow - three,' large quantities of medication pouches can be processed very efficiently.

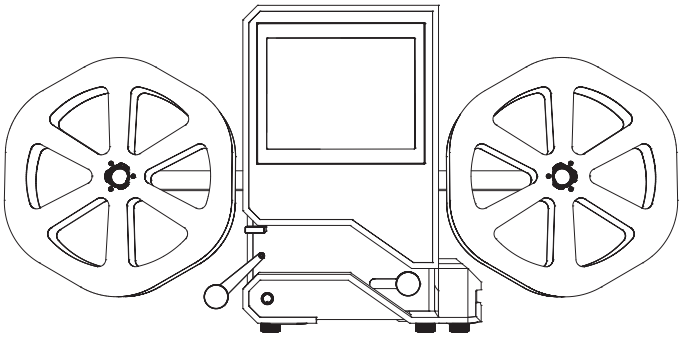


4.1 Configuration 1 - Pouch Inspector Reel-to-Reel

This configuration rewinds the inspected strip of medication pouches back onto the spool.

End result: A spool with inspected medication pouches.

Advantage: The inspected strip is neatly rewound, and the full spool can be easily transported to the next department.

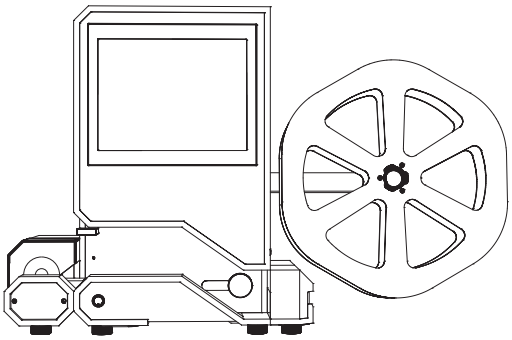


4.2 Configuration 2 - Pouch Inspector with Pi Transport

In combination with *Pi Transport*, the entire strip of medication pouches is pulled from the spool through the *Pouch Inspector* and ends up as a single loose ribbon in a bin.

End result: A loose ribbon of inspected medication pouches.

Advantage: No need to unwind the spool to find the medication pouch that needs repair.

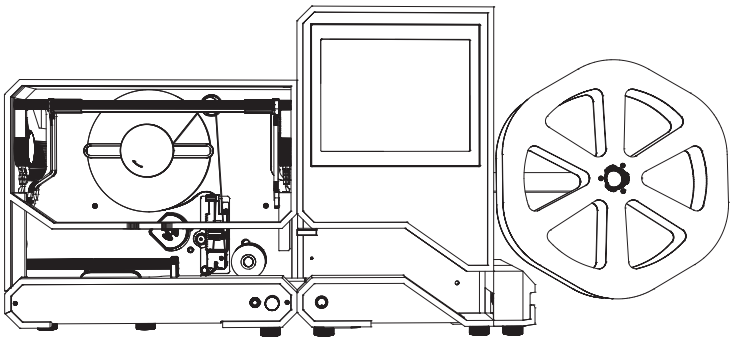


4.3 Configuration 3 - Pouch Inspector with Cut&Roll

This configuration processes the inspected medication pouches immediately into smaller rolls per patient (or other selection criteria) that can be automatically sorted.
Cut&Roll selects, cuts, and separates medication pouches automatically.

End result: Smaller sealed rolls per patient (or other selection criteria).

Advantage: Medication pouches are neatly rolled and sorted into an 'alarm' or 'alarm-free' bin. The alarm-free rolls are ready for immediate further distribution.



5 Accessories and Supplies

It is recommended to use only Blisterpartner accessories and supplies. These are specifically designed for our machines and ensure optimal performance, reliability, and durability.

By choosing brand-specific accessories and supplies, you maintain optimal functionality, preserve the warranty, and extend the lifespan of the machines.

5.1 Cut&Roll Stickers

Cut&Roll uses special stickers to close the rolls. These stickers are precisely tailored to *Cut&Roll* for optimal performance. They are exclusively available through Blisterpartner or authorized Blisterpartner suppliers.

It is vital for the optimal functioning of the machine that only these stickers are used. Using alternative stickers can disrupt the machine's operation and result in the loss of warranty and support for any issues.

The suitable type of sticker depends on various factors, such as the type of film of the medication pouches, environmental humidity, and the ink used by the packaging machine. This will be determined experimentally.

Standard *Cut&Roll* comes with a roll of Type 2: Hi-Tak (6,000 stickers).

There are three types of stickers:

Type 1: Normal	*[art.nr. BP-0494]*
Type 2: Hi-Tak (*general use*)	*[art.nr. BP-0495]*
Type 3: Medium	*[art.nr. BP-0633]*

5.2 Pi Transport *[part no. PT-004]*

Pi Transport automatically pulls the strip of inspected medication pouches through the *Pouch Inspector*, resulting in a loose ribbon of medication pouches.

It saves the trouble of unwinding a spool to find the pouch that needs repair and is easy to install.

5.3 Repair Station – Mini Pi *[part no. MP-001]*

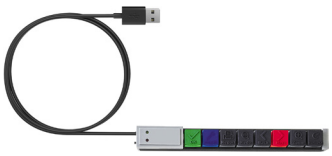
This repair station allows you to quickly and easily add images of repaired medication pouches to *Pi Web* (the digital workspace of the *Pouch Inspector*).

You can add as many images as needed, for example, of medication packaging used to repair the pouch.

5.4 Pi Shaker *[part no. PS-002]*

The *Pi Shaker* is designed to gently shake pills into the correct position for inspection, reducing false alarms. This module can be easily added to a *Pouch Inspector*.

5.5 Mini Keyboard *[part no. MK-001]*



The *Mini Keyboard* is designed to speed up the validation process. With only eight buttons, including 'Ok,' 'Back,' 'Next,' and 'Report,' you can easily navigate through the validation process in *Pi Web*.

5.6 Pouch Winder *[part no. PW-007]*

With a *Pouch Winder*, it is very easy to roll filled strips of medication pouches from a packaging machine onto a spool. The *U-sensor* detects the pouches. Both the winding speed and the winding direction can be adjusted. With the help of a foot pedal, it is also possible to manually wind a spool.

5.7 Spool Spinner *[part no. SP-002]*

Our spool, called *Spool Spinner*, works perfectly with the *Pouch Winder* and *Pouch Inspector* for the seamless rolling of filled strips of medication pouches coming from the packaging machine. With a convenient *easy-slide-in* system, the first pouch can be easily clamped. Thanks to the rotating core, tearing of the strips is prevented.

The *Spool Spinners* are available in three variations and with different core colors, providing easy recognition at every stage of the process.

5.8 Cut&Roll Table

The *Cut&Roll* Table is made from bacteria-resistant material and has the appropriate outlets and dimensions for the *Pouch Inspector* with *Cut&Roll* configuration. A flap can be placed under the *Cut&Roll* to separate alarmed and alarm-free rolls.

The table provides extra storage space with an adjustable shelf and guides, allowing you to customize it to the size of bins used. Thanks to the swivel wheels, the table is also easily movable.

Dimensions:

Width:	1150 mm	*(45.28 inches)*
Height:	1606 mm	*(63.23 inches)*
Depth:	450 mm	*(17.71 inches)*

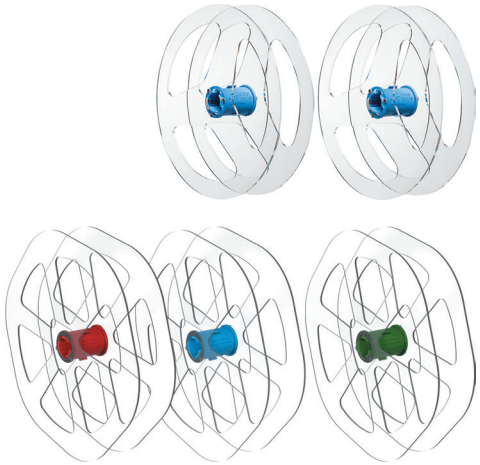
5.9 RFID System

To be able to trace each inspected medication pouch directly during the production process, we have developed the *RFID System*. This system provides real-time insight into the location of a specific inspected medication pouch.

What is in which bin is automatically communicated by the *RFID system* to *Pi Web* and is immediately visible. This makes it easy to find a pouch that needs to be repaired.

In combination with our *Track&Trace* software, this system offers complete process control, from inspection to approved rolls per patient that are ready for shipment.

There are three types of Spool Spinners:



Round - 42 cm *(16.54 inches)*

Blue *(on request)*	*[part no. SP-001]*

Hexagonal - 42 cm *(16.54 inches)*

Blue	*[part no. SP-005]*

Hexagonal - 50 cm *(19.69 inches)*

Blue (*standard*)	*[part no. SP-002]*
Red	*[part no. SP-003]*
Green	*[part no. SP-004]*

5.10 Track&Trace

With our *Track&Trace* software package in combination with the *RFID* System, the handling of medication rolls after the inspection process is fully controlled.

It minimizes errors during processing and shipping. With *Track&Trace*, you always know where each medication roll is, its status, and whether it is being sent on time and to the correct location. It creates an end-to-end chain control through the digital registration of medication rolls processed in *Pi Web*. After scanning the barcode, *Track&Trace* indicates which bin the roll should be placed in. All details are recorded and can be reviewed later.

Major advantages include efficiency and time savings, release of inspected and approved rolls, and counting and verification using an input file like OCS.

Track&Trace software comes with a barcode scanner, all-in-one touchscreen computer, and a label printer.

6 Installation

After purchase, the *Pouch Inspector* will be connected to the network and the packaging machine by a certified Blisterpartner installer. This installation is necessary and requires professional expertise and cannot be performed by yourself.

Each packaging machine is unique, and each user has their own specific settings. Therefore, the initial configuration setup must be carried out exclusively by a Blisterpartner certified installer.

The initial installation typically can be completed within one to two days. The tuning period may take two to four weeks. During this period, fine-tuning will occur, and adjustments to calibration or settings may be necessary.

After this period, you can be confident that all discrepancies and special considerations have been noted, and that the machines are correctly set up for smooth production.

6.1 Scheduling an Appointment with an Installer

If the *Pouch Inspector* has not yet been installed, contact the supplier from whom the *Pouch Inspector* was purchased immediately.

7 Getting Started (Basic Use)

This manual provides insights into the essential functions and settings for a basic understanding of the operation and configuration options of our machines.

Since production processes vary by organization and there are numerous variables, not all configuration variations can be covered. For specific, customized adjustments that suit your organization and packaging machine, we recommend contacting your Blisterpartner supplier.

Safety is central to this manual, with the described procedure recommended as the safest way to operate our machines. Our processing speed and production quantities are based on this procedure.

For readability, the term 'packaging machine' has been chosen in this manual, which also refers to and is interchangeable with 'MDS' (Medication Distribution System).

7.1 Pouch Winder – Filling a Spool from the Packaging Machine

To prevent incorrect winding, it is important to correctly position the spool relative to the packaging machine (see Figure 1).

Use only the *Spool Spinner* spools [7] with rotating core from Blisterpartner. These spools are specifically designed for the *Pouch Inspector* and prevent the strips from tearing if too much tension is applied during winding.

The winding direction of the *Pouch Winder* can be adjusted with the *Speed and Direction Control Knob* [C]. It is also possible to manually wind a spool using the *foot pedal* [J].

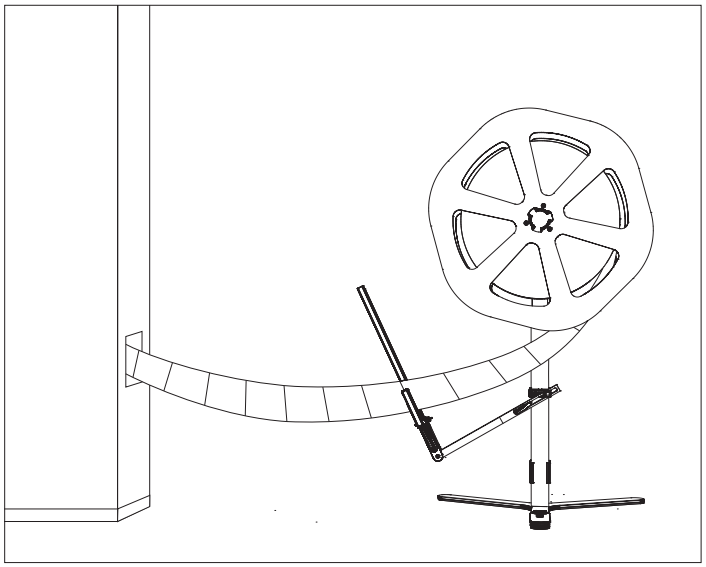


Figure 1 - Pouch Winder Setup

7.1.1 Positioning of a Pouch Winder relative to a Packaging Machine

STEP 1 Plug the *Pouch Winder* into the power outlet and place it with an empty *spool* [L] next to the packaging machine (see Figure 1).

STEP 2 Position the *U-sensor* [I] as close to the ground as possible. Make a loose loop with the strip of filled medication pouches from the packaging machine outlet through the 'U' of the *U-sensor* to the core of the spool. This is important because, as the tension increases and the strip of medication pouches is pulled out of the sensor, the *Pouch Winder* automatically stops rotating.

Once more pouches come out of the packaging machine, the sensor is reactivated and the *Pouch Winder* starts rotating again.

Attention!

Place the spool (Spool Spinner) over the metal bolt on the black round spool holder [M] of the Pouch Winder.

7.1.2 Securing Medication Pouches on the Spool

STEP 1 Slide the first medication pouch from the strip coming out of the packaging machine under the clip of the spool core.

STEP 2 Ensure there is a loose loop of medication pouches from the packaging machine, through the 'U' of the *U-sensor*, to the spool.

Attention!

Be mindful of how the pouches are winding to ensure they pass through the Pouch Inspector correctly.

7.1.3 Starting to Fill a Spool

STEP 1 Turn on the *Pouch Winder* with the *On/Off switch* [B].

STEP 2 Activate the packaging machine. As soon as the *U-sensor* detects that the strip of medication pouches is lengthening, the *Pouch Winder* starts rotating. When the tension increases and the strip of medication pouches is pulled out of the sensor, the *Pouch Winder* stops.
When more pouches come out of the packaging machine, the sensor is activated, and the *Pouch Winder* starts rotating again.

Good to Know

Adjusting Winding Speed
While the *Pouch Winder* is rotating (the *U-sensor* detects medication pouches), turn the *control knob* [C] further. The speed will then increase and be automatically saved as the new default winding speed.

Adjusting Rotation Direction
While the *Pouch Winder* is not rotating, press the *control knob* [C] once. This will be automatically saved and will become the new default rotation direction.

Using the Foot Pedal
The *foot pedal* [J] allows the *Pouch Winder* to rotate independently of sensor detection, at a higher speed. This is ideal for quickly filling a spool with a loose strip of medication pouches.

Adjusting Winding Speed with the Foot Pedal
While pressing the foot pedal and the *Pouch Winder* is rotating, turn the *control knob* [C] further to increase the speed. This will be automatically saved and will become the new default winding speed for the foot pedal.

7.1.4 Removing the Spool

Once the last pouch has passed through the *U-sensor*, the *Pouch Winder* stops rotating and the spool can be easily lifted off the *Pouch Winder*.

7.2 Pouch Inspector – Inspecting a Spool

When a filled spool is placed on the *Pouch Inspector*, the inspection starts immediately at a speed of approximately 3 to 5 pouches per second (180 to 300 pouches per minute).

The contents of each pouch are verified based on the visual characteristics of the pills against the expected medication. The results are stored for further processing and documentation.

Unknown, missing, or excessive medication is marked without interrupting the process and automatically integrated into the analysis. The status of each pouch is immediately visible on the screen. Alarmed pouches are then manually checked, repaired, and re-inspected before the *batch* is approved for release.

7.2.1 Turning On

STEP 1 *Check the main switch* [1] and the *power cable connection* [2]. These are located at the back of the *Pouch Inspector*. The main switch is turned on after installation and generally remains on.

STEP 2 Turn on the *Pouch Inspector* Computer - *Press the on/off button* [3] located on the right side of the machine. Press the button once to start it up.

STEP 3 Turn on the touchscreen and lighting - *Press the on/off button for the touchscreen* [4] located at the front of the machine.

STEP 4 **In combination with Pi Transport**
Pi Transport [18] is powered by the *Pouch Inspector*. Once the *Pouch Inspector* is turned on, *Pi Transport* will also be automatically powered on.

STEP 4 **In combination with Cut&Roll**
Turn on the *Cut&Roll – Main switch* [1]. This is located at the back of the machine.

STEP 5 Reset the red *Emergency Stop Button* [3] by pulling it out with a rotating motion. The button is located at the front of the *Cut&Roll*.

Attention!

Always reset the emergency stop button of the Cut&Roll by pulling it out with a rotating motion before use.

7.2.2 Placing a Spool

STEP 1 Place the full *spool* [7] to be inspected on the *spool arm* [8] on the right side of the *Pouch Inspector*.

STEP 2 The medication pouches are unwound clockwise from the spool. Ensure that the seal edge of the pouch runs along the *back wall* [14] of the *Pouch Inspector* and that the text on the pouch faces down.

Attention!

Place medication pouches with the text facing down to ensure that the inspection is not obstructed. The Pouch Inspector inspects from above.

Good to Know

- For some medication pouches, the seal edge should run along the front of the *Pouch Inspector*. This is an exception; typically (in 90% of cases), the seal edge should run along the back wall.

7.2.3 Starting the Inspection Software - Pi Gui

The *Pouch Inspector* is Windows-based and equipped with our powerful inspection software *Pi Gui*, which performs inspections and controls the *Pouch Inspector* (and any connected optional accessories).

To start inspecting, inspection software *Pi Gui* must be activated:

STEP 1 On the Windows taskbar or desktop, locate the *Pi Gui icon*.  Click this icon to start the inspection software.

Once the interface has started, you can begin inspecting.

Attention!

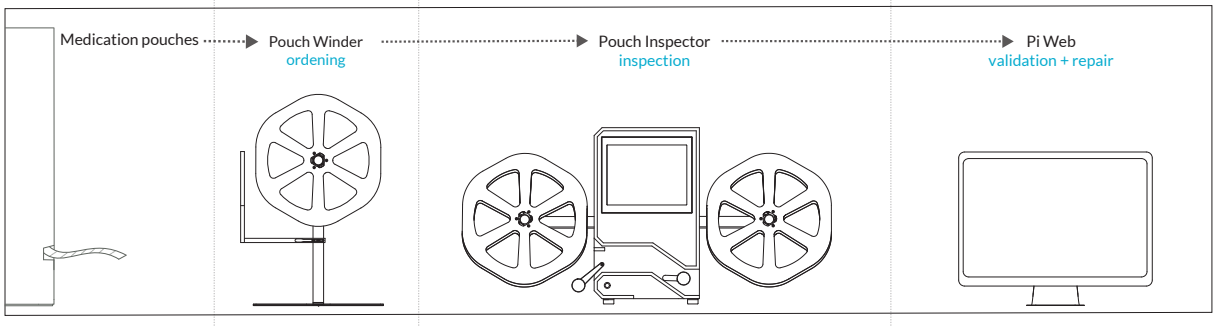
Ensure that nothing is on the inspection area during the startup of the inspection software Pi Gui and during calibration.

Good to Know

- The *Pi Gui* inspection software processes all inspection requests, whether for a physical roll passing through the *Pouch Inspector* or re-inspecting a batch via *Pi Web*.

For re-inspection, the *Pi Gui* inspection software must be running. It is recommended to keep the *Pi Gui* inspection software running as long as production is ongoing.

7.3 Pouch Inspector Reel-to-Reel - Configuration 1



A certified Blisterpartner installer has connected the *Pouch Inspector* with *Reel-to-Reel* and has configured everything to the packaging machine and network.

Below are the steps to start inspecting medication pouches filled by the packaging machine.

7.3.1 Inspecting

After the *Pi Gui* inspection software is started (see 7.2.3), you can begin inspecting the medication pouches. This can be a loose strip that is fed manually, or a full spool with a long strip of medication pouches (e.g., medication for different patients) placed on the right *spool arm* [8] of the *Pouch Inspector*.

STEP 1 Take the first pouch of the strip of medication pouches and manually feed it under *Medication Pouch Guide A* [10].

STEP 2 Pull the first pouch through until it is past the *inspection area* [12].

The strip can also be pushed forward to avoid fingers appearing in the first photo. *Note:* The photo of the first pouch, the leader pouch, may be blurry if it is 'pushed through' because the strip may not glide smoothly over the inspection area.

The inspection starts immediately. The batch data will be visible on the *Pouch Inspector Touchscreen* [6].

STEP 3 Feed the pouches through to under *Medication Pouch Guide B [20]* and manually guide the first pouch towards the spool already clicked onto the left arm of the *Pouch Inspector*.

Attention!

Since the first pouch is held by hand, the inspection of the first medication pouch will generate an alarm due to the visible finger.

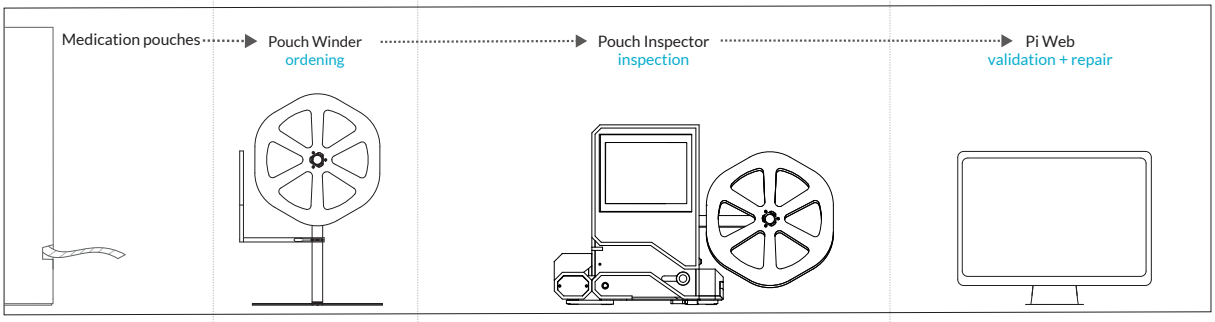
This can be turned off with a setting if needed.

STEP 4 Clamp the first medication pouch of the strip under the clip of the core of the empty spool.

STEP 5 Press the 'play' button ▶ on the *Pouch Inspector Touchscreen*. The spool will start rotating, and the inspection will continue automatically.

Once all the medication pouches have passed through the *Pouch Inspector*, the *batch* is inspected, and all inspection results are visible in *Pi Web*.

7.4 Pouch Inspector with Pi Transport - Configuration 2



A certified Blisterpartner installer has connected the *Pouch Inspector* with *Pi Transport* [18] and has configured everything to the packaging machine and network.

Below are the steps to start inspecting medication pouches filled by the packaging machine.

7.4.1 Inspecting

After the *Pi Gui* inspection software is started (see 7.2.3), you can begin inspecting the medication pouches. This can be a loose strip fed manually, or a full spool with a long strip of medication pouches (e.g., medication for different patients) placed on the right *spool arm* [8] of the *Pouch Inspector*.

STEP 1 Place a collection bin where the inspected strips of medication pouches can fall into.

STEP 2 Take the first pouch of the strip of medication pouches and manually feed it under *Medication Pouch Guide* A [10].

STEP 3 Pull the first pouch through until it is past the *inspection area* [12].

The strip can also be pushed forward to avoid fingers appearing in the first photo. *Note:* The photo of the first pouch, the leader pouch, may be blurry if it is 'pushed through' because the strip may not glide smoothly over the inspection area.

The inspection starts immediately. The batch data will be visible on the *Pouch Inspector Touchscreen* [6].

STEP 4 Slide the first pouch of the strip into the *Pi Transport* until it is under the *Pi Transport* foam roll [19].

STEP 5 Press the 'play' button ▶ on the *Pouch Inspector Touchscreen*. This will cause the *Pi Transport* foam roll to start rotating and feeding the pouches through.

Pi Transport will transport the medication pouches through the *Pouch Inspector* until the spool is fully unwound and all medication pouches are inspected.

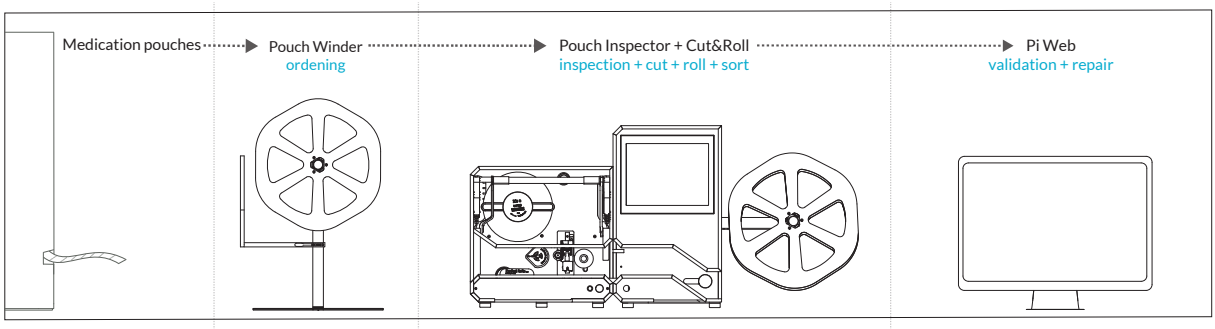
Once all the medication pouches have passed through the *Pouch Inspector*, the batch is inspected, and all inspection results are visible in *Pi Web*.

Attention!

Since the first pouch is held by hand, the inspection of the first medication pouch will generate an alarm due to the visible finger.

This can be turned off with a setting if needed.

7.5 Pouch Inspector with Cut&Roll - Configuration 3



A certified Blisterpartner installer has connected the *Pouch Inspector* with *Cut&Roll* and has configured everything to the packaging machine and network.

Below are the steps to start inspecting medication pouches filled by the packaging machine.
First, we begin with placing the sticker roll. This does not need to be done repeatedly but is essential to start the inspection.

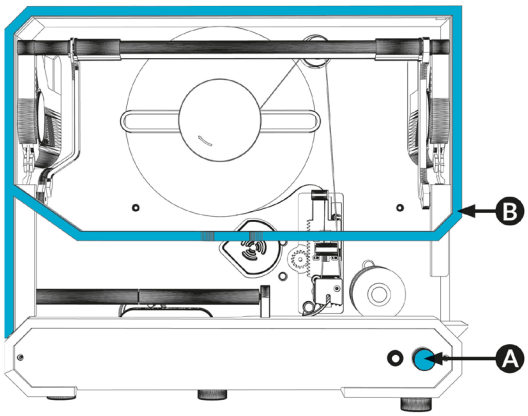
7.5.1 Placing the Sticker Roll

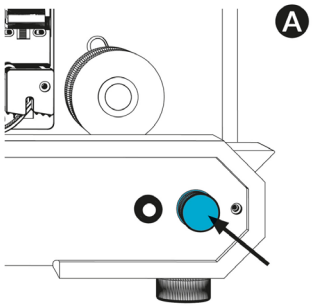
Attention!

Use only stickers intended for Cut&Roll. These can be ordered through Blisterpartner or your supplier.

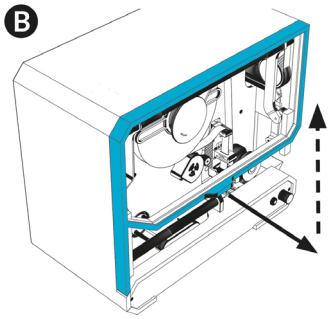
STEP 1 Cut&Roll Safe Opening

Always press the emergency *stop button* (A) first, then open the *transparent* lid (B).





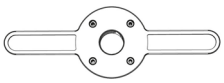
Always press the emergency *stop button* [3] first to ensure all motors are turned off.



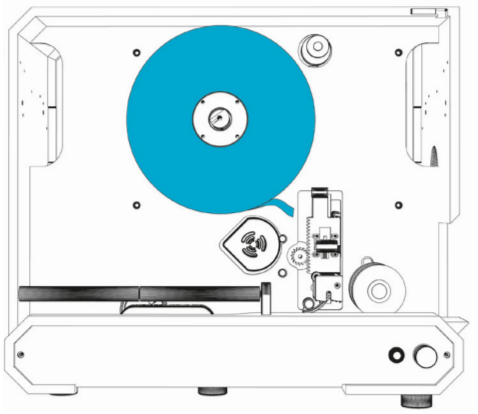
To open the *transparent lid* [6], first pull it forward, then it will continue to open upward automatically.

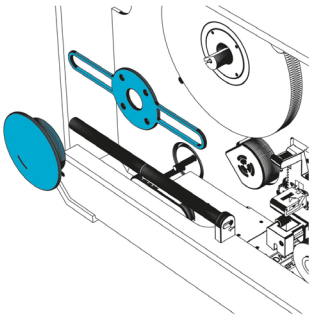
STEP 2 Place (or replace) the Sticker Roll

Sticker ribbon Holder [33]

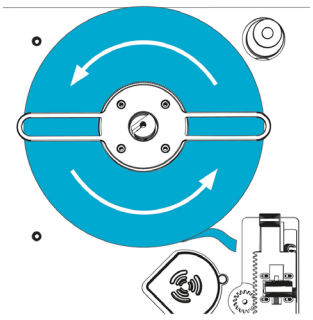


Sticker Roll Clamp [32]





Pull the magnetic *Sticker ribbon holder* [33] and the *sticker roll clamp* [32] loose.



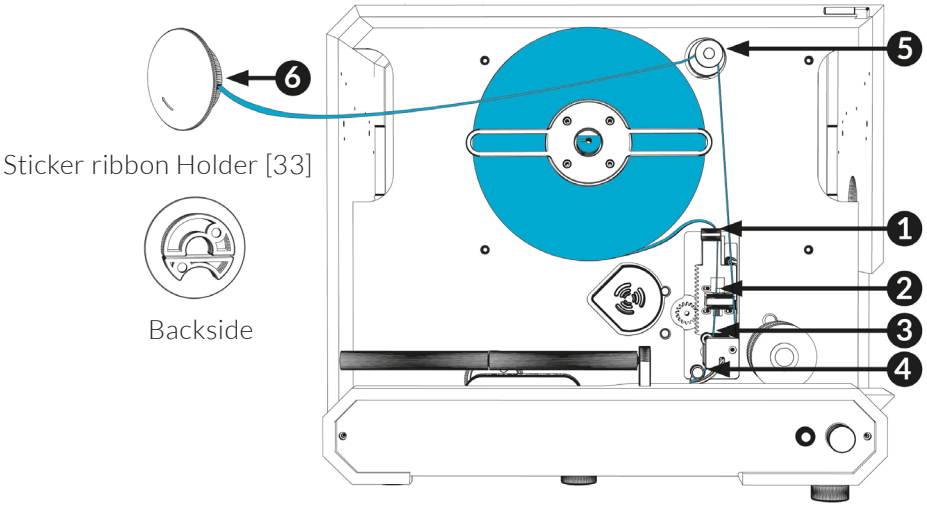
Place a new sticker roll - counterclockwise - and click the *sticker roll clamp* [32] back into place.

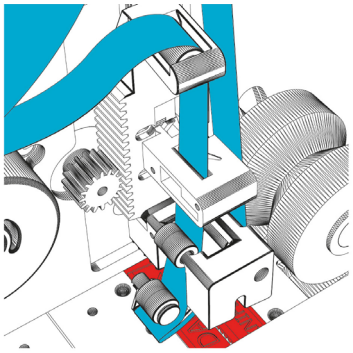
STEP 3 Guide the Sticker ribbon

Attention!

Pull the upper foam roll [10] loose if necessary to get better access to the sticker unit.

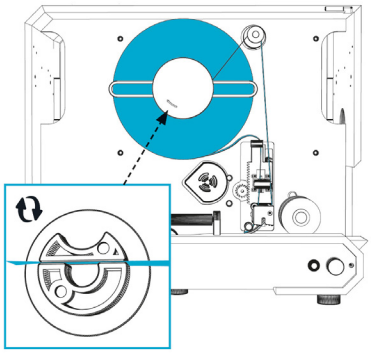
Ensure that the side with the stickers on the ribbon passes along the rollers.





Guide the Sticker ribbon through the sticker *unit* [14].

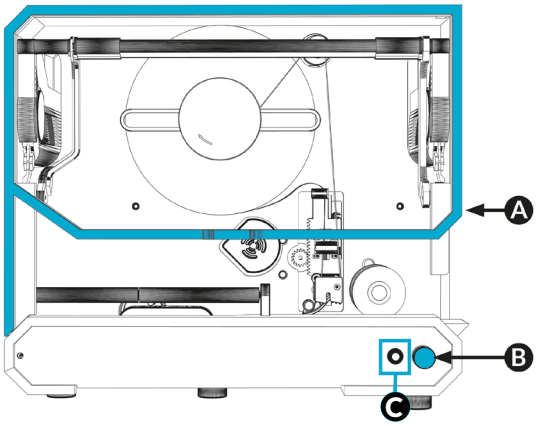
Attention! The *knife* [24] near the red part is very sharp, be very careful!

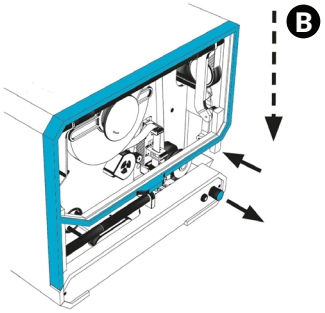


Slide the Sticker ribbon through the *Sticker ribbon holder* [33], pull it tight, and place the holder back. The ribbon will secure itself automatically.

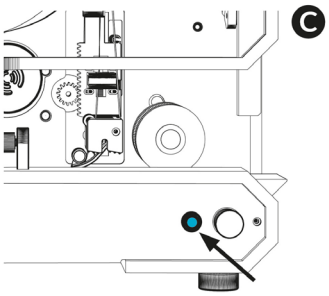
STEP 4 Close and Activate Cut&Roll

After using the emergency *stop button* [3], always reset the *Cut&Roll*. This can only be done if the **Pi Gui** inspection software is activated.





Close the *Transparent Lid* [6]. Pull it down; it will close automatically.



Press the *Reset Button* [4] to activate the *Cut&Roll*. The *Cut&Roll* is now ready for use.

Good to Know

- Incorrectly threading the Sticker ribbon can result in pouches not being cut, multiple stickers being applied simultaneously, or stickers being placed incorrectly. Follow the instructions carefully to avoid this.

7.5.2 Inspecting

After the *Pi Gui* inspection software is started (see 7.2.3), you can begin inspecting the medication pouches. This can be a loose strip fed manually or a full spool with a long strip of medication pouches (e.g., medication for different patients) placed on the right *spool arm* [8] of the *Pouch Inspector*.

STEP 1 Press the *'Calibrate' button* . on the *Pouch Inspector Touchscreen* [6]. The motors of the *Cut&Roll* will now be checked and set to the correct starting position. The sensors will also be calibrated.

Attention!

Ensure nothing is on the inspection area during the startup of the Pi Gui inspection software and during calibration.

STEP 2 Wait until the full calibration is complete and the status on the screen shows 'Idle'. The *'Calibrate' button* will become grey, indicating it is ready.

Now the *Pouch Inspector* and *Cut&Roll* are ready to inspect.

STEP 3 Take the first pouch of the strip of medication pouches and manually feed it under *Medication Pouch Guide A* [10].

STEP 4 Pull the first pouch through until it is past the *inspection area* [12].

The strip can also be pushed forward to avoid fingers appearing in the first photo. *Note:* The photo of the first pouch, the leader pouch, may be blurry if it is 'pushed through' because the strip may not glide smoothly over the inspection area.

The inspection starts immediately. The batch data will be visible on the *Pouch Inspector Touchscreen* [6].

Attention!

Since the first pouch is held by hand, the inspection of the first medication pouch will generate an alarm due to the visible finger.

This can be turned off with a setting if needed.

STEP 5 Pull the first pouch through to the *Cut&Roll* to the *Start Sensor* [9], so that the black foam roll, *Upper Foam Roll* [10], starts rotating and pulls the strip of medication pouches into the *Cut&Roll*. *Cut&Roll* processes the medication pouches as configured.

The *Pouch Inspector* and *Cut&Roll* stop once the spool is fully unwound and all medication pouches are inspected and processed. All inspection results are visible in *Pi Web*.

7.5.3 Calibrating

Calibration is only necessary if the *'Calibrate' button* is active.

STEP 1 Press the *'Calibrate' button*  on the *Pouch Inspector* screen. The motors of the *Cut&Roll* will now be checked and set to the correct starting position. The sensors will also be calibrated.

STEP 2 Wait until the full calibration is complete and the status 'Idle' appears on the screen. The *'Calibrate' button* will turn grey to indicate that calibration is complete.

Now the *Pouch Inspector* and *Cut&Roll* are ready for use.

Good to Know

- If the *'Calibrate' button* on the touchscreen cannot be clicked (and is grey), calibration is not necessary.

- Only if an improper situation has occurred, such as medication pouches being pulled out of the *Cut&Roll* by hand or the emergency *stop button* [3] being used, the *Cut&Roll* must always be returned to its initial state and recalibrated. This will be clearly indicated on the screen.

8 Processing Inspection Results with Pi Web

With our powerful *Pi Gui* inspection software, inspections are performed, and *Pi Web* clearly displays the inspection results. *Pi Web* is the central point where all information converges. Inspection results are verified, validated, and archived here.

Inspected *batches* can be processed quickly, accurately, and securely using a to-do list structure and clear tabs. Missing, excessive, damaged, and/or incorrect medication is displayed per *batch*, per patient, and per medication pouch. These alarmed medication pouches can be immediately corrected, validated, and resubmitted for inspection.

In *Pi Web*, results are immediately visible or can be reviewed and processed at a later time.

Pi Web is a web-based intranet application (Google Chrome based). This makes the app accessible via the *Pouch Inspector* touchscreen or through various computers within the secure network. Multiple users can work simultaneously with *Pi Web* from different locations.

Pi Web Offers:

- Clear and secure processing structure for inspected batches
- Processing from different workstations and at variable times
- Clear reports in Excel or PDF
- Handy medication and repair lists in Excel or PDF
- Adjustable tolerances per medication
- Configurable user rights (via one admin account)
- Automatic registration and documentation of all actions
- 'Proven Evidence' of all delivered medication pouches with a digital image stored

8.1 Installing Pi Web App on a Workstation

Pi Web app is a web-based intranet application (Google Chrome based). All workstations (computers) within the secure network with Google Chrome installed as a web browser can access the *Pi Web app* via a specific URL.

Is the Security Certificate Installed?
To navigate to this URL without error messages and to use *Pi Web* securely, a *Pi Web* security certificate must be installed on the workstation. This can only be done by a Blisterpartner certified installer. If this was not done during installation, please contact the supplier.

Security certificates for *Pi Web* can be installed on multiple workstations. This unique certificate must be requested and installed via the supplier.

Is the Pouch Inspector Powered On?
By default, *Pi Web* is controlled locally from a *Pouch Inspector*, so to use *Pi Web*, the *Pouch Inspector* must be powered on.

If a server is chosen to store the database, the *Pouch Inspector* does not need to be powered on to use *Pi Web*.

During installation, the *Pi Web* security certificate is installed on the computer to be used within the network.

Attention!

If medication pouches need to be re-inspected (which is done by the Pi Gui inspection software), the Pouch Inspector must be powered on.

STEP 1 Open the Google Chrome web browser.

STEP 2 Open a new tab and enter the URL exactly as follows in the browser's search field: **https://pi**

STEP 3 Enter the provided login credentials.

The *Pi Web Home screen* will open immediately and connect to the *Pouch Inspector*, making it ready for use.

Handy Tip: Save the *Pi Web* tab as a shortcut on the desktop, or as a favorite or bookmark.

Attention!

Use only Google Chrome. Pi Web is tested and optimized for Google Chrome. Other web browsers have not been tested by us and are strongly discouraged.

8.2 Logging In with Username and Password

To access *Pi Web*, a username and password are required.

During installation and implementation, an administrator account is created. You will receive the username and password for this account.

This administrator account has all rights and full control, can change system settings, and has access to all functions and the ability to create new user accounts.

Good to Know:

- The username is **not** case-sensitive, but the password is case-sensitive.

8.3 End-User License Agreement (EULA)

When logging in for the first time with the administrator account, a pop-up will appear with Blisterpartner's End-User License Agreement (EULA). This is a legal document that describes the terms and limitations under which the software is provided to the end-user. It includes the rights and obligations, such as the number of allowed installations and the restrictions on modifying, copying, or reselling our software.

To use our software, it is essential to accept the EULA. This provides clarity to both Blisterpartner and the user about the legal aspects of the software agreement. Non-compliance with the EULA can lead to legal consequences.

Optionally, you can agree to share Non-Patient Information (data not related to the medical history or health of patients). By consenting to this, we can improve our understanding of system performance and optimize valuable improvements (such as periodic version updates), support, and assistance. This information is also valuable for timely identifying potential issues and responding directly.

8.4 Creating Users and Assigning Rights

In the *administrator account*, users can be created with specific roles, to which specific rights can then be assigned. For example, a user may have rights to create models, approve models, and review medication pouches, without being authorized to validate a full *batch*.

An unlimited number of users can be created, each with different rights.

To create or modify a user, follow these steps:

STEP 1 Open Pi Web. Click on the 'home' button  , at the top left to open 'Settings.'

STEP 2 Click on 'Users and Roles.'

STEP 3 Click on 'Users.' Then click on the add button  at the top right to create a new user. To modify an existing user, click on the respective user.

STEP 4 Fill in the required fields: first and last name, username, and password.

STEP 5 Toggle the 'Active' switch (the switch will turn green) to activate this user.

STEP 6 Select the role to be assigned to this user.
If the desired role is not visible, it can be adjusted later.

STEP 7 Click 'Save,' and the user is immediately active.

Attention!

> *Inform the new user of their username and password, as these are not sent automatically.*
>
> *If a user loses their login credentials, only the administrator can recreate these details via the administrator account.*

8.5 Processing Inspected Batch

A '*batch*' is an output file from a packaging machine. It is a *batch* or group of medication pouches that form a unit and are processed as a whole. This can be one long strip of filled medication pouches for different patients but for the same institution.

A *batch* can be processed as a loose strip or per spool manually or fully automatically with the *Pouch Inspector Reel-to-Reel* or in combination with *Pi Transport* or *Cut&Roll*.

After the *batch* is inspected by the *Pouch Inspector* and the results are processed in *Pi Web*, the physical medication pouches of this *batch* are inspected and ready for the next step in the inspection process.

8.5.1 To-do Structure

In *Pi Web*, inspection results are processed per *batch* using a to-do structure with to-do tabs for each task to be handled. Each *batch* goes through different phases. Each to-do tab represents a phase with corresponding tasks or actions to accurately process the *batch*.

When opening *Pi Web*, the *Pi Web* home screen (home) is active. This is the first to-do screen, where all *batch*es inspected by the *Pouch Inspector* and pending processing appear. The handling process proceeds through the to-do tabs from left to right.

Initially, no other phases or to-do tabs are visible. These only appear once the first *batch* enters the next phase.

Attention!

> *Only when all alarms in a batch have been handled will the status of the batch change, and the batch will automatically move to the next to-do tab.*

The different phases a batch can go through are as follows:

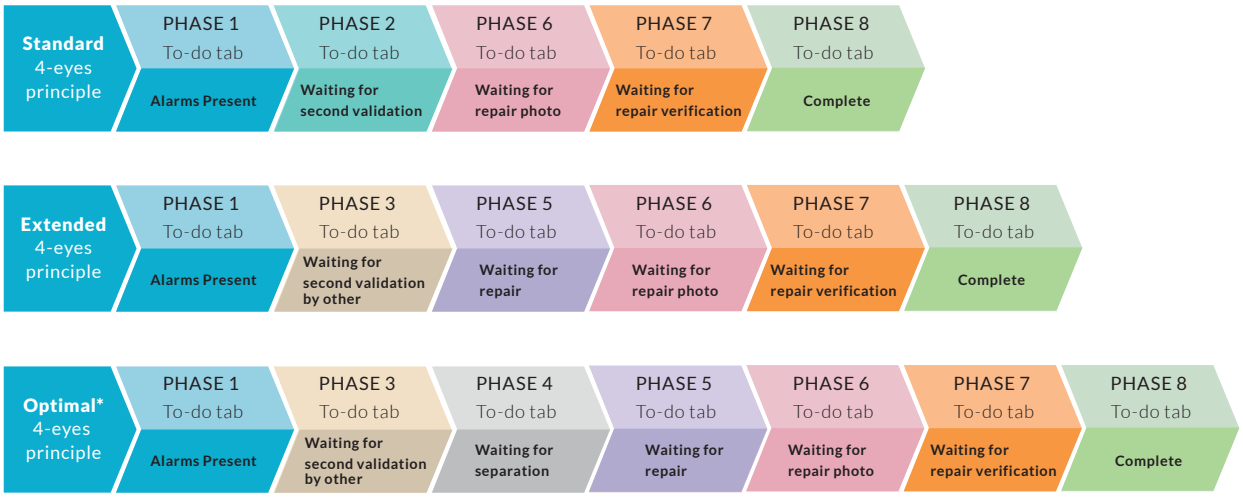
Phase 1 – To-do Tab: **Alarms Present**
Phase 2 – To-do Tab: **Waiting for second validation**
Phase 3 – To-do Tab: **Waiting for second validation by other**
Phase 4 – To-do Tab: **Waiting for separation**
Phase 5 – To-do Tab: **Waiting for repair**
Phase 6 – To-do Tab: **Waiting for repair photo**
Phase 7 – To-do Tab: **Waiting for repair verification**
Phase 8 – To-do Tab: **Complete**

Good to Know

- Since each organization (pharmacy, institution, hospital) has its own *workflow*, it is possible to adjust the to-do structure to that specific way of working. Certain phases can be enabled or disabled depending on the desired *workflow*.

In this manual, the standard basic options are displayed. Certain phases in your configuration may or may not be visible.

Optional Workflows (To-do Structures):



*Optimal 4-eyes principle is for large production centers with additional machines (*Pouch Inspector Reel-to-Reel*).

Image 2 - Optional Pi Web To-do Structures

8.5.2 Batch Status

Processing a *batch* changes its status, and the *batch* automatically moves to the next to-do tab (entering the next phase). Through the *batch* tiles and the different to-do tabs per phase, you can see where the *batch* is in the process.

The handling of an inspected *batch* proceeds through the to-do tabs from left to right. Only when all alarms in a *batch* are handled will the status of the *batch* change and move to the next to-do tab.

If a *batch* has no alarmed medication pouches, it depends on the personal configuration under which to-do tab the *batch* will appear.

8.5.3 Batch Tiles

When opening *Pi Web*, the home screen (Home) and the first to-do screen are activated immediately. Under the to-do tab 'Alarms Present,' an overview block, the '*batch* tile,' is visible for each inspected *batch*. This block contains concise information about the location, date, and time of the inspection, the number of patients, medication pouches with or without alarms, and the number of repairs performed.

Good to Know

- *Batch* tiles are only visible if at least one medication pouch of the *batch* has been inspected. Otherwise, no *batch* tile is shown.

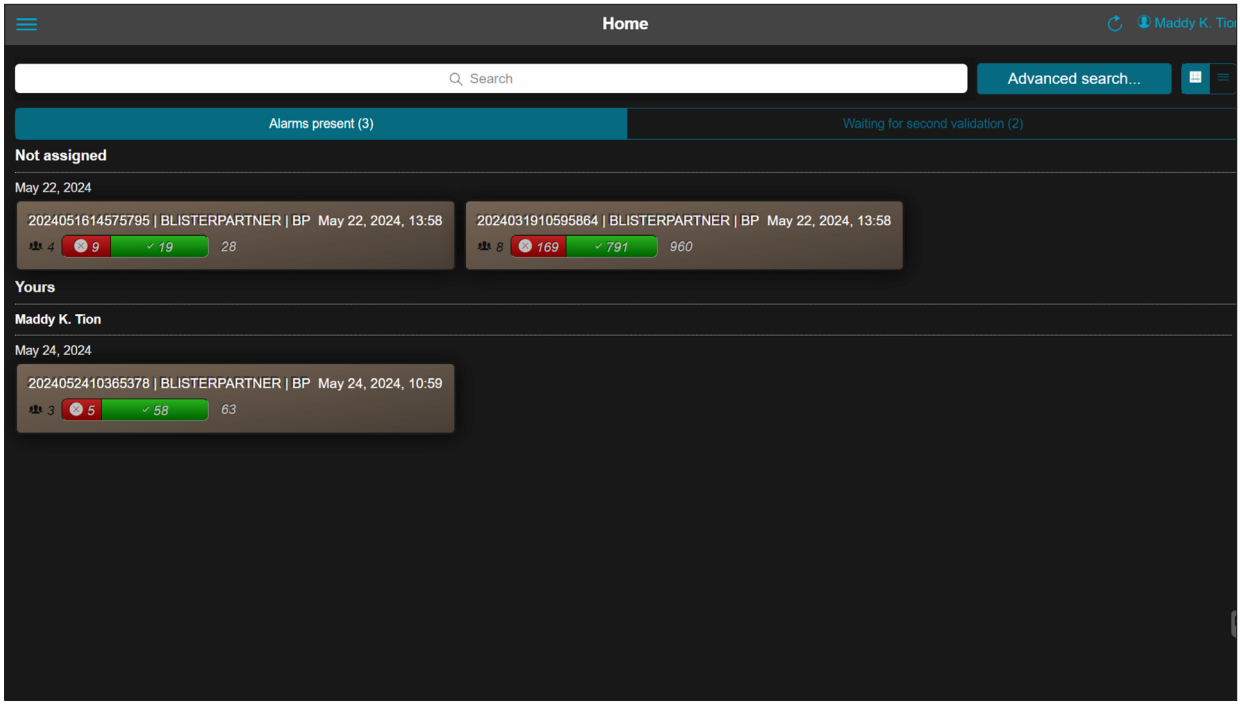


Image 3 - Batch Tiles on the Pi Web Home Screen (Home)

Batch tiles are divided into three groups:

First Group: '**Yours**'
Selected based on your *batches* (*batches* you opened from the beginning).

Second Group: '**Not assigned**'
No one has opened the *batch* yet.

Third Group: '**By other**'
Batches opened and being handled by other users.

Batches can thus be assigned to specific employees responsible for one or more phases in the processing

Attention!

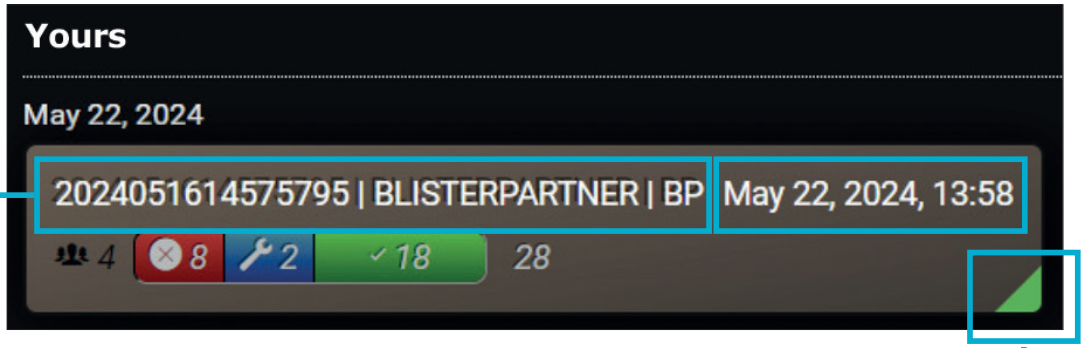
> *Although a batch is placed under 'Being Handled by You,' it is possible that someone else opens and processes this batch. However, this batch will always remain visible under 'Being Handled by You' batches.*

After logging into *Pi Web* and opening the first to-do screen, you will see under the heading '**Being Handled by You**' the *batch tiles* that you need to handle.

When a *batch* is processed, alarms are checked, and any repairs are marked, the *batch tile* changes status. Only when all alarms in a *batch* are handled will the status of the *batch* change and move to the next *to-do tab*.

Depending on the information released by the packaging machine and how *Pi Web* is configured, a *batch* tile displays the following information. This display is customizable and can be adjusted to the organization's *workflow*.

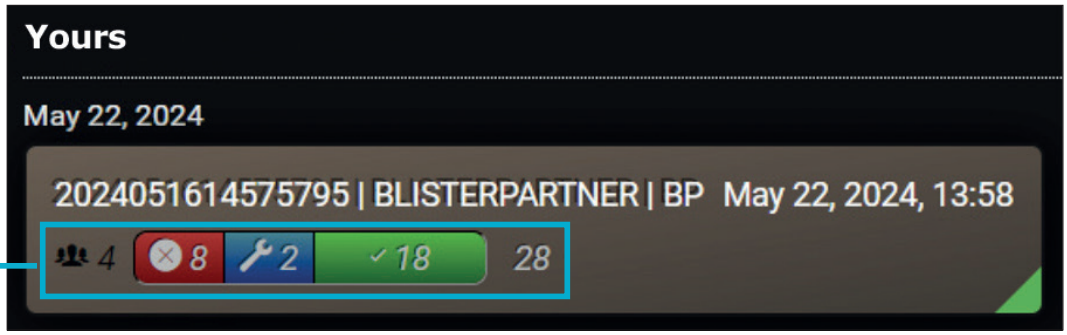
Image 4 - Batch tile



Batch Name/ID | Hospital (or institution) | Location | Sublocation or Department When the *RFID system* is used, a crate number (e.g., #3) is also displayed.

Date and Time of Inspection: May 22, 2024, 13:58

Batch Attribute: 'Being Handled by You'



Number of Patients in this *Batch*: 4

Number of Medication Pouches with an Alarm: 8 (not visible if there are no alarms)

Number of Medication Pouches with a Repair: 2 (not visible if there are no repairs)

Number of Medication Pouches Alarm-Free: 18 (not visible if there are no alarm-free pouches)

Total Number of Medication Pouches: 28

8.6 To-do Tab: *Alarms Present* | Phase 1

When *Pi Web* is opened, the home screen (home) is immediately the first to-do screen. Under the '**Alarms Present**' tab, there is a *batch* tile for each inspected *batch*. This tile provides concise information about the location, date and time of inspection, number of patients, number of medication pouches with or without alarms, and the number of repairs performed.

Each *batch* receives the initial status '**Alarms Present**' if one or more alarmed medication pouches are present in that *batch*.

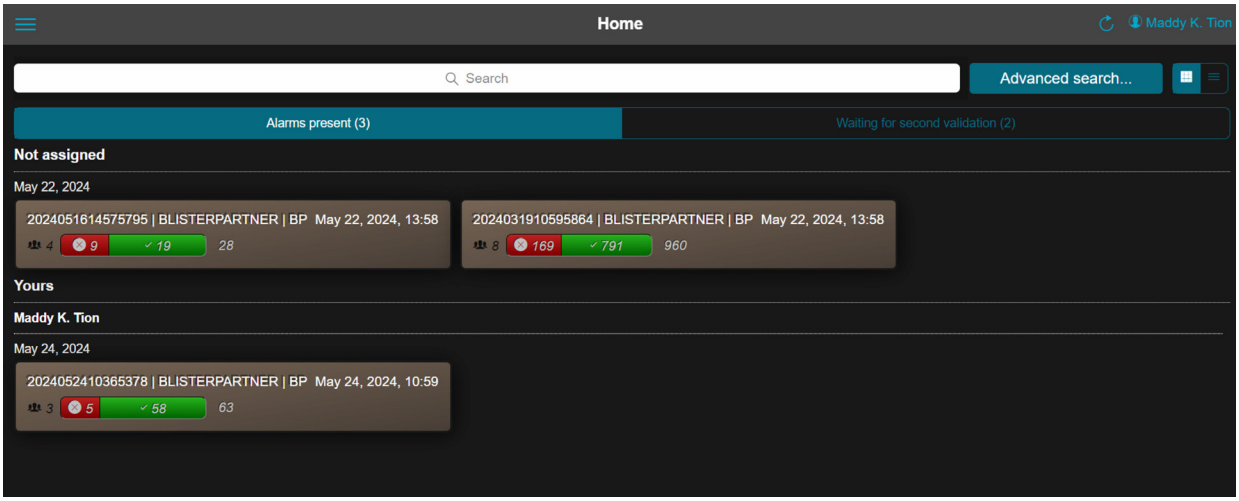


Image 5 - Batch tiles on the Pi Web Home Screen (Home)

Clicking on the batch tile opens the *batch* screen with detailed information about that specific *batch*.

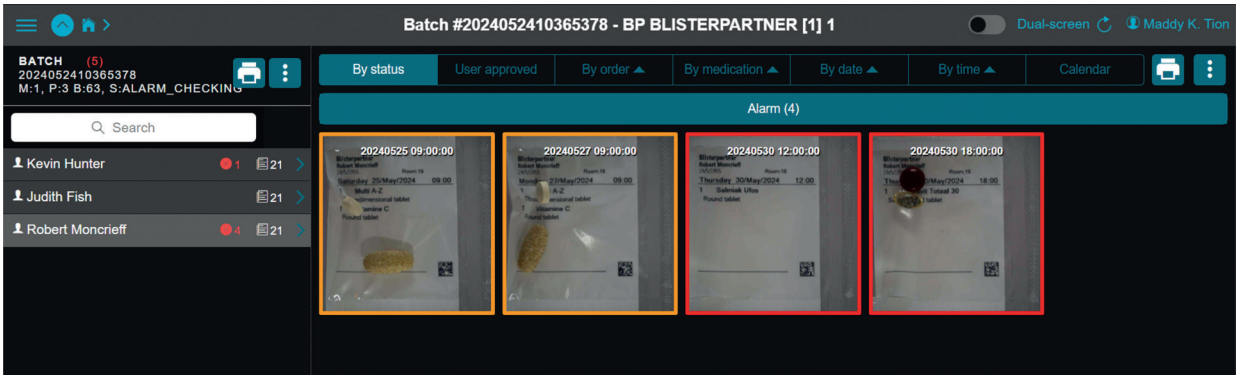


Image 6 - Detailed batch Information

On the left side is the patient list, which clearly shows the patient's name, the number of alarms, and the total number of medication pouches for each patient.

This patient list is updated automatically and continuously. As alarms are processed, the number of alarms here will also decrease.

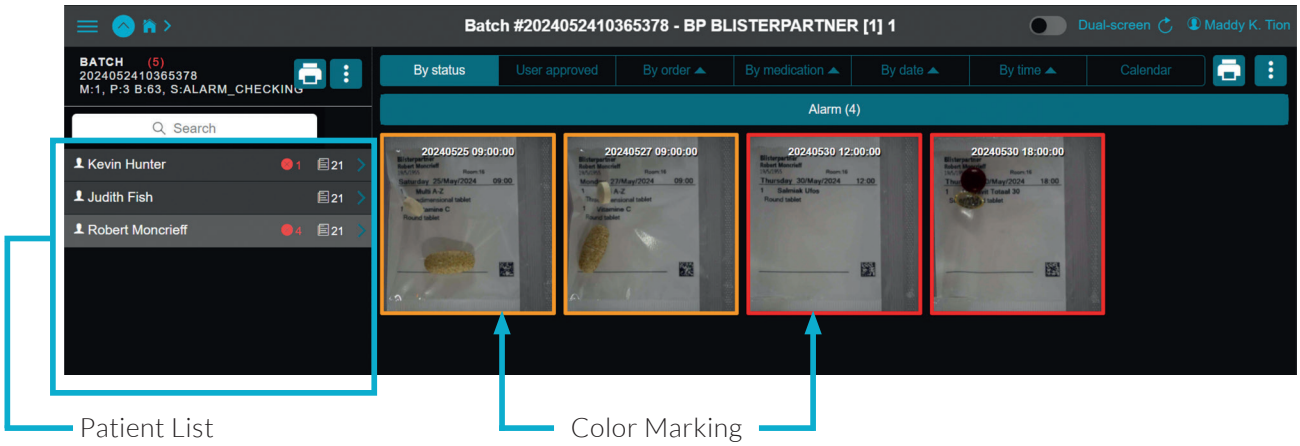
Attention!

> *The batch status only changes after all alarms in a batch are processed, and only then does it move to the next phase and tab.*

8.6.1 Steps to Process a Batch in Phase 1

STEP 1 Open *Pi Web*. The home screen (home) is also the first *to-do screen*. In the left column, a *batch tile* is visible for each inspected *batch*.
To process a *batch*, all alarms (all alarmed medication pouches) per patient must be processed. By default, the first patient at the top of the patient list is selected.

Image 7 - Detailed batch information



STEP 2 Click on a patient name in the patient list – select the one where an alarm is visible (red icon with a number).

STEP 3 Select the to-do tab 'By Status.'
This tab shows only the medication pouches of this patient that were marked with an alarm during the inspection. Action is required to process these alarms.

The alarm is displayed with a colored square, where the color varies from orange to red, with various shades of orange in between (towards red).

A **red** square = **high risk**
This means that an object was found too many or too few compared to the expected quantity, or the pouch could not be assessed due to certain circumstances.

An **orange** (shaded) square = **medium risk**
This means that a situation occurs such as: fragments found, one or more objects not matched, or an extra transparent object.

STEP 4 Click on the first medication pouch with an alarm. The '*Medication Pouch Screen*' opens. Here you can see in detail why this medication pouch has an alarm status.

There can be various causes. In this case, the pouch has received an orange square, which means that one or more objects do not match the expected models.

On the left is a photo of the medication pouch with the inspected objects. On the right is the 'Alarm status column.' This column shows the cause of the alarm.

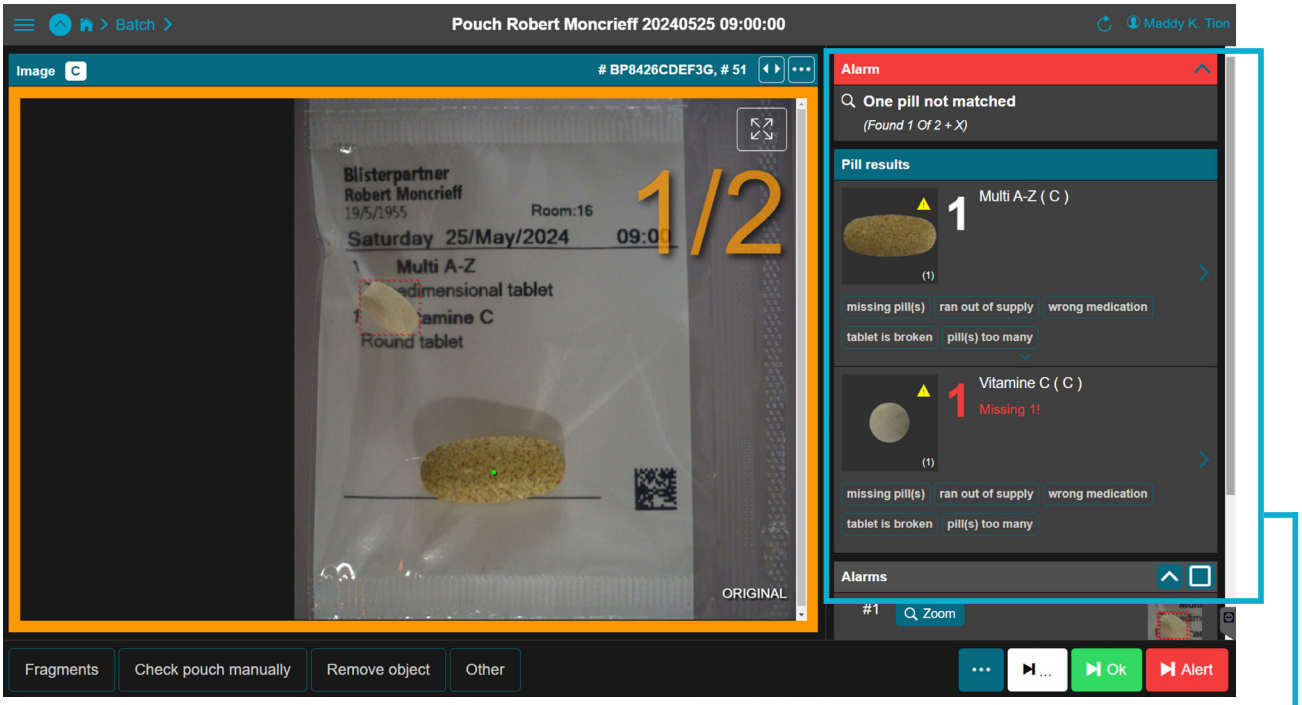


Image 8 - Medication Pouch Screen

Alarm status column

In the photo, an object (pill) marked with a ***green dot*** matches the expected models for this pouch.

The ***red square with a dotted line*** around the other object indicates that this object does not match the expected models for this pouch.

The ***notation 1/2*** means that 1 out of the 2 objects was found.

The *alarm status* column clearly shows the details of the alarm. It indicates what was found, what is missing and should be present, and which object does not belong.

STEP 5 Evaluate, decide, and assign an action – Do this based on internal agreements and procedures. Determine the correct action to be taken to resolve this alarm.

Attention!

> *Only have 'Step 5' performed by a responsible person with the appropriate knowledge and rights within the organization*

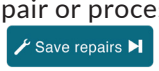
There are **3 possible actions**:

ACTION 1 Assign Repairs

This is done via the '*Medication Pouch Screen.*'

Choose the appropriate repair – for the medication pouch and/ or the pill.

Make a note - support your choice with an explanation so that another staff member who performs the repair understands the intention clearly.

Confirm the repair or processing order - by clicking on the '*Save Repairs*' button 

in the button bar at the bottom. The next pouch with an alarm will be shown immediately.

A. **Per Object (Pill)** Various repair options can be indicated in the 'Alarm Status' column.

Standard repairs for medication are:

- **Missing pill(s)** - Add missing pill(s)
- **Wrong medication** - Replace wrong pill
- **Tablet is broken** - Replace broken pill(s)
- **Pill(s) too many** - Remove excess pill(s)
- **Ran out of supply** - No stock available

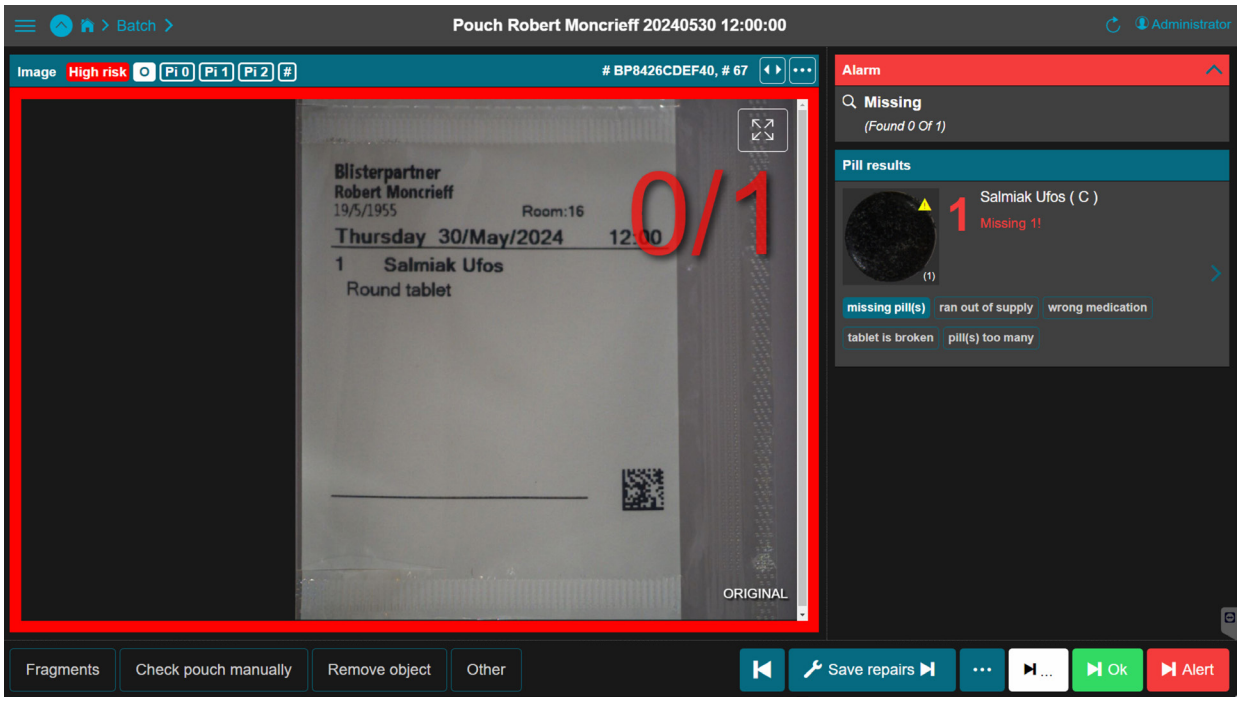


Image 9 - Medication Pouch Screen - with the repair option 'missing pill(s)'

B. **Per Medication Pouch** - Various repair options can be indicated under the photo.

Standard repairs for medication pouches are:

- **Fragments** - Fragments in the pouch
- **Check pouch manually** - Check manually
- **Remove object** - Remove object (such as pieces of aluminum foil)
- **Other** - Other

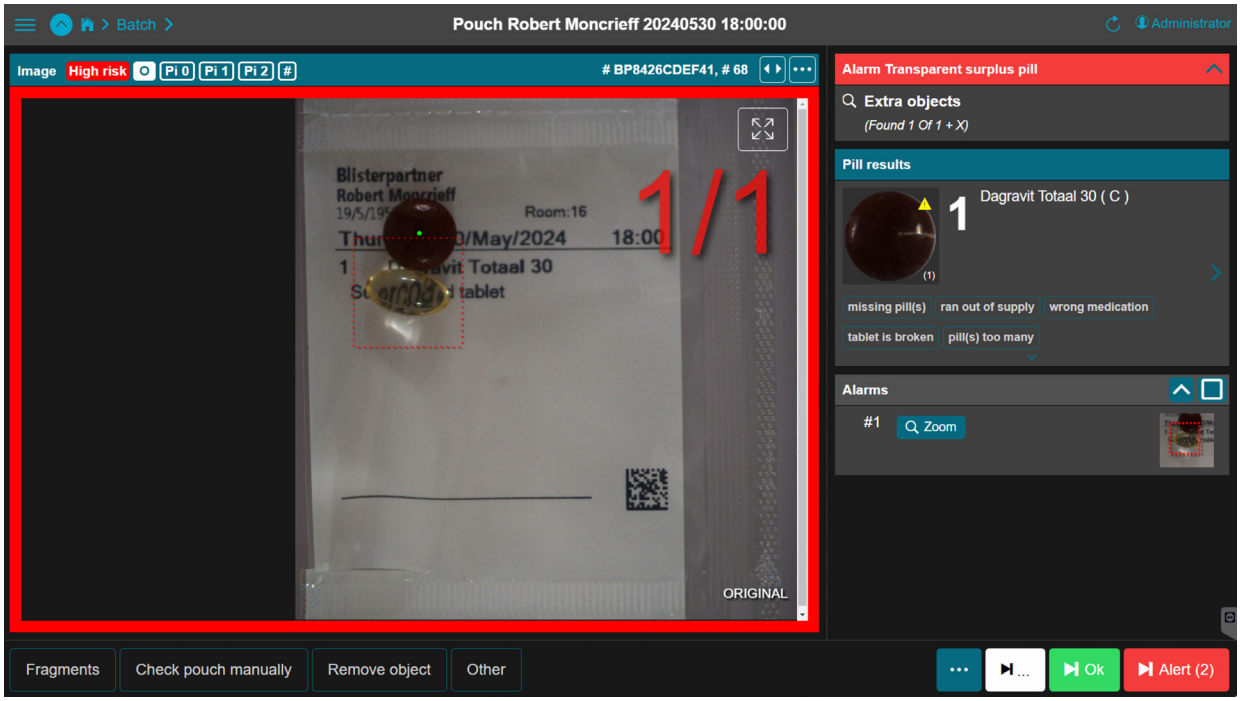


Image 10 - Medication Pouch Screen - with the repair option 'Remove object'

Good to Know

Names are configurable and can be adjusted per desired *workflow*. Therefore, other repair names might appear in *Pi Web* than those shown here.

Besides the names, the subsequent actions are also adjustable, such as a note field option (mandatory or not), barcode field, and quantity to be adjusted. Read more about this in *9.6.3 Repair Types*.

Multiple repairs can be recorded per medication pouch.

ACTION 2 Approve

This is done via the '*Medication Pouch Screen*.'

Evaluate and decide based on internal agreements and procedures whether this medication pouch can be approved.

Confirm the approval – Click the *OK button* OK in the button bar at the bottom right. The alarm is removed from the pouch, and a green check mark appears on the pouch (indicating manual approval). No further action is needed for this pouch.

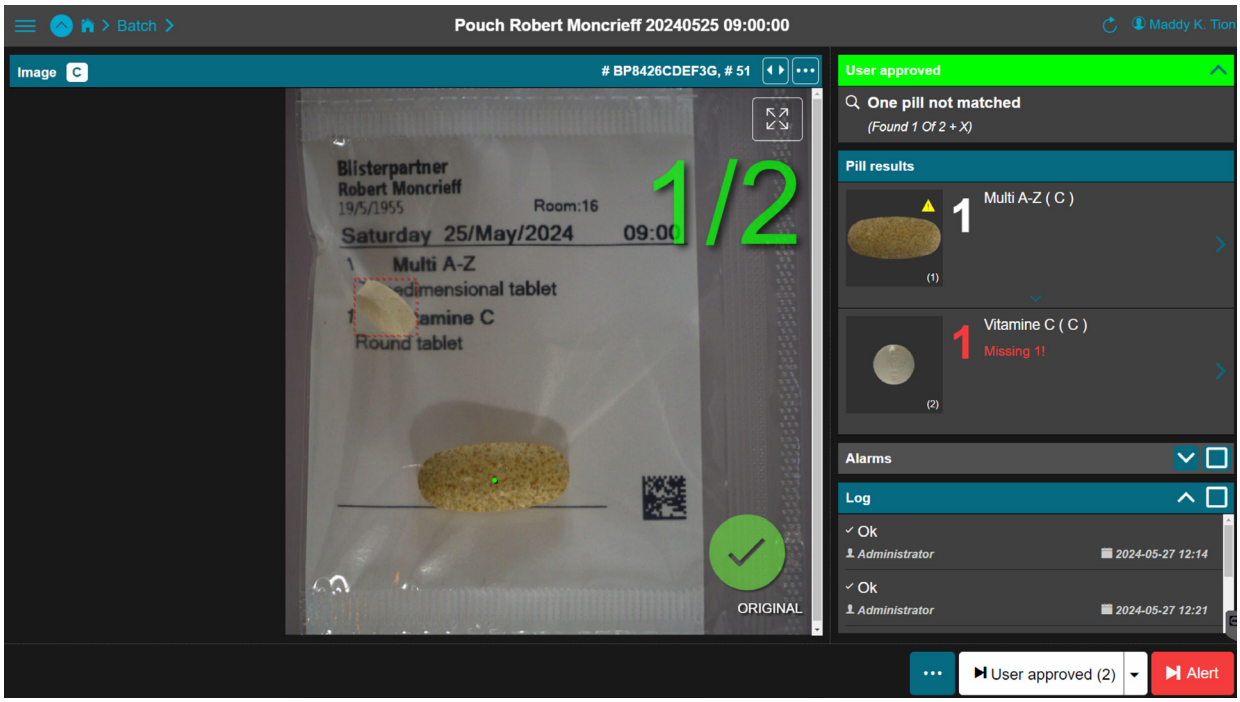


Image 11 - Medication Pouch Screen - with confirmed approval

ACTION 3 Add New Models

Adding new models to the *Pouch Inspector database*, where no match exists, is a highly specialized task. Only a responsible person with the appropriate knowledge and rights within the organization should perform this.

Adding a new model – Click on the relevant medication name in the right column. The medication screen will open. In this screen, models can be selected, model types can be changed, tolerances can be set, and models can be activated, deactivated, released, or blocked.

Attention!

> *Only have 'Action 3' performed by a responsible person with the appropriate knowledge and rights within the organization.*

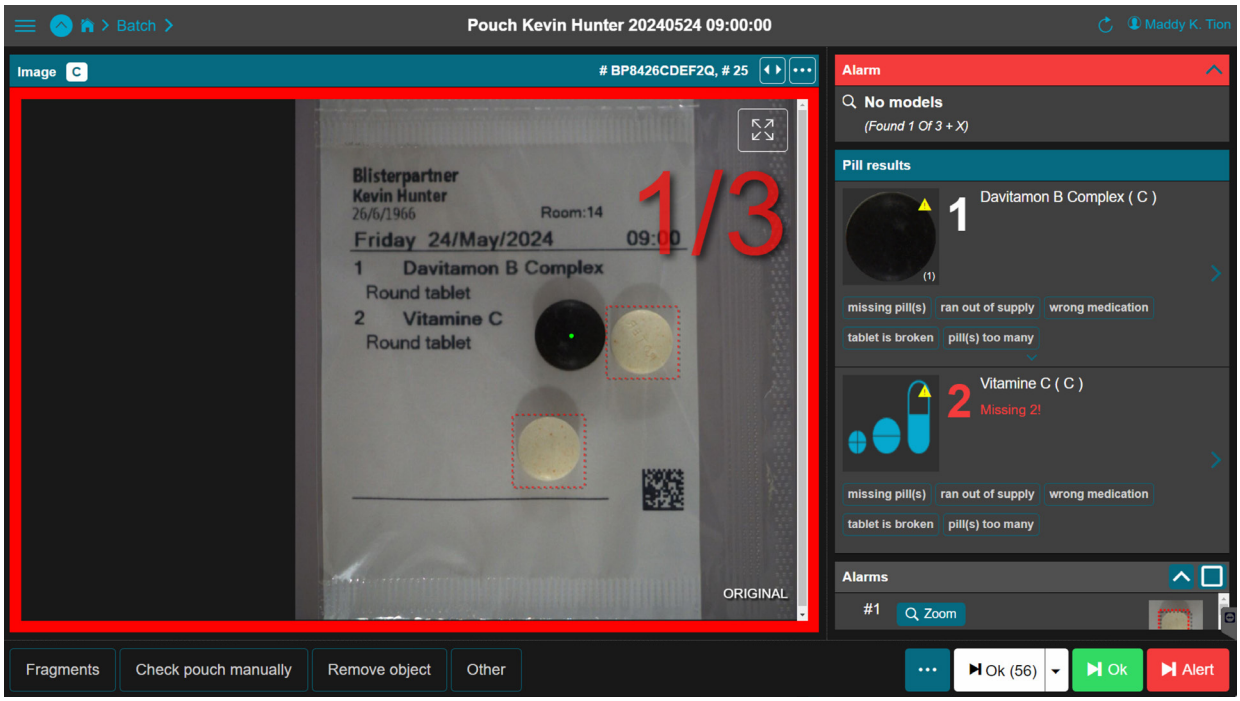


Image 12 - Medication Pouch Screen - with Missing Models

Image 13 - Medication Screen - with Options for the Missing Model

Select a model from one of the tabs under *'Available Models'*.
There are 4 tabs:

- **Probable -** Most likely models
- **Recent** - Recently found models
- **By elongation** - For elongated models
- **Search** - Searches further back in the database for models

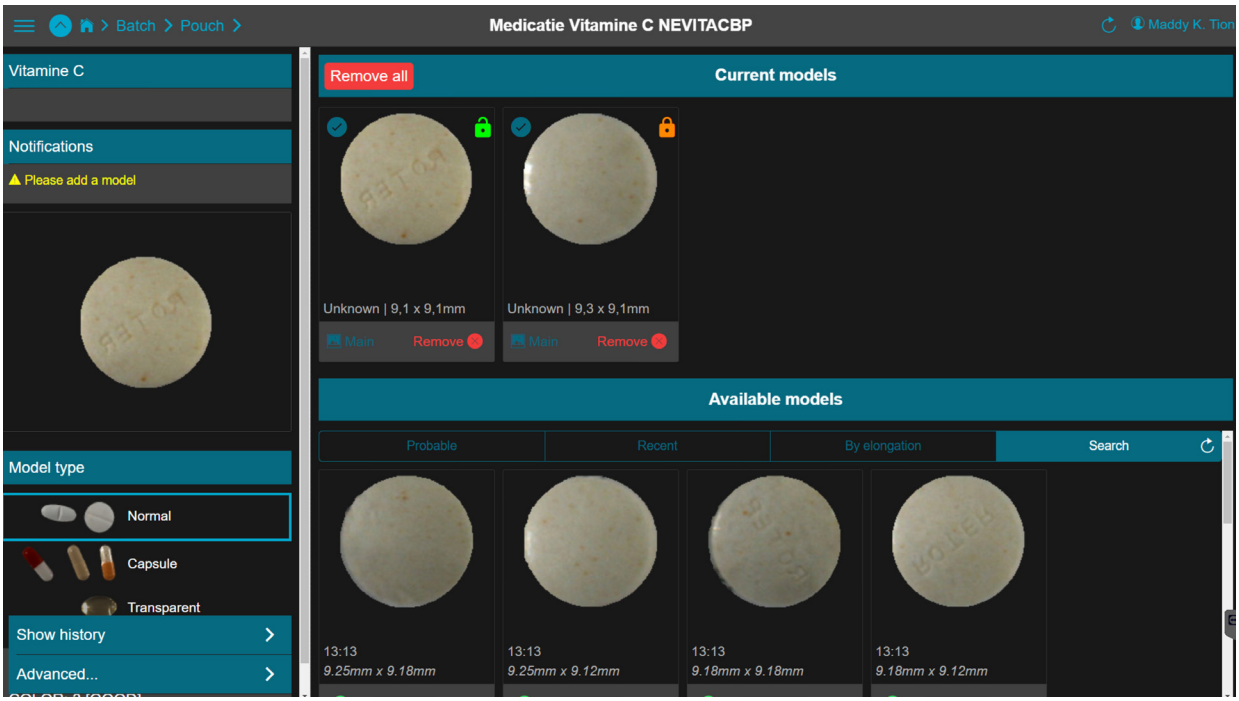


Image 14 - Medication Screen - with Options for the Missing Model

The *Pouch Inspector* automatically suggests new models based on medication pouches where the relevant medication should be present.

Manually adding a model via the *Pi Gui* inspection software is possible, but not recommended.

STEP 1 Click on the suggested model that matches the medication. Pay attention to the quality and dimensions of the model. By clicking, the model is immediately added to the '*Current Models*' column.

It is important to note that models of other medications may also appear as suggestions. This happens, for example, when a pouch with two pills is inspected and both pills lack a model. The Pouch Inspector cannot determine which model belongs to which medication and therefore offers both as reference models. As more models are added, the suggestions become more specific and accurate.

STEP 2 After the model is added, it must be 'released' by an authorized user. Click on the orange lock to release the model; the lock will turn green. From that moment, the model is included in the inspection.

STEP 3 Return to the *batch* screen.

Attention!

Suggested medication may differ from the actual medication. Therefore, only a qualified employee with the appropriate rights should evaluate, select, and add new models.

After all alarmed medication pouches have been processed and no alarms are present in this *batch*, a prompt will automatically appear to return to the *batch screen*.

The processed *batches* have now moved to the next phase and are automatically moved to the *next to-do tab*.

After adding a new model, for safety, the medication pouch, patient, or entire *batch* can be re-inspected (see *8.6.2 Reinspection After Adding a Model*).

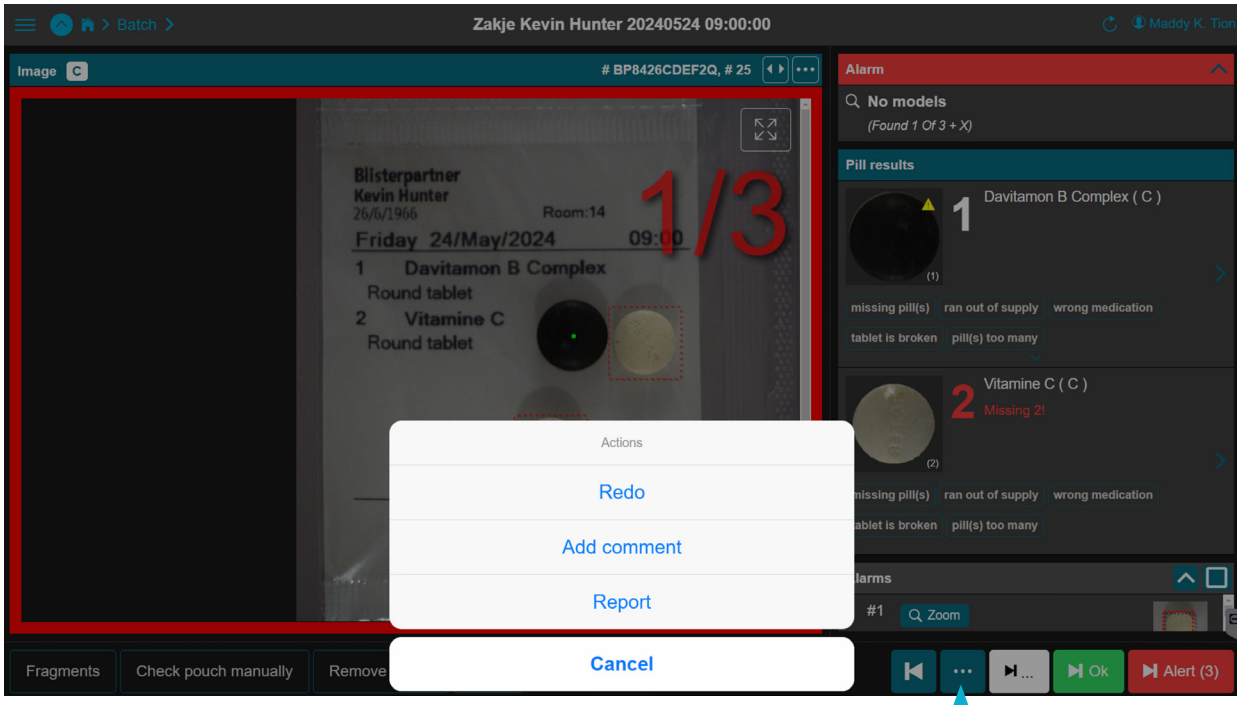
8.6.2 Reinspection After Adding a Model

After adding a new model to the *Pouch Inspector* database, the respective medication pouch, patient, or entire *batch* containing the missing model can be re-inspected. This is called reinspection. The newly added model will then be included in the inspection.

STEP 1 Go to the respective medication pouch screen and click the blue *More Options button* ··· in the button bar at the bottom right. Select 'Redo' to re-inspect the medication pouch to which the model has been added.

Attention!

For reinspection, the Pi Gui inspection software must be running.



15 - Medication Pouch Screen - Redo

More Options button

STEP 2 Now address all alarms for this medication pouch.
A model is now visible.

Evaluate, decide, and assign an action (approve or repair, see actions 1 and 2 at 8.6.1). Do this based on internal agreements and procedures. Determine the correct action to resolve the alarm.

In this example, all three pills are approved.

Attention!

> *Only have 'Step 2' performed by a responsible person with the appropriate knowledge and rights within the organization.*

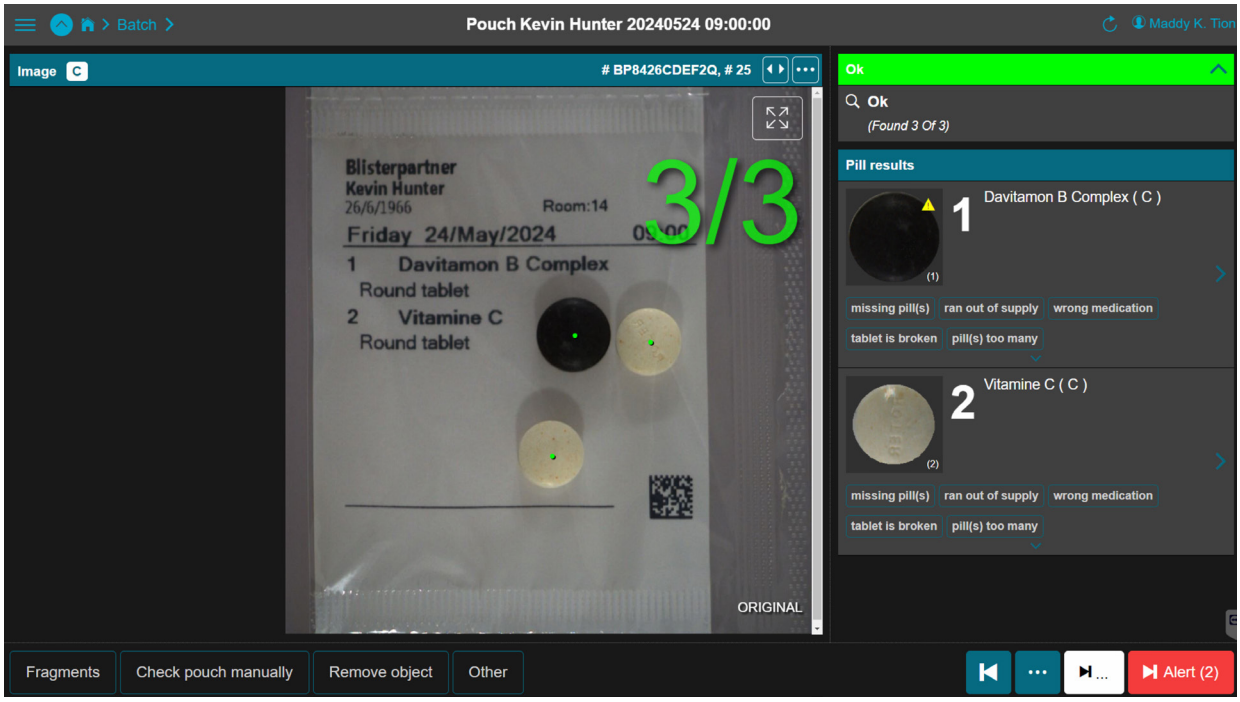


Image 16 - Medication Pouch Screen - All Approved

No action is assigned to the medication pouch in Image 16. All models are matched. In this case, click the Next *Alarm button* Alert (..). The next pouch with an alarm will be displayed immediately until all alarmed pouches from this *batch* are handled.

As a result, the *batch* status has changed and is now in the next phase. It will automatically move to the next *to-do tab*. If repairs need to be performed, the *to-do tab* will be 'Waiting for Repair.'

The actual repair now needs to take place. This can potentially be performed by another employee or department responsible for this part of the process. This employee will carry out the actual physical repairs listed on the *to-do tab* 'Waiting for Repair'.

STEP 3 Return to the *batch screen*.
After all alarmed medication pouches have been processed and no alarms are present in this *batch*, a prompt will automatically appear to return to the *batch screen*.

The processed *batch*es have now moved to the next phase and are automatically moved to the next *to-do tab*.

8.7 To-do Tab: Waiting for *Second Validation* | Phase 2

The *second validation* is an additional visual, human assessment. In this phase, an employee with the appropriate knowledge and user rights performs an extra check on the *batch*es processed in phase 1. Visually, they assess whether there are noticeable irregularities, if manual approvals are correct, and if repairs have been properly assigned. This is done before the repairs are carried out.

The *second validation* screen provides a clear overview of all medication pouches in a *batch*, categorized by patient, consecutive days, and intake times. This makes it easy to recognize patterns in medication pouches and identify irregularities. It is also easy to see if there are pouches without print or with foreign objects, such as a hair, that were not noticed during the inspection.

Another noticeable irregularity that can indicate a human error is a long consecutive series of manually approved medication pouches. This could indicate a wrongly filled canister and an employee who manually approved these alarms. If this situation occurs, the protocol might be to conduct an extra check on this series of pouches.

After this assessment (the second validation), all medication pouches of this *batch* are validated in the second validation screen, and the *batch* moves on to the next phase.

8.7.1 Steps to Process a Batch in Phase 2

STEP 1 Go to the *batch screen* and click on the *Validation button* ✓ VALIDATE. The *second validation* screen will open.

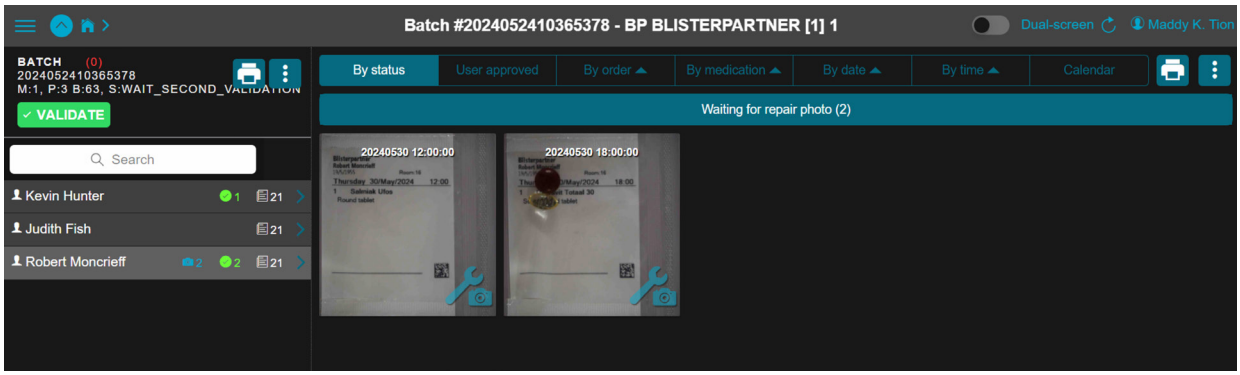


Image 17 - Batch Screen - with a Batch Pending Validation

STEP 2 This *second validation* screen shows an overview of the medication pouches for the first patient in this *batch* and uses icons to indicate whether repairs have been assigned or if pouches have been manually approved. Visually assess for any noticeable irregularities.

Scroll through the medication pouches, examine them carefully, and look for irregularities such as:

- Illogical Sequences (e.g., the patient receives the same medication for 6 days, and 1 day is missing 1 pill; does this make sense?)
- Pouches without Print
- Pouches with Foreign Objects (e.g., hairs or similar items)
- Long Consecutive Series of Manually Approved Pouches (this may indicate a wrongly filled canister, see 8.5.7)

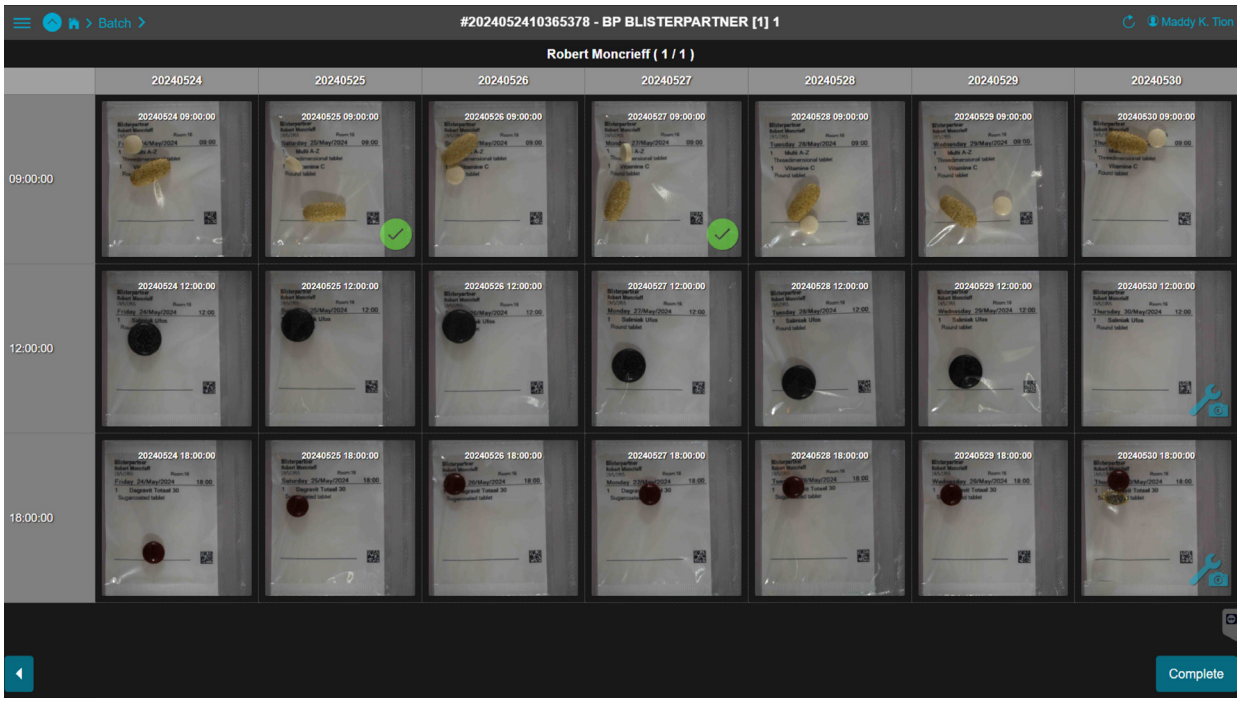


Image 18 - Second Validation Screen - with Overview of Medication Pouches in batch

STEP 3 **Evaluation: Everything is Good** (Otherwise, proceed to Step 4)

If all medication pouches for this patient are in order and there are no noticeable issues or irregularities: Click the complete button Complete at the bottom right.

The second validation for this patient's medication pouches is now complete. The medication pouches for the next patient in the same *batch* will immediately appear.

Attention!

> *The complete button only becomes visible and active once all medication pouches for the patient have been viewed.*

STEP 4 **Evaluation: Some Pouches are Not Approved**

If any medication pouches for this patient have noticeable irregularities, add an alarm to the respective pouches.

Click on the specific pouch, it will be shown enlarged. Click on Alarm. This pouch, and therefore this *batch*, will automatically return to phase 1 '*Alarms Present*'.

STEP 5 After all Patients in this *batch* have been visually assessed and there are no more new medication pouches from the next patient in the same *batch*: The second validation of this *batch* is complete. The *batch screen* will automatically open, and all patient names will now be green.

Batches that have received a new alarm return to the first phase. *Batches* with no new alarms proceed to the next phase.

8.8 To-do Tab: Waiting for *Second Validation* by Other | Phase 3

This tab shows *batches* assigned to a user in phase 1 and have completed phase 1.

For these *batches*, it is determined (depending on the desired *workflow*) that the second validation must be performed by a different user than the one to whom the *batch* was assigned. Therefore, these *batches* are not visible under the *to-do tab*: Waiting for Second Validation but only appear under the *to-do tab*: *Waiting for Second Validation by Other*.

Good to Know

- Since each organization (pharmacy, institution, hospital) has its own *workflow*, it is possible to adjust the to-do structure to fit that specific way of working. Certain phases can be enabled or disabled depending on the desired *workflow*.

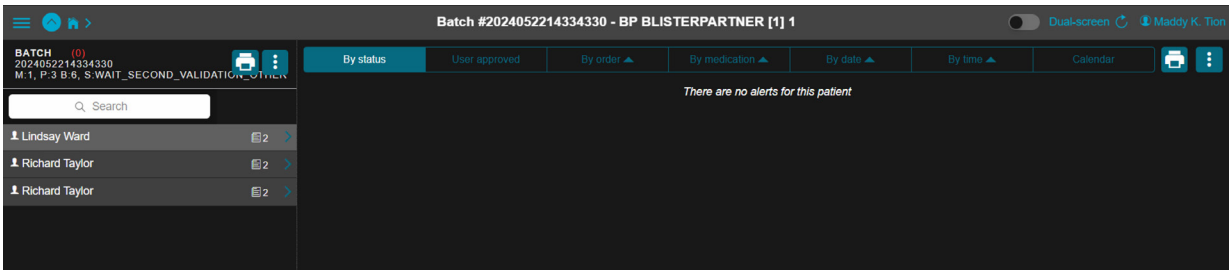


Image 19 - Batch Screen - The user from Phase 1 cannot validate, the validate button does not appear

8.8.1 Steps to Process a Batch in Phase 3

In phase 3, the same steps must be followed as in phase 2.

However, the same user cannot perform these steps. Therefore, the *Validate button* ✓ VALIDATE only becomes visible to the user authorized to perform the second validation.

Refer to *8.7.1 for the steps to process a batch in phase 2*.

8.9 To-do Tab: *Waiting for Separation* | Phase 4

If the *RFID system* is used in combination with 'Workflow - three' (a setup of a *Pouch Inspector Reel-to-Reel* along with a *Pouch Inspector* with *Cut&Roll*), then the *to-do tab*: *Waiting for Separation* becomes active.

This tab shows *batches* that have first been processed by a *Pouch Inspector Reel-to-Reel* and have gone through phases 1, and optionally 2 and 3. The medication pouches of this *batch* (still on the spool) are now ready to be separated by the *Pouch Inspector* with *Cut&Roll*.

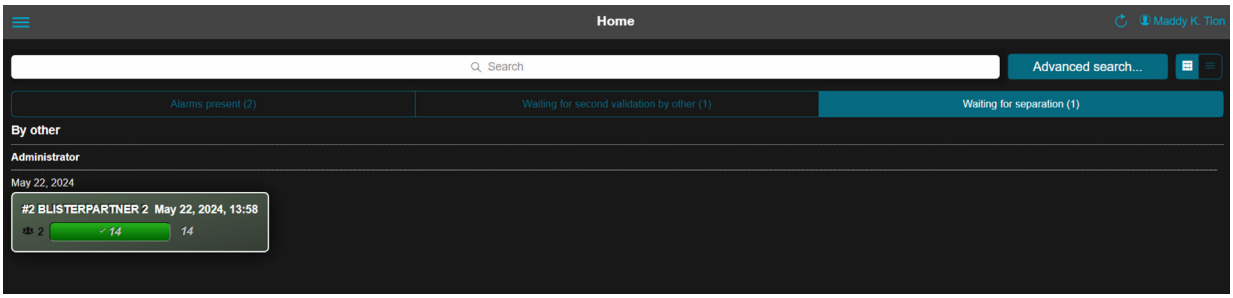


Image 20 - Home Screen - with Active To-do Tab: Waiting for Separation.

8.9.1 Steps to Process a Batch in Phase 4

Batches that appear on this *to-do tab* indicate that the spool with medication pouches is ready to be physically processed by the *Pouch Inspector* with *Cut&Roll*.

STEP 1 Place the spool with the respective *batch* shown under the *to-do tab*: *Waiting for Separation*, on the arm of the *Pouch Inspector* set up with a *Cut&Roll*.

STEP 2 Take the first pouch from the strip of medication pouches and manually feed it under *Medication Pouch Guide A* [10] and pull it through past the *inspection area* [12].

The *Pouch Inspector* will automatically switch to '*Separation mode*'.

STEP 3 Pull the first pouch through into the *Cut&Roll* to the *Start Sensor* [9], so that the black foam roll, the Upper Foam Roll [10], begins to rotate and feeds the strip of medication pouches into the *Cut&Roll*.

The *Cut&Roll* processes the medication pouches of this batch and stops once the spool is completely unwound and all medication pouches are processed.

The patient rolls are separated by the *Cut&Roll* into:

- Left Crate: Fully approved patient rolls
- Right Crate: Patient rolls that require repair in one or more medication pouches

Once all patient rolls are separated by the *Cut&Roll*, the *batch* will move to the next phase and appear on the corresponding *to-do tab*.

Attention!

> *No manual entries are required in Pi Web for phase 4.*

8.10 To-do Tab: *Waiting for Repair* | Phase 5

This *to-do tab* shows all *batches* containing one or more medication pouches that need physical repair. In this phase, an employee carries out the actual repair.

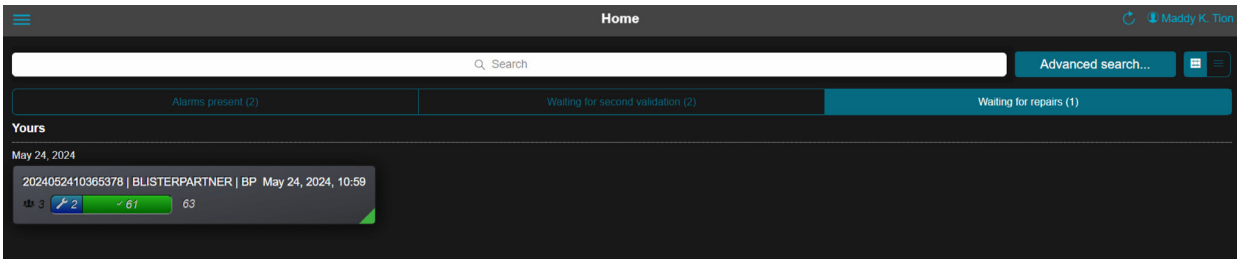


Image 21 - Home Screen - with Active To-do tab: Waiting for Repair, showing one batch

The medication pouches that need to be repaired can be present as a loose strip, as a strip on a spool, or already as patient rolls physically in a bin. They do not have to be complete *batches*. This depends on the configuration being used (see chapter 4).

8.10.1 Steps to Process a Batch in Phase 5

STEP 1 Click on the batch tile shown in the left column on the *to-do tab*: *Waiting for Repair.*

The *batch screen* will open. To display the medication pouches that need to be repaired per patient, sort by 'By Status.'

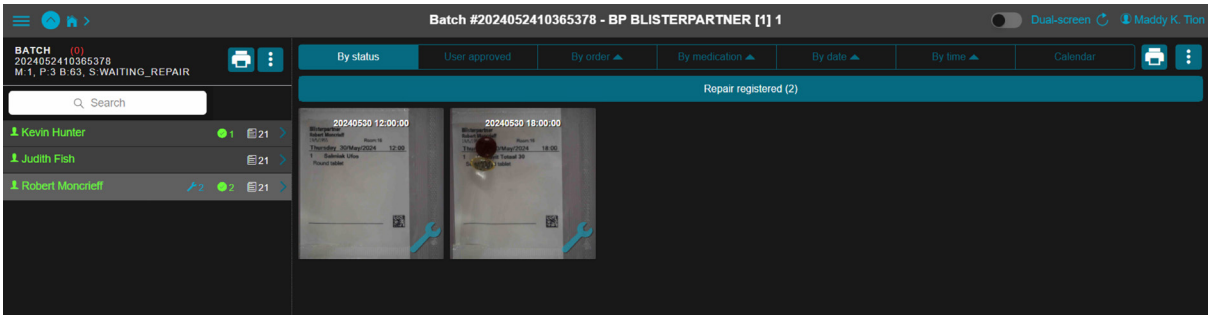


Image 22 - Batch Screen - Sorted 'By Status'

STEP 2 Go to the tab 'Repair Registered.' Here, all medication pouches from the *batch* per patient are displayed to which a repair has been assigned in an earlier phase and now needs to be physically carried out.

STEP 3 Click on the first medication pouch to be repaired. The *medication pouch screen* opens. It clearly indicates what the repair should be.

Repairs may include:

A. Adding or replacing pills

B. Removing pills or objects

C. Reporting out-of-stock items

D. Approving despite the previous marking

STEP 4 Review which repairs need to be carried out. In the status column (right side of the medication pouch screen), this is displayed under 'Repairs.'
There can be one or more repairs per pouch.

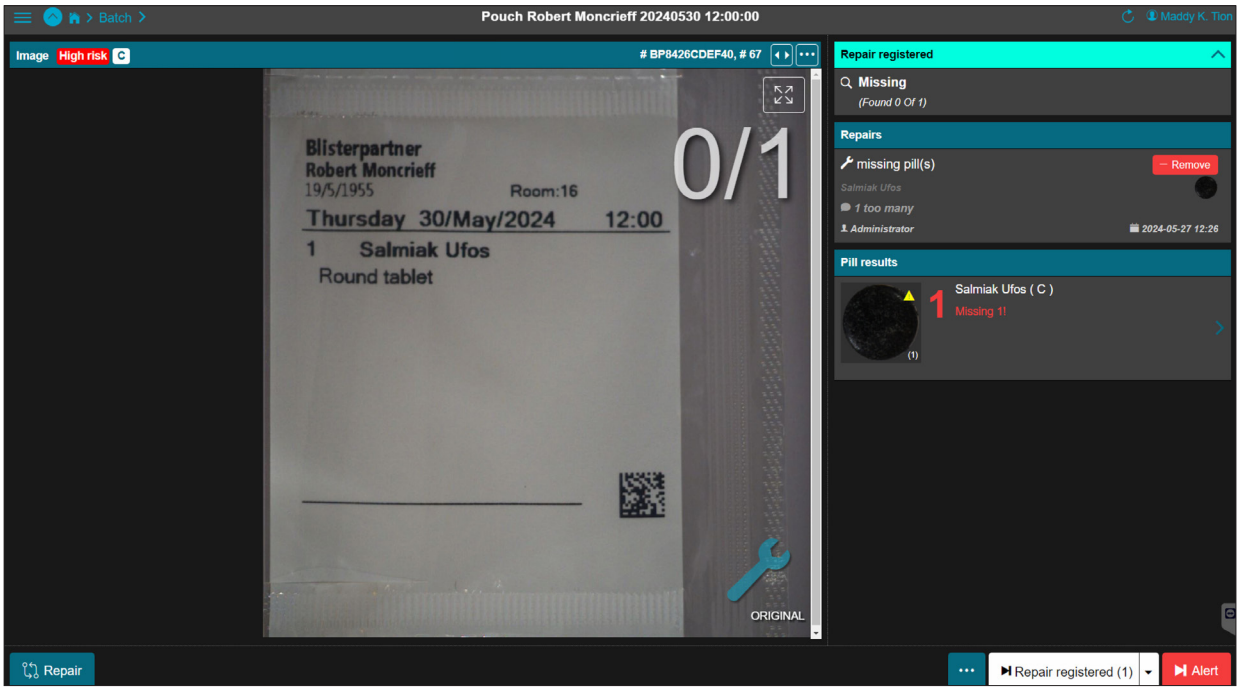


Image 23 - Medication Pouch Screen - with a Medication Pouch to be Repaired

STEP 5 Click the *Repair button* Repair . at the bottom left. A pop-up screen with a *repair checklist* will appear. This checklist shows all repairs for this pouch.

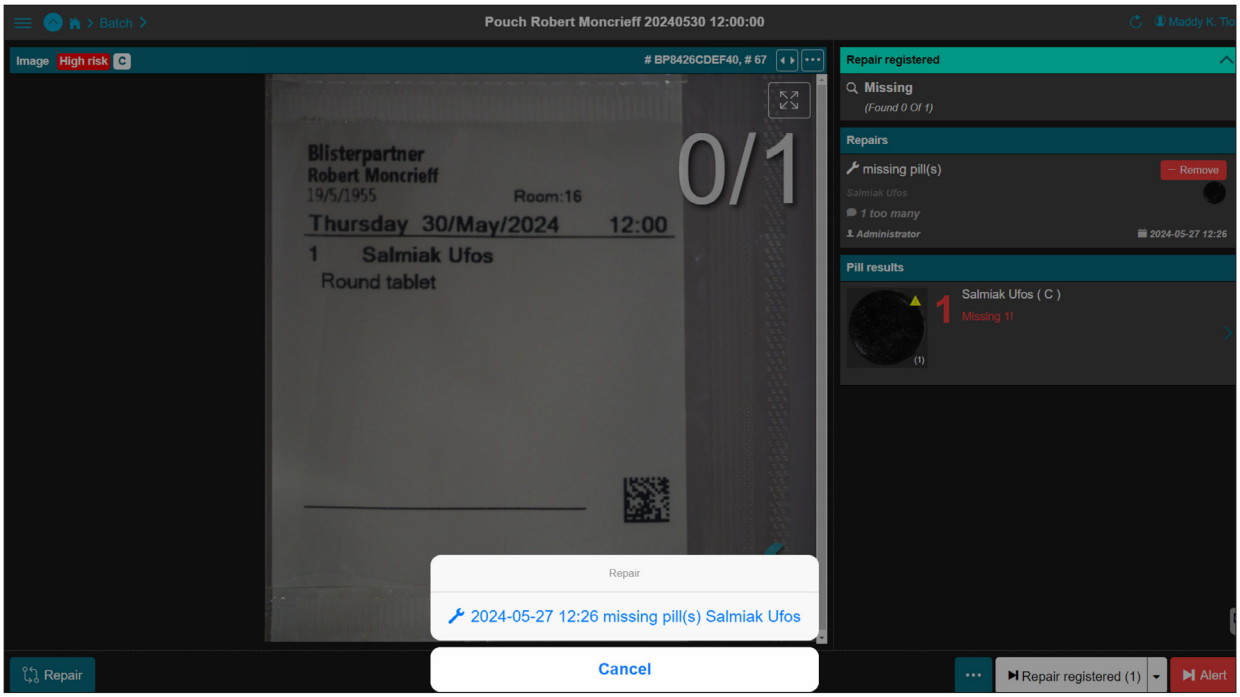


Image 24 - Medication Pouch Screen - with Repair Checklist, showing 1 Repair

STEP 6 Perform the physical repair. Open the pouch and select the appropriate repair option:

A. Adding or Replacing Pills

- Add or replace the indicated pill(s).
- Complete the associated pop-up screen for this repair. This registers the medication package for this repair.

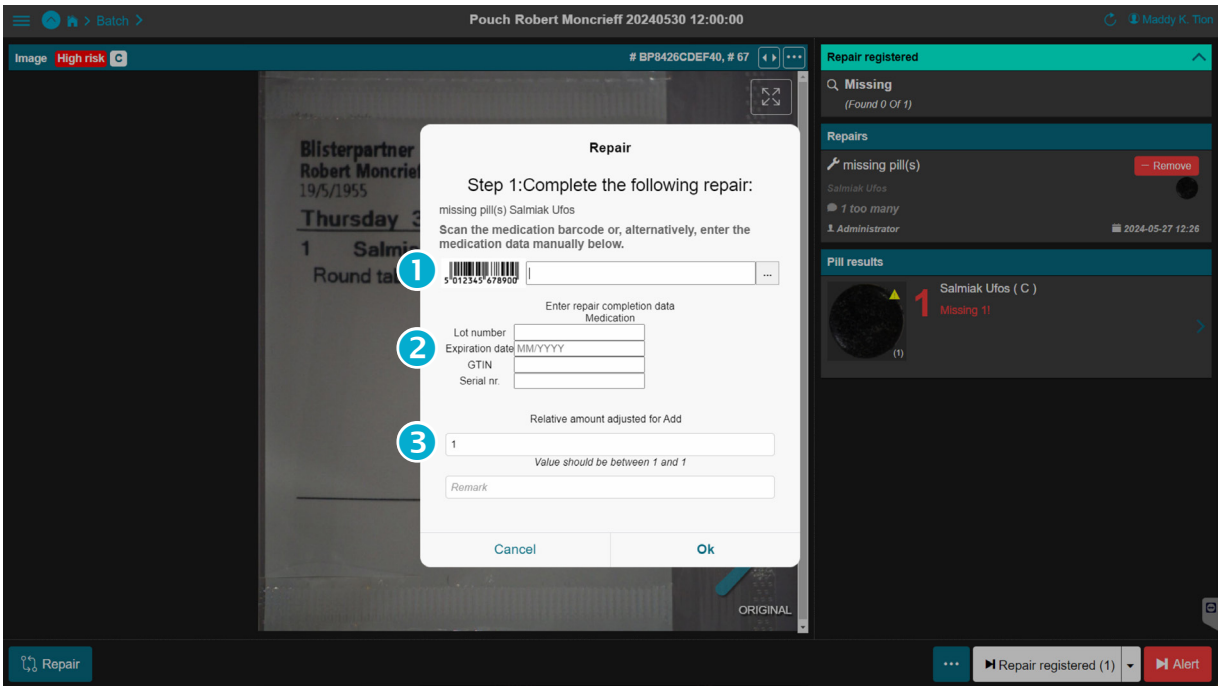


Image 25 - Medication Pouch Screen - Repair Pop-up Screen for Repair A

1. Barcode of the medication package
   - The barcode can be added with a barcode scanner.
2. Lot number, Expiration date, GTIN, Serial number
   - If present, this information is automatically filled in with a 2D barcode.
3. Relative quantity adjusted for Adding (replacing)
   - Indicate how many pills have been added or replaced. This information can be exported for an inventory management program.

B. Removing Pills or Objects

- Remove the indicated pill(s) or objects.
- Complete the associated pop-up screen for this repair. This allows a note to be added to the repair (this can be set as mandatory).

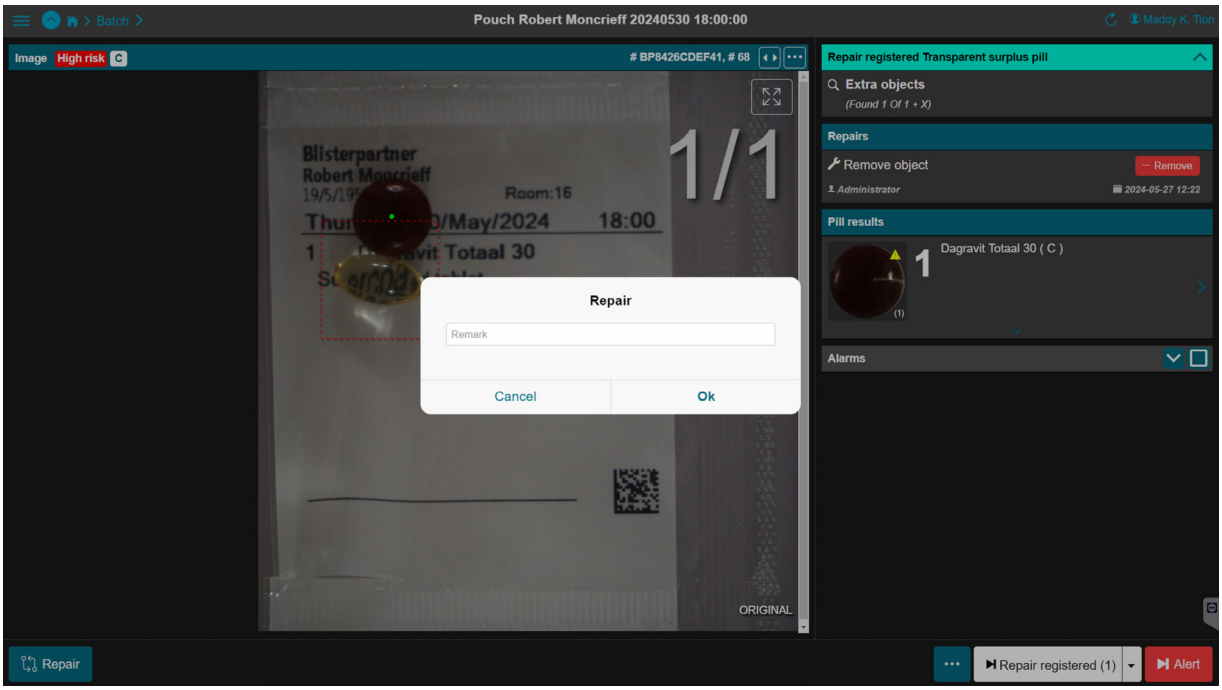


Image 26 - Medication Pouch Screen - Repair Pop-up Screen for Repair B

C. Reporting Out-of-Stock Items

- Complete the associated pop-up screen for this repair.
- Note the final quantity of the medication in the pop-up screen. This information can be imported into the inventory management program at a later time.

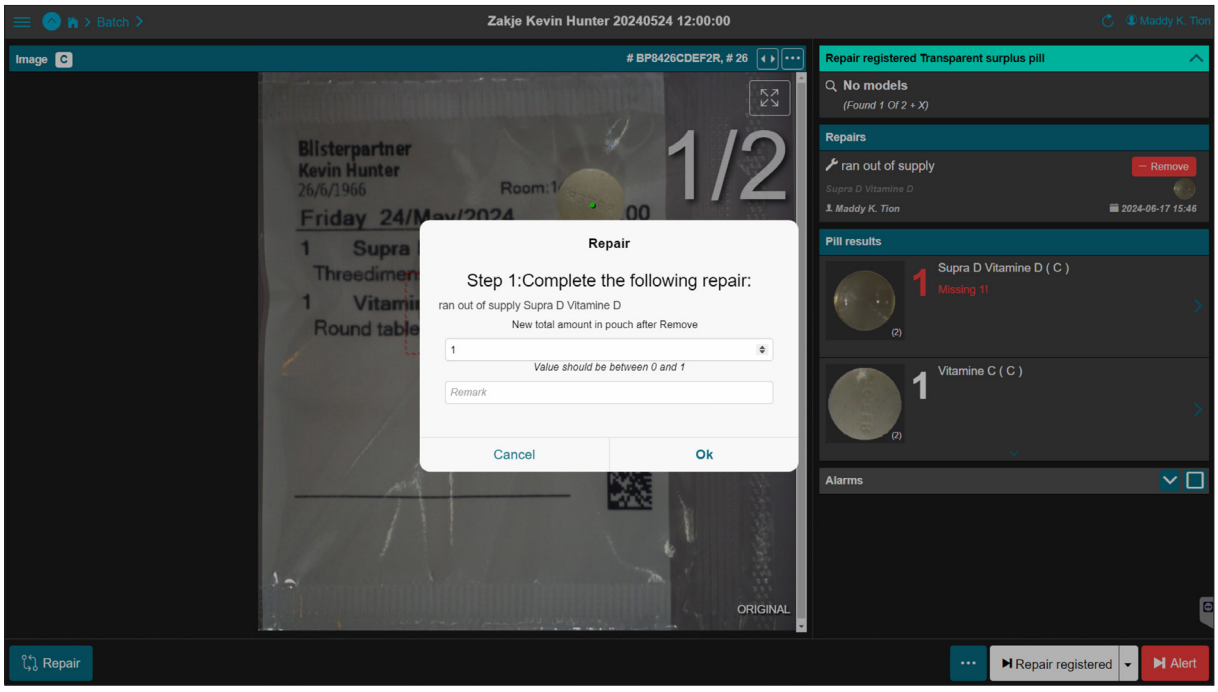


Image 27 - Medication Pouch Screen - Repair Pop-up Screen for Repair C

D. Approving Anyway (Despite Previous Marking)

If a repair does not need to be physically carried out upon closer inspection, the medication pouch can be manually approved. This may occur if there was, for example, a blurry photo or pills lying on top of each other that are actually correct.

- In the *medication* pouch screen, click on the three dots shown on the medication. A pop-up screen will appear.
- Click on '*Manually Approve*' in the pop-up screen. The pouch is now approved.

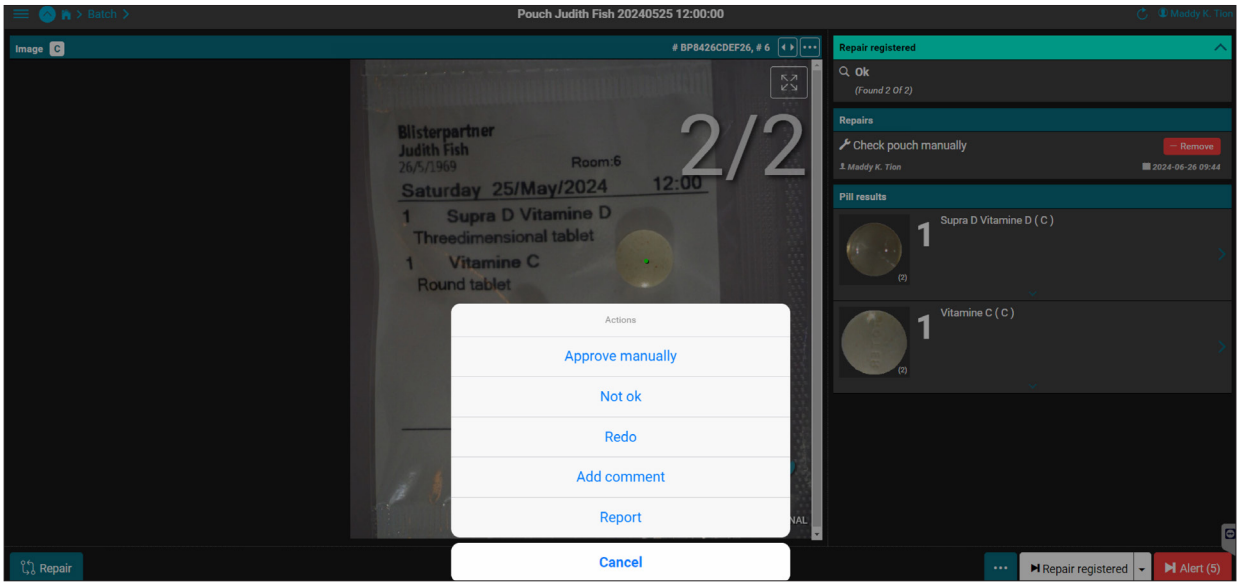


Image 28 - Medication Pouch Screen - with Pop-up Screen for Repair D, Manually Approve

STEP 7 The first physical repair is now complete. Repeat these steps to perform all repairs for this medication pouch and seal the pouch.

STEP 8 Click the *Next Repair Registered* button [Repair registered] to proceed to the next medication pouch to be repaired.

STEP 9 Repeat the previous steps until all pouches in this batch have been physically repaired.

When all medication pouches are processed and no more pouches need repair in this *batch*, a prompt will automatically appear to return to the *batch* screen.

The repaired pouches and their corresponding batches have now moved to the next phase and are automatically transferred to the next *to-do tab*.

8.11 To-do Tab: *Waiting for Repair Photo* | Phase 6

This tab shows all *batches* with medication pouches that have undergone a physical repair. To document this repair in *Pi Web*, a photo of the performed repair can be added to the respective medication pouch.

The creation and addition of this 'repair photo' can be done in two ways:

1. **With the Pouch Inspector:**
The *Pouch Inspector* takes a photo of the repaired pouch and inspects it simultaneously. It is possible that an alarm may be triggered again on the pouch, causing it to return to phase 1, the *to-do tab*: 'Alarms Present.'

2. **With the Mini Pi Repair Station** *(see accessories at chapter 5)*:
This allows quick and easy addition of photos of the repaired pouches to *Pi Web*. The photo is added to the original photo and presented for review in phase 7, the *to-do tab*: 'Waiting for Repair Verification.'.

Attention!

> *To use a separate repair station, a separate license is required.*

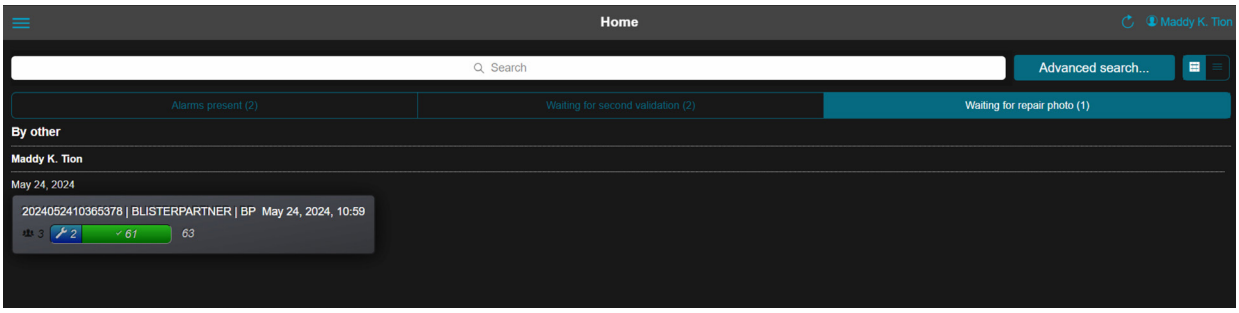


Image 29 - Home Screen - Phase 6, To-do Tab: Waiting for Repair Photo

8.11.1 Steps to Process a Batch in Phase 6

Method 1 - With the Pouch Inspector

STEP 1 Take the physically repaired medication pouch strips to the Pouch Inspector and feed them through the inspection area.

The strip of medication pouches is processed in the same way as during a regular inspection by the *Pouch Inspector*.

The *Pouch Inspector* automatically detects that these are repaired pouches and switches to '*Repair Scan Mode*.' In this mode, only the repaired pouches are examined. A '*repair photo*' is taken and added for each repaired pouch, and inspection is performed simultaneously.

If the repair does not trigger an alarm, the pouch (and the batch) moves to the next phase, phase 8, to-do tab: Complete. It can optionally be set to go to phase 7, to-do tab: 'Waiting for Repair Verification,' but this is not necessary.

If an alarm is triggered again on the pouch, the pouch (and the batch) returns to phase 1, to-do tab: 'Alarms Present.'

Image 30 - Pouch Inspector in Repair Scan Mode

Method 2 - With the Mini Pi Repair Station

STEP 1 Click on the *to-do tab 'Waiting for Repair Photo'* on the home screen. The *batch(es)* containing repaired pouches that need a repair photo will be shown.

STEP 2 Click on the *batch* to open the *batch screen*. Here, the medication pouches per patient that require a repair photo to be added are displayed.
The pouches are identifiable by the *repair photo icon*: 

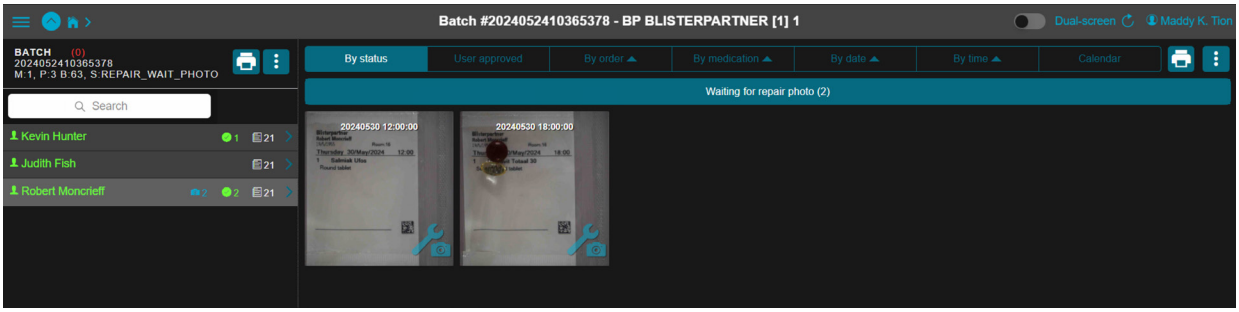


Image 31 - Home Screen - Phase 6, To-do Tab: Waiting for Repair Photo

STEP 3 Click on a medication pouch with the repair photo icon. The *medication pouch* screen will open.

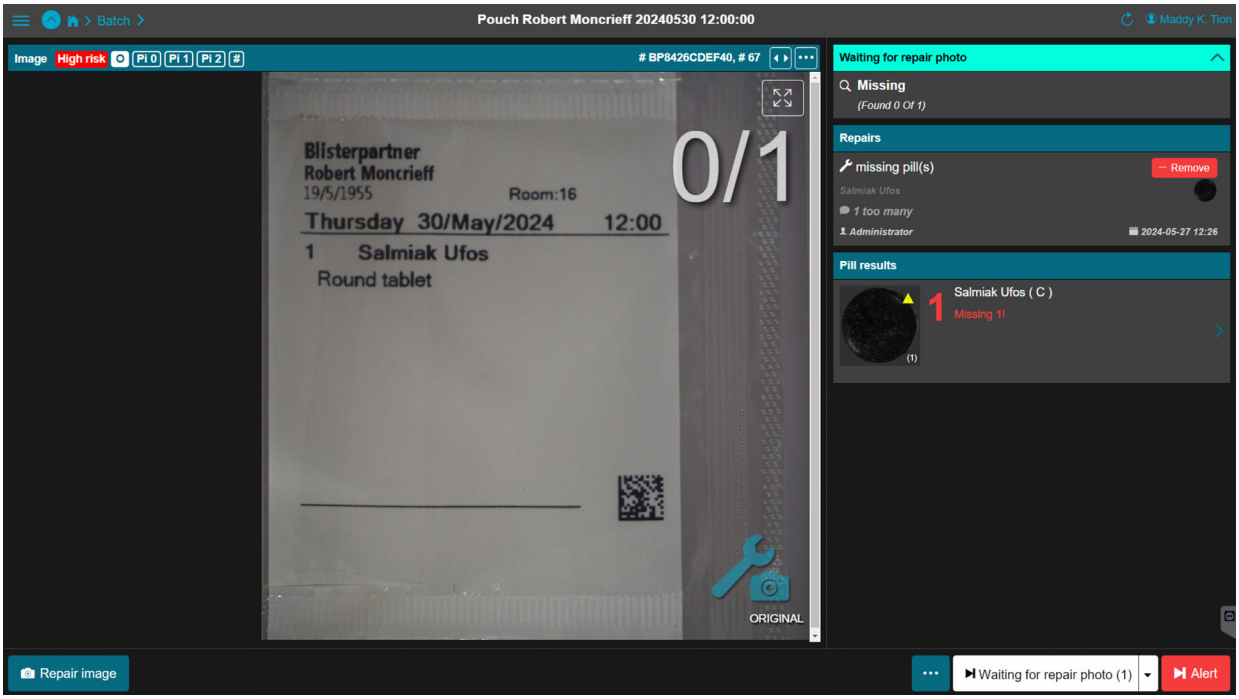


Image 32 - Medication Pouch Screen - with Original Photo

STEP 4 Click the *Repair Photo* button [Repair image] at the bottom left. A pop-up screen will appear showing the camera feed from the Mini Pi repair station.

STEP 5 Place the repaired medication pouch in the *Mini Pi* repair station and click the *Take Photo button* [Take snapshot] in the pop-up screen.

STEP 6 If the photo is satisfactory, confirm this with the *OK button* in the pop-up screen.

If the photo is not well taken, retake the photo and then confirm with the *OK button*.

The taken repair photo is now added to the repaired pouch.

Attention!

Optionally, the medication package used for the repair can also be added as a photo to the pouch.

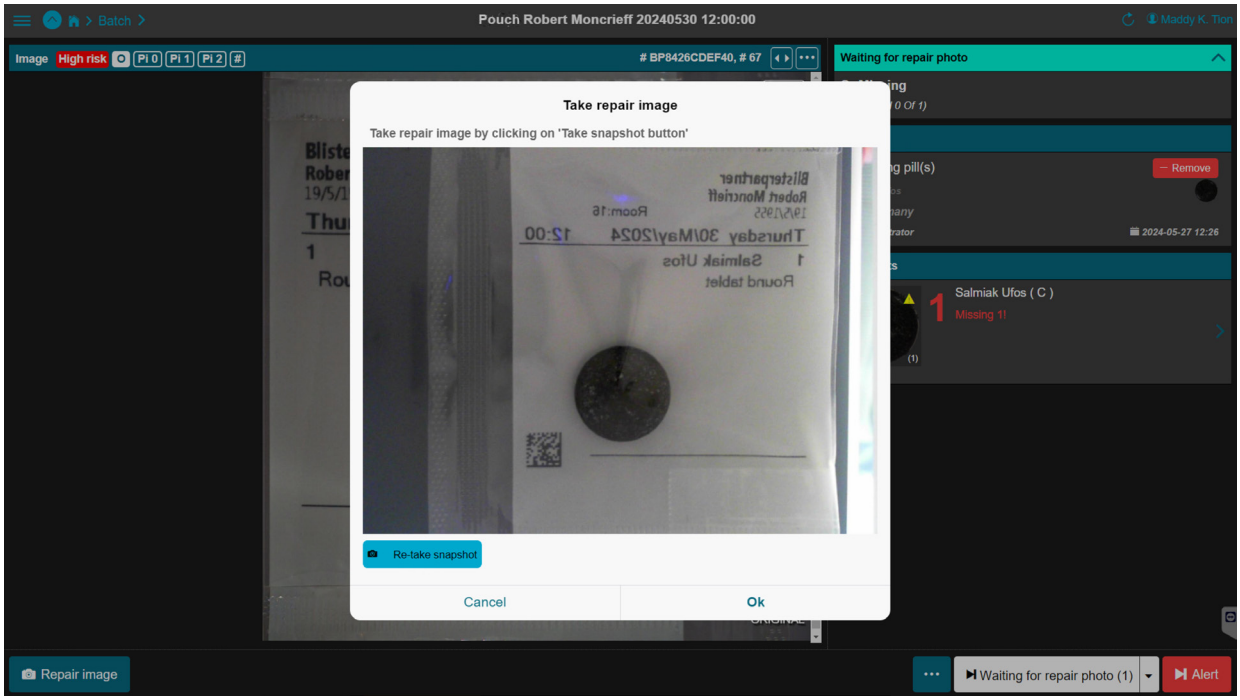


Image 33 - Pop-up Screen - with Camera Feed from the Repair Station

STEP 7 Click the *Waiting for Repair Photo button* [Waiting for repair photo (..)]. The next medication pouch awaiting a repair photo will be displayed. Process this as described in the previous steps.

STEP 8 Return to the *batch screen*. After the last repair photo of the batch is taken and saved, a prompt will appear to return to the *batch screen*. The batch will now automatically move to the next phase and will be visible in the next *to-do tab*.

8.12 To-do Tab: *Waiting for Repair Verification* | Phase 7

This tab shows the repaired *batches* that need to be verified by a different user than the one who performed the repairs.

Depending on the *workflow*, if in phase 6 'Waiting for Repair Photo' the same user who performed the repair and took the photo also performs the verification, phase 7 'Waiting for Repair Verification' may be skipped, and the *batch* will move directly from phase 6 to phase 8 'Complete'.

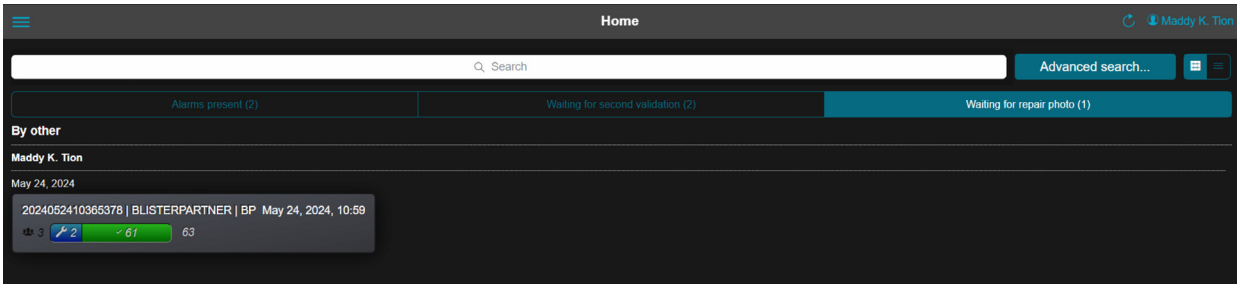


Image 34 - Home Screen - Phase 7, To-do Tab: Waiting for Repair Verification

Good to Know

- Since each organization (pharmacy, institution, hospital) has its own *workflow*, it is possible to adjust the to-do structure to fit that specific way of working. Certain phases can be enabled or disabled depending on the desired *workflow*.

8.12.1 Steps to Process a Batch in Phase 7

STEP 1 Click on the batch tile shown on the to-do tab: Waiting for Repair Verification. The batch screen will open.
To display the medication pouches to be verified per patient, sort by 'By Status.'

STEP 2 Click on a medication pouch to be verified; the medication pouch screen will open. Based on the comments and photos, assess whether this pouch has been correctly repaired.
There are two possibilities:

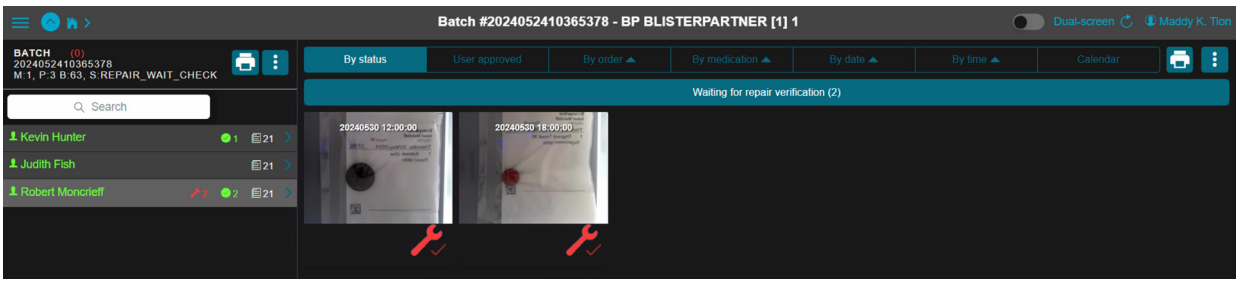


Image 35 - Batch Screen - with Medication Pouches Still to be Verified per Patient

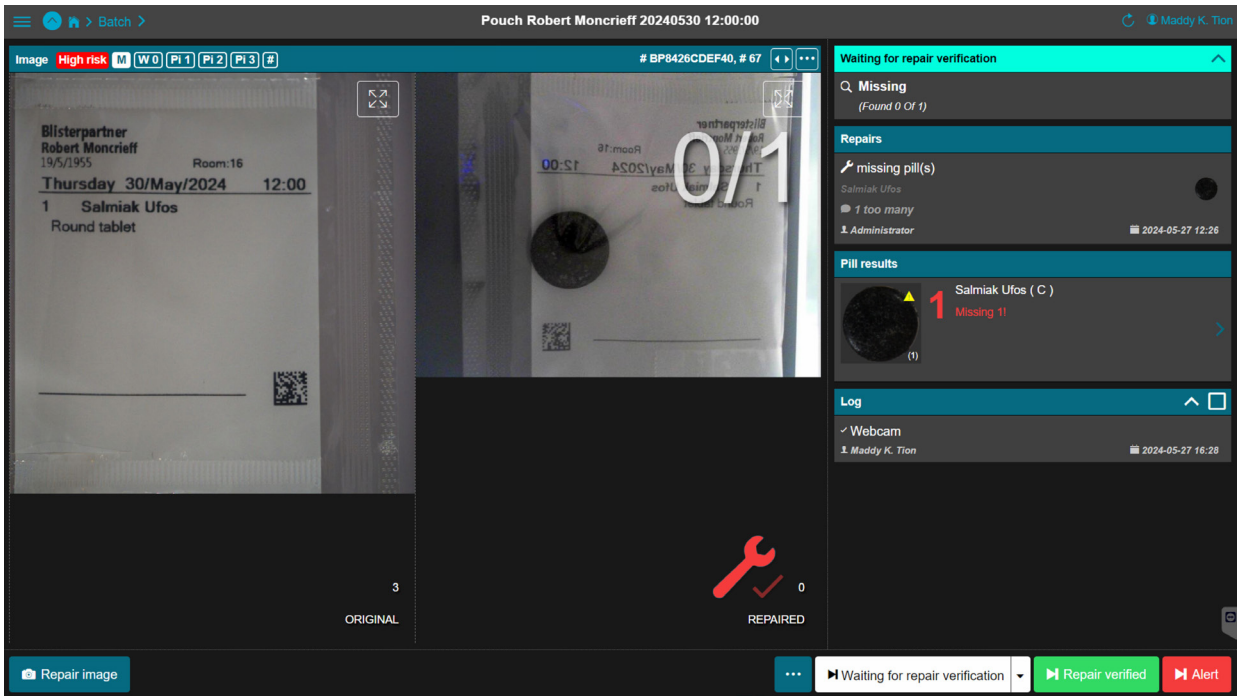


Image 36 - Medication Pouch Screen - Waiting for Repair Verification

A. Approve - The medication pouch is correctly repaired

Confirm that the pouch is correctly repaired by clicking the *Repair Verified button* Repair verified.

The next pouch to be verified will be displayed immediately.

B. Reject - The medication pouch is not correctly repaired

Click the blue *More Options button* ... in the button bar at the bottom. Select *'Not OK'* to then choose and assign one of the repair types. Click *'Save Repair'*.

The pouch and its associated *batch* return to a previous phase corresponding to the chosen option.

Click the *Waiting for Repair Verification button* Waiting for reparair verification. to display the next pouch to be verified.

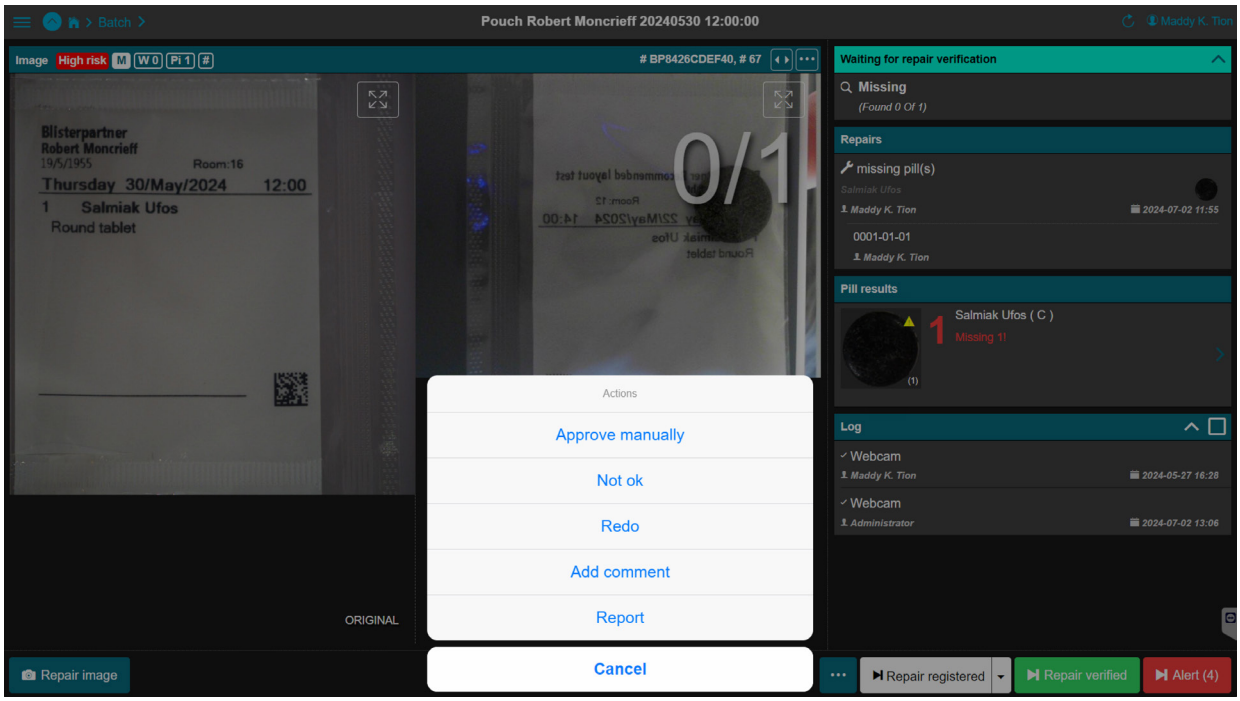


Image 37 - Medication Pouch Screen - Waiting for Repair Verification

STEP 3 Repeat these steps until all repaired pouches are verified. A prompt will automatically appear to return to the *batch screen*.

On the batch screen, the verified pouches are shown under the tab *'Repair Verified'* in the *'By Status'* section.

The patient names for this batch are now green, with a green wrench icon next to the name showing the number of verified pouches. The medication pouches contain a green wrench-with-checkmark icon .

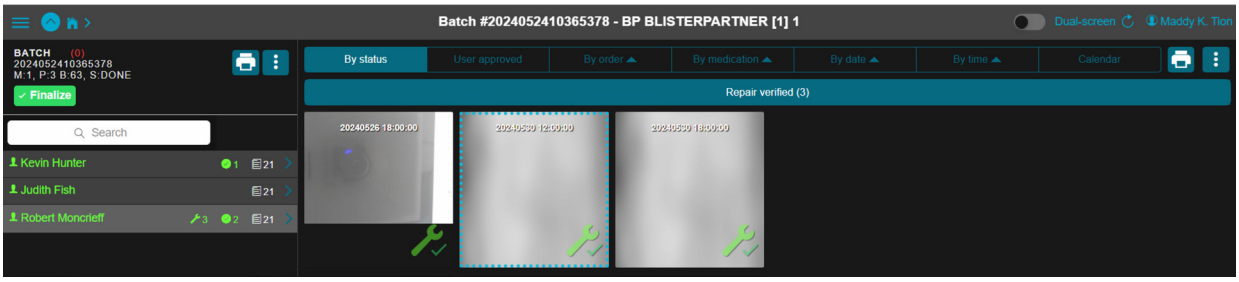


Image 38 - Batch Screen - with a Batch Where Repairs are Verified

The processed batch(es) have now moved to the next phase and are automatically transferred to the next *to-do tab*.

8.13 To-do Tab: *Complete* | Phase 8

The phases and their sequence depend on the desired *workflow*. Once all medication pouches have been processed (inspected, validated, possibly repaired, and verified), the final step is to complete the *batch*. This happens in the final phase, phase 8 - *to-do tab*: Complete.

An employee with the appropriate knowledge and rights within the organization can complete the *batch*. Completing means that the status of a medication pouch can no longer be changed and that the pouch is ready for further distribution.

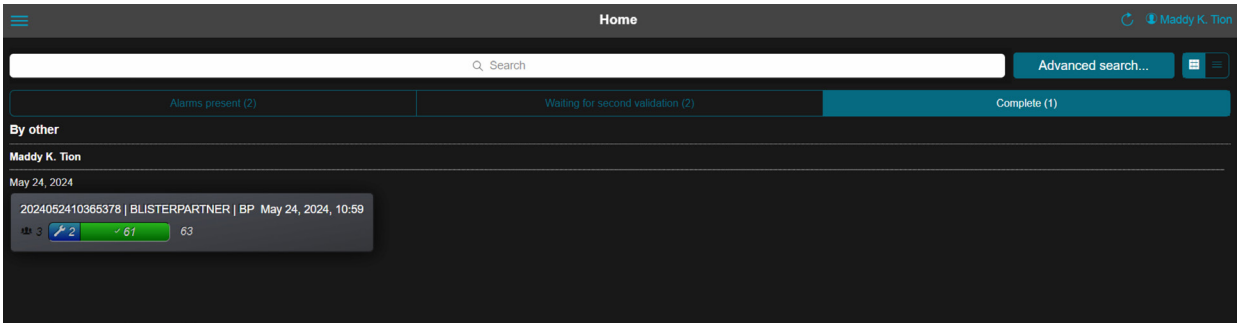


Image 39 - Home Screen - Phase 8, To-do Tab: Complete

8.13.1 Steps to Process a Batch in Phase 8

STEP 1 Click on the batch tile shown on the *to-do tab*: Complete. The batch screen will open.

STEP 2 If this batch can be completed, the *Finalize button* ✓ Finalize will appear at the top left.

A *batch report* can be printed (if desired).

Good to Know

- It is also possible to print a batch report at any time. The status of the medication pouches at that moment will be displayed. This can be useful for getting an overview of all repairs.

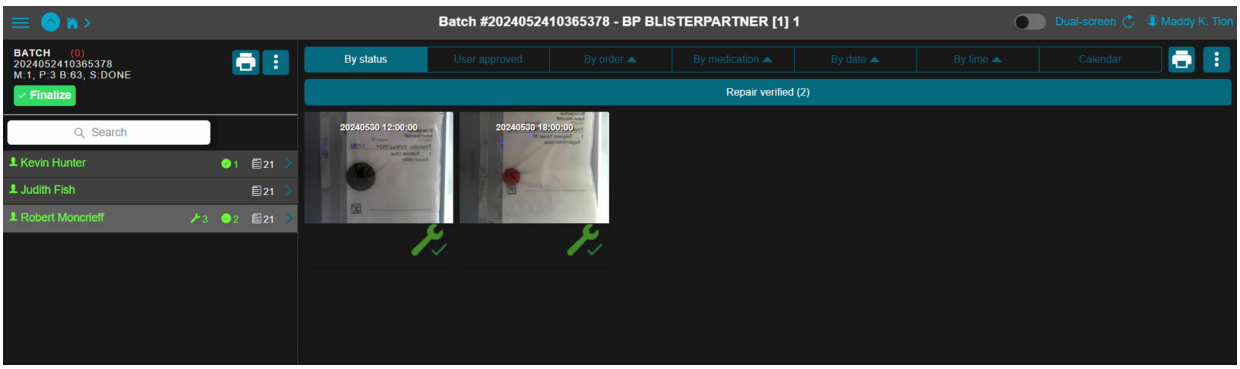


Image 40 - Batch Screen - Phase 8, To-do Tab: Complete, with Active Finalize Button

The *batch* is now '*Complete*,' and all phases are completed. The *batch* is no longer in any phase. Using '*Advanced Search*,' this *batch* can be found by patient name, medication pouch barcode, or location from the respective *batch*.

The physical medication pouches from this *batch* are now ready to be further processed within the internal system. This can optionally be done in combination with Blisterpartner's *Track & Trace software system*.

9 Settings and Function Descriptions of Pi Web

Our powerful inspection software *Pi Gui* performs the inspection, and *Pi Web* provides a clear overview of the inspection results. *Pi Web* is the central point where all information comes together. Inspection results are verified, validated, and archived here.

There are many different settings and functions in *Pi Web*. This chapter explains the standard use of these functions and settings.

9.1 Search

At the top of the home screen, a search bar is visible. This allows you to search within all inspected *batches* that are actively in a phase.

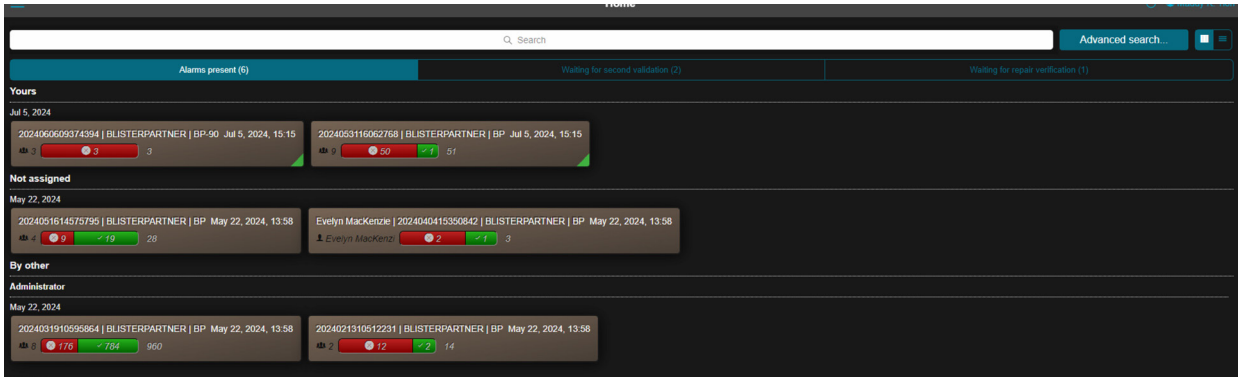


Image 41 - Home Screen - with Search Bar at the Top

Batches are divided into three groups:

First Group: 'Yours'
Selected based on your *batches* (those opened by you from the beginning).

Second Group: 'Not assigned'
No one has opened the *batch* yet.

Third Group: 'By other'
Batches that have been opened and processed by other users.

Batch not visible?
If a *batch* (patient, medication pouch) cannot be found, use '*Advanced Search*.' It is possible that the *batch* has been completed or processed in a period that has since been archived.

9.2 Advanced Search

At the top of the home screen, next to the search bar, the *Advanced Search button* Advanced search... is visible. This allows more specific searches within the inspected *batches* in various ways.

You can search by:

- **Batch ID:** Enter part or the full *batch* ID.
- **Patient Name:** Enter part or the full name of the patient.
- **Location:** Enter part or the full name of the location.
- **Barcode:** Enter the barcode numbers of the medication pouch.
- **Medication ID:** Enter the exact medication ID (all medication pouches with that medication will be found).

Enable '**ARCHIVE ID**' to also search in completed and archived *batches*.

Refine Searches
For more specific searches, you can combine search fields. For example, enter both location and patient name, or specific dates from ... to .... This will quickly display the best results.

9.3 Archive ID

During installation, an automatic archiving task can be set for completed *batches* from a certain period (optionally configurable).

This saves space and keeps search speed optimal. It prevents hard drives from filling up quickly with older inspection images from the *Pouch Inspector*. These images are compressed to a tenth of their original size and then archived.

Enable the '**ARCHIVE ID**' option in Advanced Search to search within the archived *batches*.

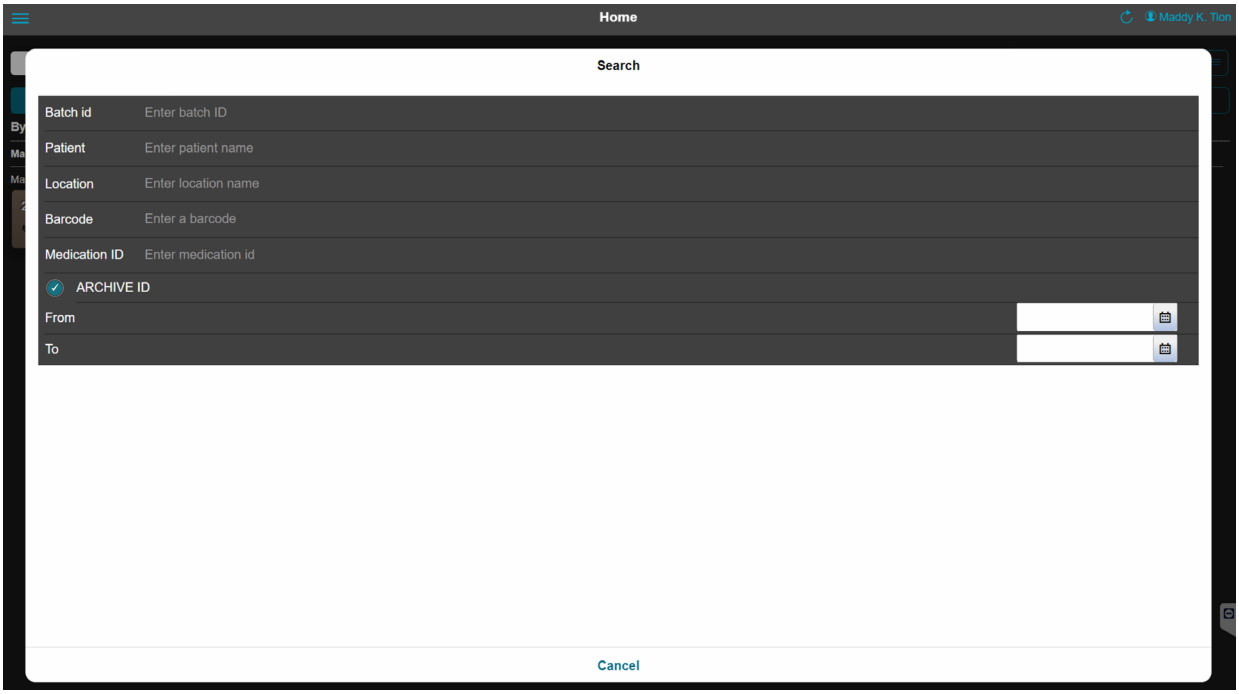


Image 42 - Advanced Search Screen - with ARCHIVE ID Option

9.4 Menu Items

When opening Pi Web, the Pi Web menu symbol  is visible in the top left corner of the home screen.

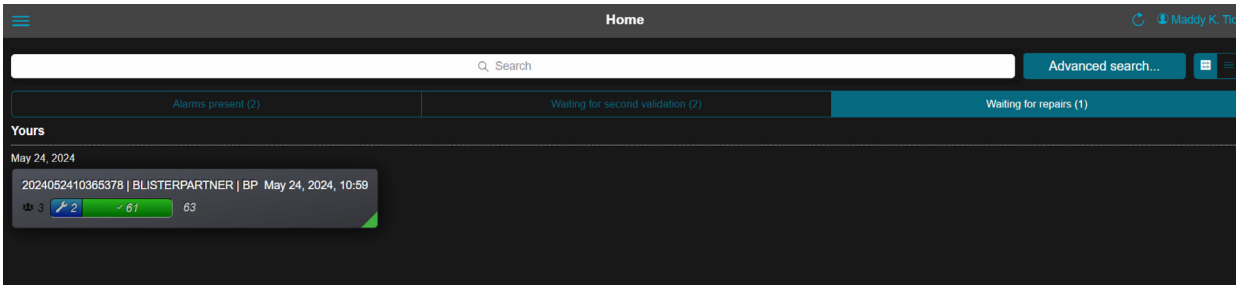


Image 43 - Home Screen - with Pi Web Menu Symbol in the Top Left Corner

Depending on the user rights settings, the following menu options may or may not be visible.

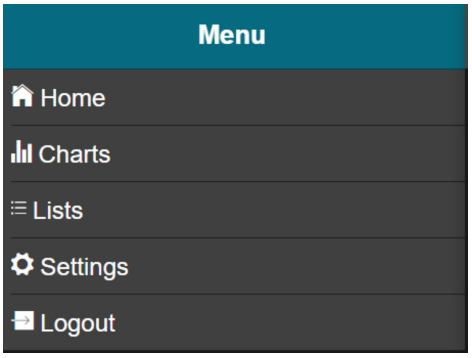


Image 44 - The Pi Web Menu

- **Home:** Return to the home screen.
- **Charts:** View and print charts.

  The available charts are:

  1. **Alarms**: Medication pouches that need to be reviewed.
  2. **Production Pouches**: The total number of inspected medication pouches.
  3. **Production Rolls**: The total number of inspected rolls or patients.
  4. **Repairs**: The total number of registered repairs by user.

- **Lists:** View and print lists and reports.

  The standard lists and reports are:

  1. **Medication**: Overview of all medications imported from the packaging machine.
  2. **Repairs**: The total number of repairs per type, per packaging machine.
  3. **Errors**: The total number of errors per medication, per repair type, per packaging machine

- **Settings:** Customize the system according to user preferences.

The available settings are:

1. **Users and Roles**: Create users and assign roles.
2. **Parameters**: Change general settings of the user interface.
3. **Repair Types**: Modify, add, and deactivate.

- **Log Out:** Log out the current user.

9.5 Lists & Reports

In Pi Web, various lists and reports can be generated and printed. Navigate to Pi Web ☰ *Menu –> **Lists*** and click on the desired list or report. Three standard options are available:

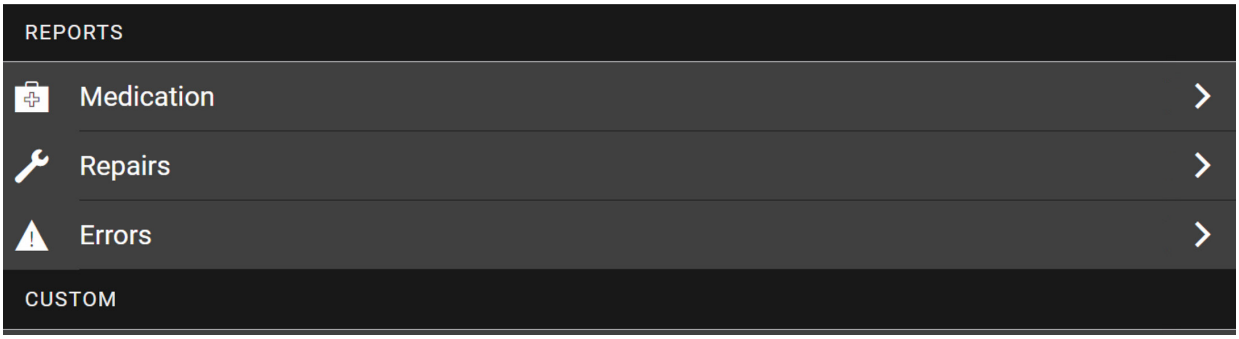


Image 45 - Pi Web Reports Menu

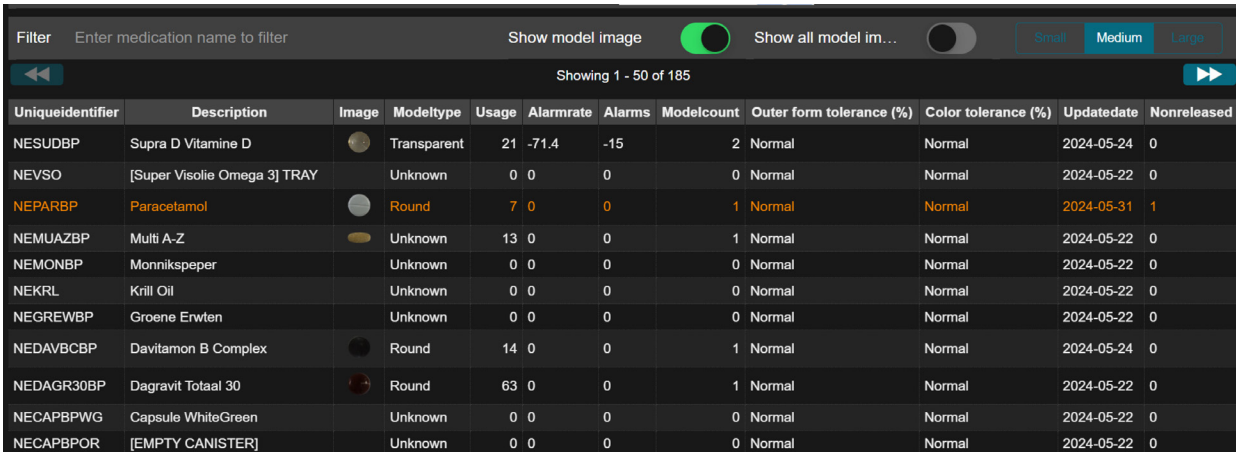
These lists and reports are useful for monitoring and analyzing processes, and for viewing historical data and trends. They can be printed and exported to Excel for further analysis.

9.5.1 Report 1. Medication

This is an overview of all medications imported from the packaging machine. This report includes, among other things, the following data:

Report 1. Medication	
Uniqueidentifier	Unique ID: each medication has a unique ID
Description	Short description of the medication
Image	Models: an image of the medication
Modeltype	Type of model of the medication
Usage	Number of times the medication has been used

Alarmrate	The percentage of medication that generates an alarm
Alarms	Total number of alarms for this medication
Modelcount	All models (whether or not activated or released)
Outer form tolerance (%)	Form tolerance: tolerance level for the shape
Color tolerance (%)	Tolerance level for the color
Updatedate	Date of the last modification
Nonreleased	Number of non-released models



Uniqueidentifier	Description	Image	Modeltype	Usage	Alarmrate	Alarms	Modelcount	Outer form tolerance (%)	Color tolerance (%)	Updatedate	Nonreleased
NESUDBP	Supra D Vitamine D		Transparent	21	-71.4	-15	2	Normal	Normal	2024-05-24	0
NEVSO	[Super Visolie Omega 3] TRAY		Unknown	0	0	0	0	Normal	Normal	2024-05-22	0
NEPARBP	Paracetamol		Round	7	0	0	1	Normal	Normal	2024-05-31	1
NEMUAZBP	Multi A-Z		Unknown	13	0	0	1	Normal	Normal	2024-05-22	0
NEMONBP	Monnikspeper		Unknown	0	0	0	0	Normal	Normal	2024-05-22	0
NEKRL	Krill Oil		Unknown	0	0	0	0	Normal	Normal	2024-05-22	0
NEGREWBP	Groene Erwten		Unknown	0	0	0	0	Normal	Normal	2024-05-22	0
NEDAVBCBP	Davitamon B Complex		Round	14	0	0	1	Normal	Normal	2024-05-24	0
NEDAGR30BP	Dagravit Totaal 30		Round	63	0	0	1	Normal	Normal	2024-05-22	0
NECAPBPWG	Capsule WhiteGreen		Unknown	0	0	0	0	Normal	Normal	2024-05-22	0
NECAPBPOR	[EMPTY CANISTER]		Unknown	0	0	0	0	Normal	Normal	2024-05-22	0

Image 46 - Pi Web - Report 1. Medication

Sorting by 'Alarm Ratio' and 'Usage'

Sorting a medication report by 'Alarmrate ' in combination with 'Usage' (Usage) is useful for identifying and addressing high alarm percentages for specific pills. Filter the list by the 'Alarm Ratio' column to identify medications with the highest alarm percentages. Pay attention to the 'Usage' column as well, since a high alarm ratio for frequently used medication is more urgent than for less frequently used medication.

You can solve the problem immediately by clicking on the medication description (Description). The medication screen opens, and a new proposed model can be added directly here.

Sorting by 'Nonreleased'

Sorting a medication report by 'Nonreleased' is useful for quickly getting an overview of all medication that has not yet been released and is therefore not included in the inspection. The rows for this medication are highlighted in orange.

You can release the medication by clicking on the medication description (Description). If the model is approved, it can be released immediately. Ensure that this is always done by an authorized employee with the appropriate knowledge and rights within the organization.

9.5.2 Report 2. Repairs

This Medication report shows the total number of repairs per type per packaging machine, making repeated errors per machine visible and allowing for correction or improvement.

Examples include a malfunctioning canister, pills getting stuck, or pills not falling into the pouch. Such problems become clear in this report.

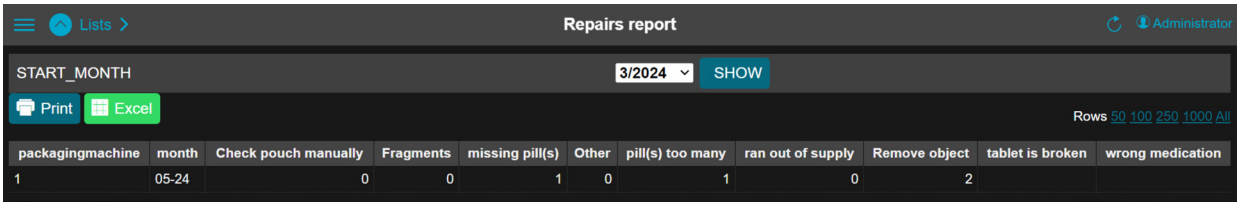


Image 47 - Pi Web Report 2. Repairs

9.5.3 Report 3. Errors

This Errors report provides an overview of the total number of errors per medication, per repair type, and per packaging machine.
This allows for identifying which medications are causing problems and require repairs. Examples include a malfunctioning or incorrectly calibrated canister.

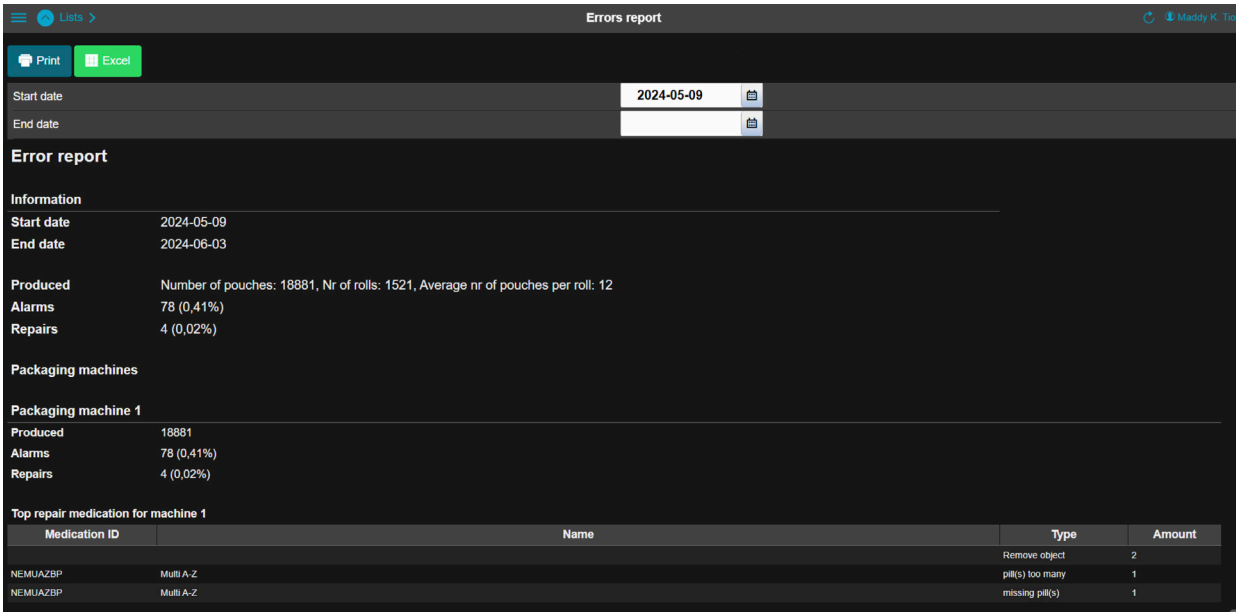


Image 48 - Pi Web Report 3. Errors

9.5.4 Custom Reports

In the Pi Web reports menu, there is a fourth option: '**Custom**'. This section contains additional options for reports and lists. These are pre-set templates that can be customized as desired. The following are the report templates available:

Custom Reports	
Daily Release	Daily Release
False Alarm Report	False Alarm Report
Settings change report	Settings Change Report
Production	Production
Productivity Report	Productivity Report
Initial Alarm Report	Initial Alarm Report
Not produced ocs patients report	Unproduced OCS Patients Report
Repair report per med	Repair Report per Medication
Batches produced per location	Production Batches per Location
Alarm Types	Alarm Types
LastRepairs	Latest Repairs
Daily production report	Daily Production Report
PatientProductionOrderList	Patient Production Order List
CustomBatchViews	Custom Batch Views
PouchStatusReport	Medication Pouches Status Report

9.6 Settings

To access **settings**, go to the *Pi Web menu* ☰, located in the top left corner of the home screen. Here, an employee with the appropriate user rights can adjust various settings and parameters, such as users and roles, the user interface, and repair types. These can be set, adjusted, or deactivated as needed.

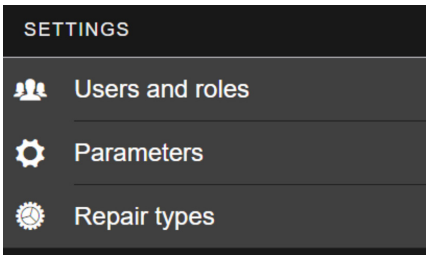


Image 49 - Pi Web - Settings-menu

9.6.1 Users and Roles

Through **'Users and Roles,'** *Pi Web* users can be added and their information and roles managed. Only employees with the correct permissions can add users and adjust their information and roles.

Adding, Entering, and Adjusting Users

To create a new user, click on 'Users,' then on the Add button + in the top right corner. See 8.4 *Creating Users for instructions* on adding users.

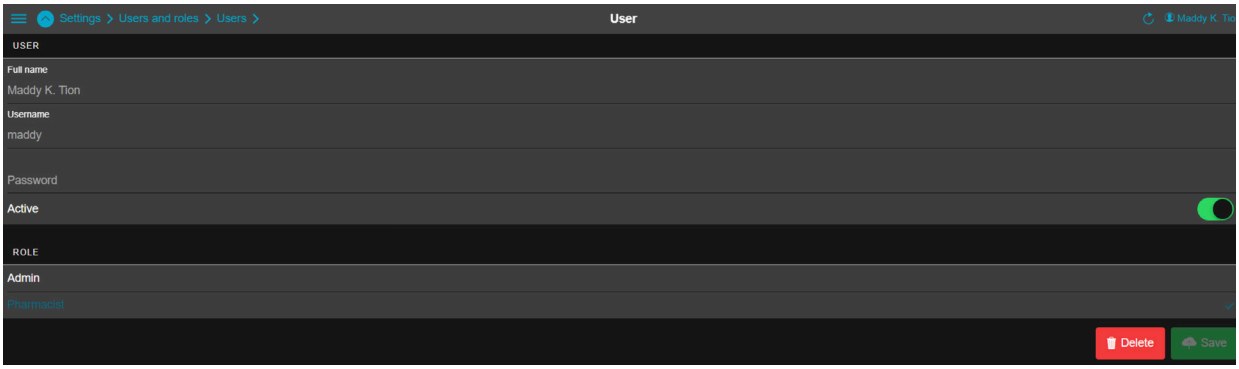


Figure 50 - Setting User Information

1. Navigation Bar:
   - The *Pi Web menu* ☰ is at the top left to return to the menu.
   - The navigation path is visible next to it: Settings > Users and Roles > Users.
2. User:

   First and Last Name: Enter the user's full name here (in this example, it is 'Maddy K. Tion')..
   Username: Enter a username here, the name with which the user logs in.
   Password: Enter a secure password here or change the password.
   Active: This switch indicates whether the user is active or not (in this example, the switch is on 'active,' green)..
3. Role:
   - Enter the role of this user here (for example, 'Admin' and 'Pharmacist').
4. Actions:

   Delete: The red button is to delete the user.
   Save: The green button is to save the changes made.

Attention!

> *Deleting a user also deletes all associated actions. It is better to deactivate the user.*

Adding, Setting, and Adjusting Roles

To add a new role, click on "Roles," then on the *Add button* + in the top right corner, and enter a unique role name.

Image 51 - Setting Roles

1. Navigation Bar:

   - The *Pi Web menu* is located at the top left to return to the menu.
   - The navigation path is also visible: settings > users and roles > roles.

2. Role:

   Name: Enter the role name here (in this example, 'Pharmacist').

3. Rights and Capabilities:

   There are various rights and capabilities that can be granted or denied to this role. Each right has a toggle switch to enable or disable it. In image 52, most switches are set to 'on' (green).

   Some examples of rights and capabilities are:

   Settings
   User management
   Advanced search (history)
   Finalize batch
   Un-finalize batch
   Discard batch (and un-discard)
   Manual check patient
   Pouch OK

Pouch Not OK (register a repair)
Do repair (part of repair completion)
Remove repair
Override repair (manual OK)
Verify repair (part of repair completion)
Model Management
Manual add model on Pi
View graphs
View lists
Audit
Audit config

4. Actions:

Delete: The red button is to remove the role.
Save: The green button to save the changes made.

9.6.2 Parameters

Through '**Parameters**', various settings for the Pi Web user environment can be adjusted. These settings are categorized into seven categories: Settings, Process, Repair, Audit, Advanced, Install, Pouch Images, and Date and Time.

The settings determine various aspects such as the automatic logout time, validation processes, and repair functions. Each setting can be enabled or disabled with a toggle switch. Enabled parameters are marked with a green switch, while disabled parameters are gray.

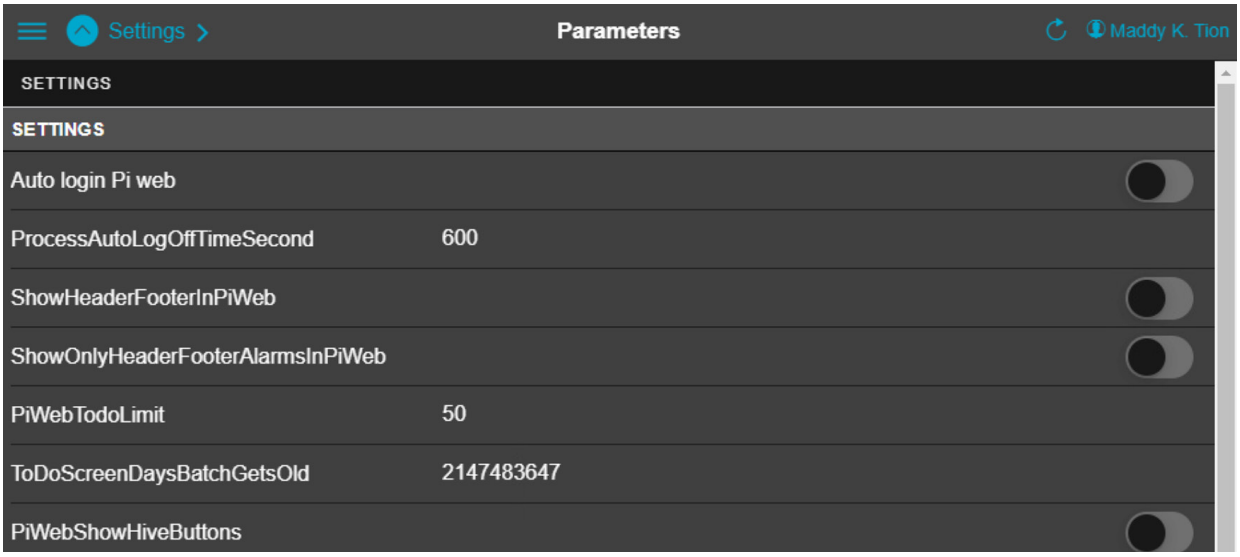


Figure 52 - Setting Parameters in Pi Web.

Parameters	
Settings	
Auto login Pi web	Defines that automatic login to *Pi Web* can occur without users needing to enter their login credentials.
ProcessAutoLogOffTimeSecond	Defines the time in seconds before the user is automatically logged out due to inactivity. Only active if Auto login *Pi web* is inactive. • Default setting: 10 minutes
ShowHeaderFooterInPiWeb:	Defines whether the header and footer pouch are displayed.
ShowOnlyHeaderFooterAlarmsInPiWeb:	Defines that the header and footer pouch are only displayed when there is an alarm in a header and/or footer pouch.
PiWebTodoLimit:	Sets the maximum number of batches that can be displayed on the *Pi Web* home screen. Having many batches can slow down the system • Default setting: 150
ToDoScreenDaysBatchGetsOld:	Defines the number of days after which a batch that has not yet been completed is considered outdated and moved to the *to-do tab* 'OLD'.
PiWebShowHiveButtons:	Defines whether a batch can be assigned to a user for processing.
Process	
SecondValidation:	Defines whether the 'Second Validation' function is activated.
SecondValidationDifferentUser:	Requires that if the 'Second Validation' function is active, 'Second Validation by Other user' is also activated.
ShowSingleIssue:	Defines that if there is one alarm in a medication pouch, only that alarm is zoomed in on. This reduces the user's workload.
Repair	
UseRepairCompletion:	Activates a checklist for repairs that need to be performed on medication pouches.

RepairCompletionDifferentUser:	Requires the repair to be performed by a different user than the one who submitted the repair request.
ImmediateRepair:	Defines that only one type of repair can be selected and saves it immediately after selection.
SplitRepairButtons:	Defines that there are repair buttons in two places: at the medication and at the medication pouch. If inactive, then only at the medication pouch. • Default setting: Active
NextOnSaveRepair:	Defines whether the next alarmed medication pouch is shown immediately after saving a repair.
RepairVerifyDifferentUser:	Requires that verification of the repair be carried out by a different user.
RepairScanOkStillNeedsVerify	Requires that after a repair and approval via Pouch Inspector using Repair Scan, a further verification is still necessary.
NoRepairCompleteDialog	Defines that if the 'Checklist for repairs' (UseRepairCompletion) function is active, no pop-up screen is shown to fill in barcode, expiration date, etc.
AllowUnfinalize	Defines whether a completed batch can be set back to incomplete, provided the user has the correct rights.
PiWebOtherUserMessageSupression	Defines that the pop-up message that another user is the batch owner does not appear when clicking on a batch.
Audit	
EnableAuditing	Defines that random extra checks on medication pouches can be carried out. In the batch screen, a separate to-do tab 'Audit' then appears.
EnableInlineAuditing	Defines that, if the 'Auditing' (EnableAuditing) function is active, the relevant medication pouches are placed under the phase tab 'Alarms'.
AuditBatchPercentage	Defines the percentage of batches that must be audited.

AuditPouchPercentage	Specifies the percentage of the number of medication pouches per batch that must be audited.
Advanced-button	
Install	
Language	Specifies the default language setting for Pi Web. Each user can then choose a personal language setting.
Pouch images	
Mirror image vertically	Mirrors the original photo vertically. • Default setting: TRUE
Mirror image horizontally	Mirrors the original photo horizontally. • Default setting: FALSE
Rotate image	Rotates the original photo 180 degrees. • Default setting: TRUE
Date and time	
Intake date format	Specifies the format of the intake date. • Default setting: yyyy-MM-dd
Intake time format	Specifies the format of the intake time. • Default setting: HHmm
Pouch date format	Specifies the date format of the medication pouches. • Default setting: ddMM
Pouch time format	Specifies the time format of the medication pouches. • Default setting: HH:mm:ss

9.6.3 Repair Types

On this page, employees with the correct user rights can add, modify, and manage repair types.

Image 53 - Setting Repair Types

To add a new repair type, click on 'Repair Types', then on the Add button + at the top right, and enter a unique repair type name.

To only modify a repair type, click on the repair type name.

1. Navigation Bar:
   - At the top left is the *Pi Web menu* ☰ to return to the menu.
   - Additionally, the navigation path is visible: settings > repair types.
2. Repair Type:

   Name: Enter the name of the repair type here (in this example, it is 'missing pill(s)').
3. Repair Properties:

   Medication:

   Active: The repair type is displayed under the medication in the recipe list.

   Inactief: The repair type is displayed under the photo of the medication pouch.

Ask for Barcode:

Active: When handling the repair, a barcode of the medication package is requested via a pop-up window (scanning optional).

Inactive: No barcode is requested.

Require Barcode *(only possible if 'Ask for Barcode' is active):*

Active: When handling the repair, a barcode of the medication package is requested via a pop-up window and is mandatory.

Inactive: A barcode is requested, but it is not mandatory.

Ask for Comment:

Active: When handling the repair, a comment is requested via a pop-up window (optional).

Inactive: No comment is requested.

Require Comment *(only possible if 'Ask for Comment' is active):*

Active: When handling the repair, a comment is requested via a pop-up window and is mandatory.

Inactive: A comment is requested, but it is not mandatory.

Modify Amount (if configured for inventory management):

Active: In the export file, the quantities of the medication to be repaired are tracked (add, remove, or replace).

Inactive: Nothing is tracked in the export file.

Modifies final amount (if configured for inventory management):

Active: In the export file, the final quantity of the pill is adjusted to the actual number in the medication pouch.

For example: if a medication pouch cannot be repaired due to a shortage, an incomplete prescription is sent. The original prescription then differs from the final quantity in the pouch.

Inactive: In the export file, the final quantity of the pill is not adjusted to the actual number in the medication pouch but is equal to the number in the original prescription.

Modify amount type (if set for inventory management):

None:	No changed medication quantity is entered in the export file.
Add:	The quantity of medication added during the repair of the medication pouch is shown in the export file.
Remove:	The quantity of medication removed during the repair of the medication pouch is shown in the export file.
Replace:	The quantity of medication replaced during the repair of the medication pouch is shown in the export file.

Modification amount is relative:

Active:	The quantity entered is interpreted as an adjustment relative to the original quantity in the prescription.
Inactive:	The quantity entered is interpreted as the final total.

Clears handling needed flag:

Active:	A special alarm (such as re-pack, where pouches need to be exchanged) can be cleared.
Inactive:	A special alarm cannot be cleared.

Active:

Active:	The repair type is displayed in the medication pouch screen.
Inactive:	The repair type is not displayed in the medication pouch screen.

4. Actions:

Save: Click the green button at the bottom right to save the changes made.

Attention!

> *It is not possible to delete created repair types.*
> *However, they can be set to inactive.*

10 Batches

A '*batch*' is an output file from a packaging machine. This is a *batch* or group of medication pouches that form a unit and are processed as a whole. It can be one long strip of filled medication pouches for different patients but for the same institution.

A *batch* can be processed as a loose strip or per spool, manually or fully automatically with the *Pouch Inspector Reel-to-Reel* or in combination with a *Pi Transport* or with a *Cut&Roll*.

After inspection of the *batch* by *Pouch Inspector* and processing of the results in *Pi Web*, the physical medication pouches of this *batch* are inspected and ready for the next step in the inspection process.

Batches are divided into three groups and are clearly displayed as *batch* tiles on the *Pi Web* home screen.

First group: 'Yours'
Selected based on your *batch*es (the *batch*es you have opened from the start).

Second group: 'Not assigned'
No one has opened the *batch* yet.

Third group: 'By other'
Batches that have been opened by other users and are being processed by them.

Clicking on a *batch tile* opens the *batch* screen.

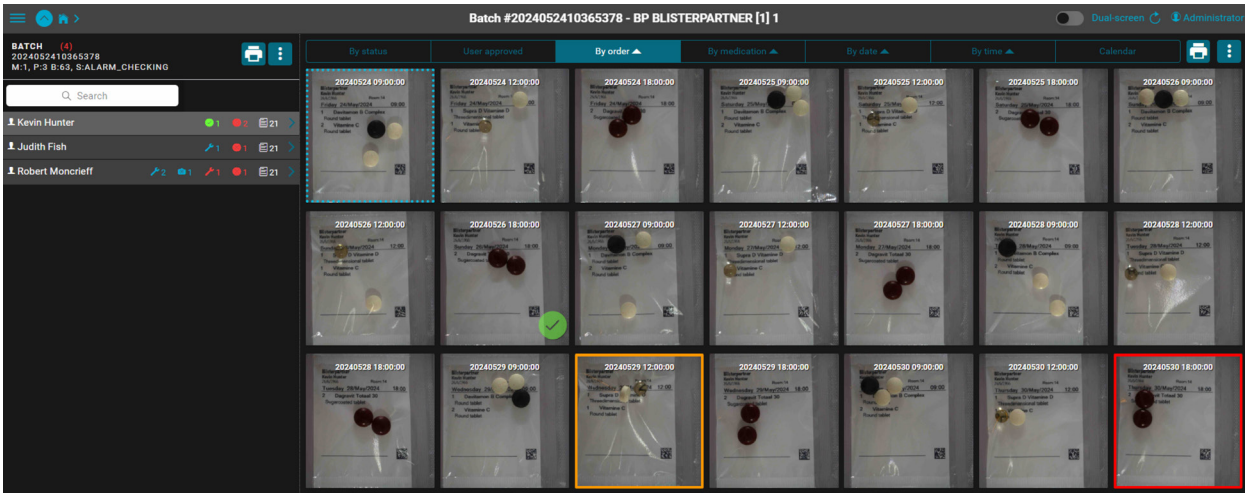


Image 54 - Batch screen

10.1 The batch screen

This screen provides a detailed overview of the status and contents of the inspected medication pouches per patient in a specific *batch*.

The *batch* screen is divided into various sections and there are different tabs to sort the *batch*. Below is a description of the different components:

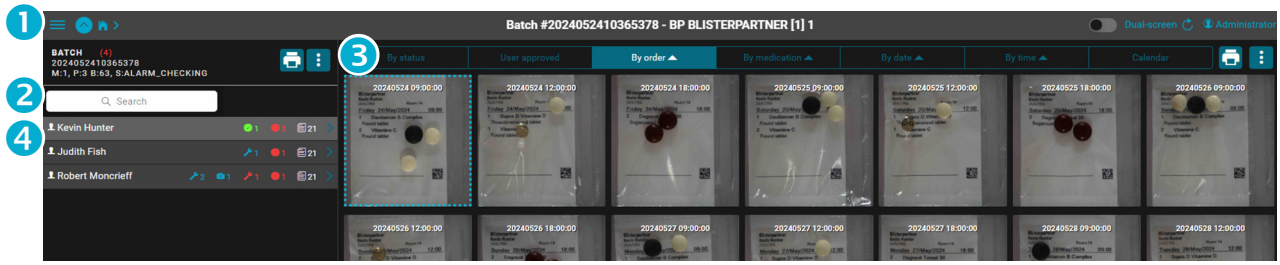


Image 55 - Batch screen explanation

1 Navigation Bar:

Top left

- The *Pi Web menu icon* to return to the menu.
- The *Back icon* to go back one page.
- The *Pi Web home icon* to return to the *Pi Web* home screen.

Top center

- The *batch* information: the *batch* number, the location name, and the sub-location name of the institution for which the *batch* is intended.

Top right

- Dual screen on/off switch
- The Refresh page icon to refresh the page.
- The Current user icon followed by the username. The user's language preference can also be selected here.

2 Search Function:

A search bar to search within the displayed *batch* for patients.

3 Print Batch Report & Batch Menu Button:

Left side

- The Print *batch* report button prints the pre-configured *batch* report directly.
- The *Batch menu* button eight actions for this *batch*.

4 Patient List

Left side

The patient list is an overview of all patients in this *batch*. Next to each patient's name, status icons are displayed. These show, for example, how many medication pouches there are for this patient, what has been done in each phase, how many pouches have alarms, whether repairs have been reported, and so on.

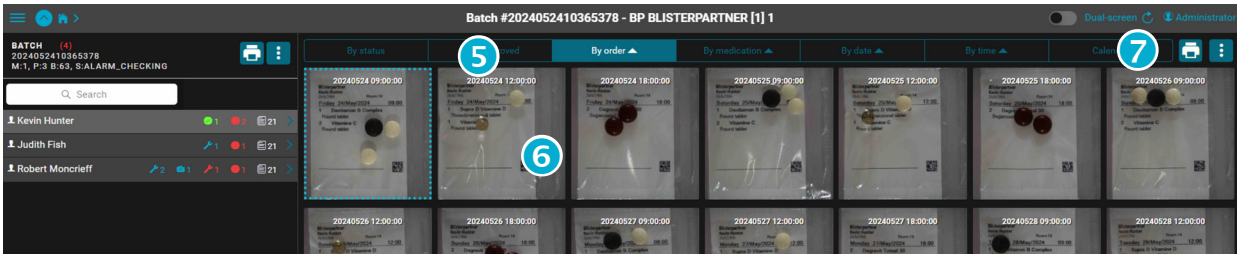


Image 56 - Batch screen explanation

5 Filter & Sort tabs:

Top center

The filter and sort tabs display a screen with the medication pouches in that *batch*, filtered or sorted by: 'By Status', 'Approved by User', 'By Order', 'By Medication', 'By Date', 'By Time', and 'Calendar'.

6 Medication Pouches:

The largest part of the screen

The medication pouches are displayed in a grid, each with a date and time, arranged according to the chosen sorting option. The pouches are visually ordered and show the contents of each pouch, including pills and a label with details, and have a status indication. Some pouches have colored borders and icons indicating their status, such as a green checkmark or a red or orange border around a pouch.

7 Print Patient Report & Patient Menu Button:

Right side

- The Print patient report button prints the pre-configured patient report directly.
- The Patient menu button shows more actions for this patient.

10.2 Filter, Sort, and Phase tabs in the batch screen

In the *Pi Web batch* screen, all inspected medication pouches are visible per patient. Using the filter, sort, and phase tabs in the *batch* screen, the inspected medication pouches can be displayed in various organized ways.

Below is a description of the different filter and sort options:

Filter tab 'By Status'
This tab shows all alarmed medication pouches of the selected patient that require action or have already been acted upon. Since pouches can be in different phases, 'By Status' is divided into phase tabs. A phase tab becomes visible only if there is at least one pouch in that phase.

This makes it quick and easy to see which medication pouches are in which phase.

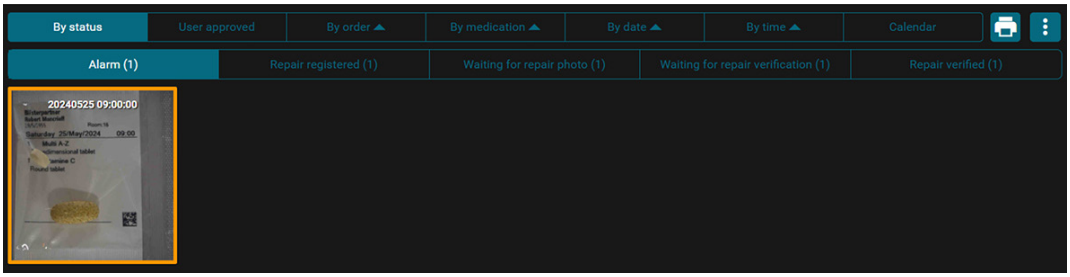


Image 57 - Filter tab, Selected by 'By Status' and Phase tab on 'Alarm'

There are 5 Phase tabs:

1. **Alarm** - *Action Required*
   Medication pouches containing an alarm.
   Visible: a square around the medication pouch, ranging from orange (and shades of orange) to red (see Image 53).

2. **Repair Registered** - *Action Required*
   Medication pouches to which one or more repairs have been assigned.
   Symbol: Blue wrench on the pouch (also next to the patient name).

3. **Waiting for Repair Photo** - *Action Required*
   Medication pouches that have been repaired and are waiting for a photo of the repair(s).
   Symbol: Blue wrench with camera on the pouch (next to the patient name, only a blue camera).

4. **Waiting for Repair Verification** - *Action Required*
   The repaired and photographed medication pouch still needs to be verified.
   Symbol: Red wrench with red checkmark (next to the patient name, a red wrench with a number).

5. **Repair Verified** - *No Action Needed*
   The repair of the medication pouch has been verified.
   Symbol: Green wrench with green checkmark (next to the patient name, a green wrench with a number).

Filter tab 'Approved by User'

Under this tab, all alarmed medication pouches of the selected patient that have been approved by a user are visible. No further action is required for these medication pouches.

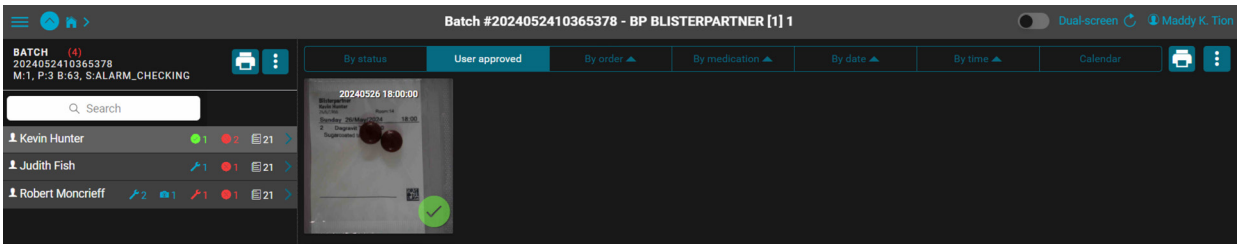


Image 58

Sort tab 'By Order'

This tab sorts all medication pouches of the selected patient in production order.

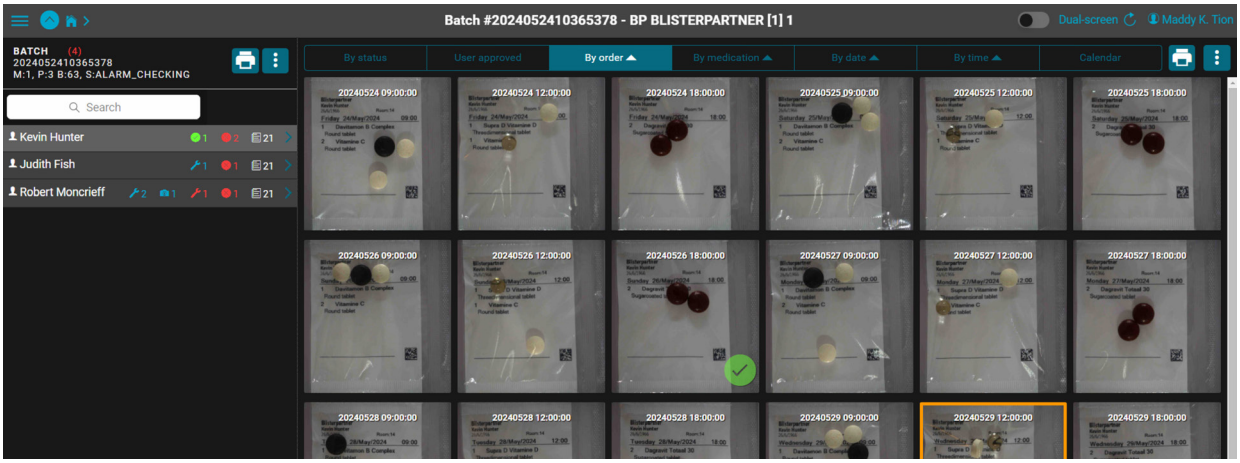


Image 59

Sort tab 'By Medication'

This tab sorts all medication pouches of the selected patient by medication or combinations of medication.

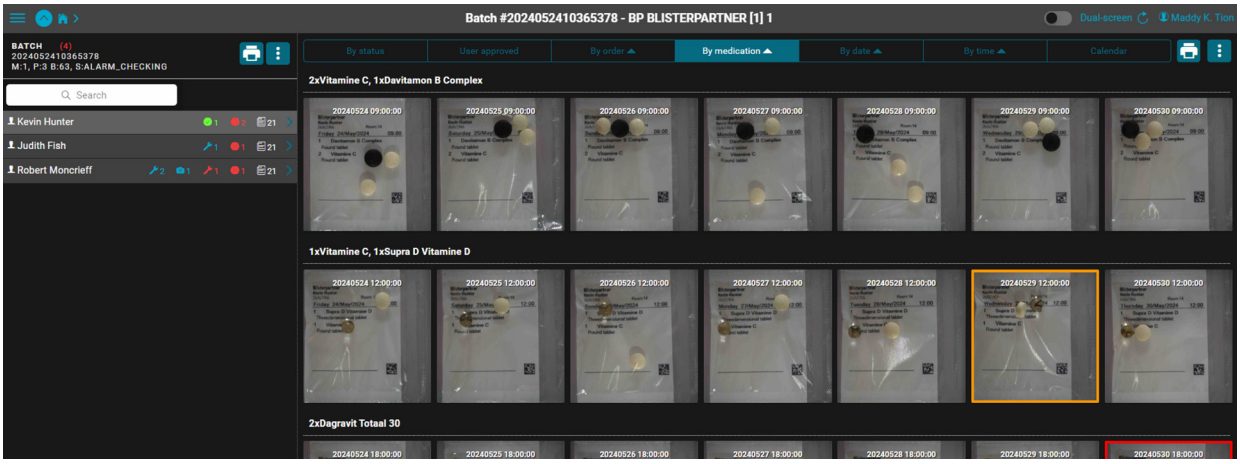


Image 60

Sort tab 'By Date'

This tab sorts all medication pouches of the selected patient by date of intake day.

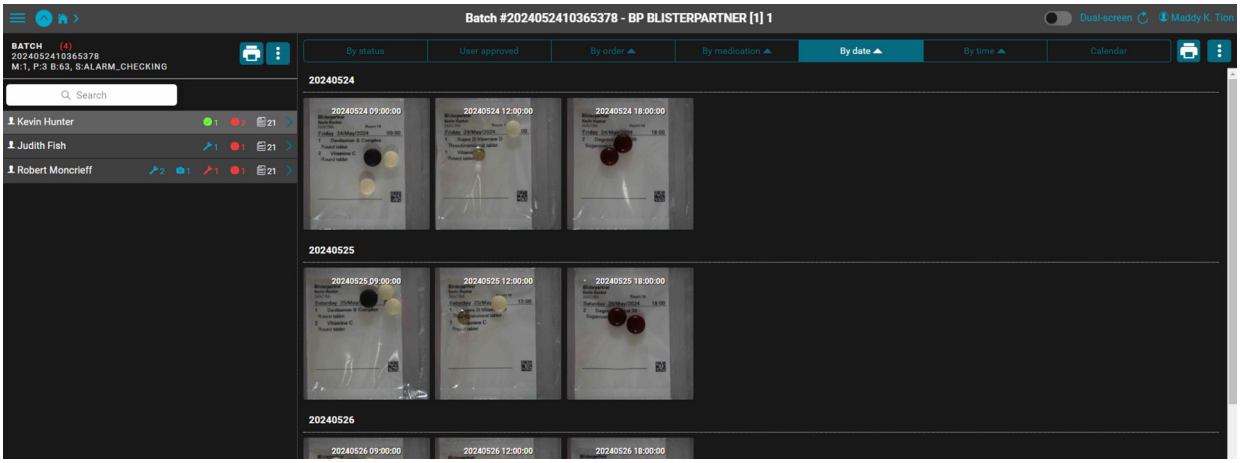


Image 61

Sort tab 'By Time'

This tab sorts all medication pouches of the selected patient by intake time.

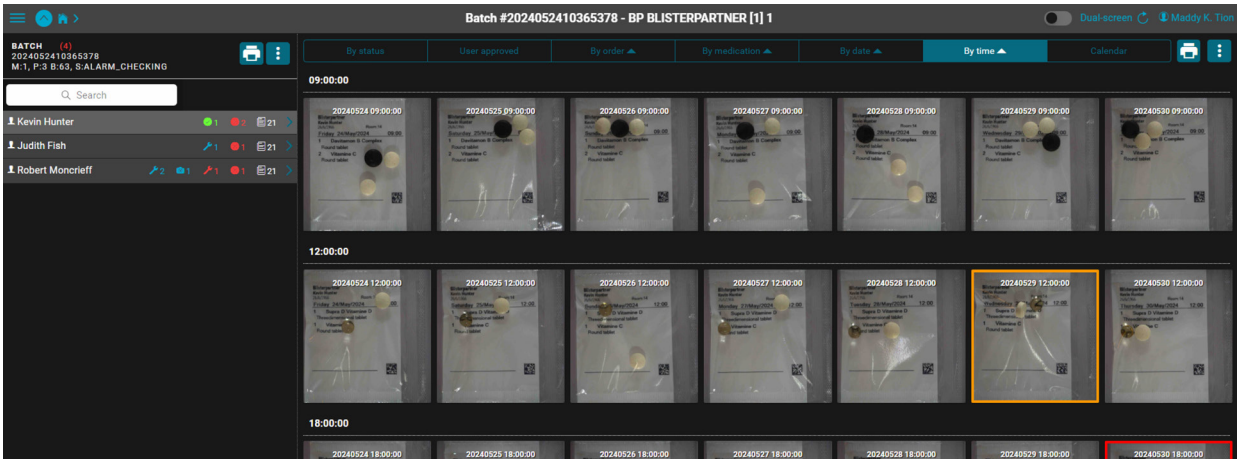


Image 62

Sort tab 'Calendar'

This tab displays all medication pouches of the selected patient in a calendar view, a grid of dates and times.

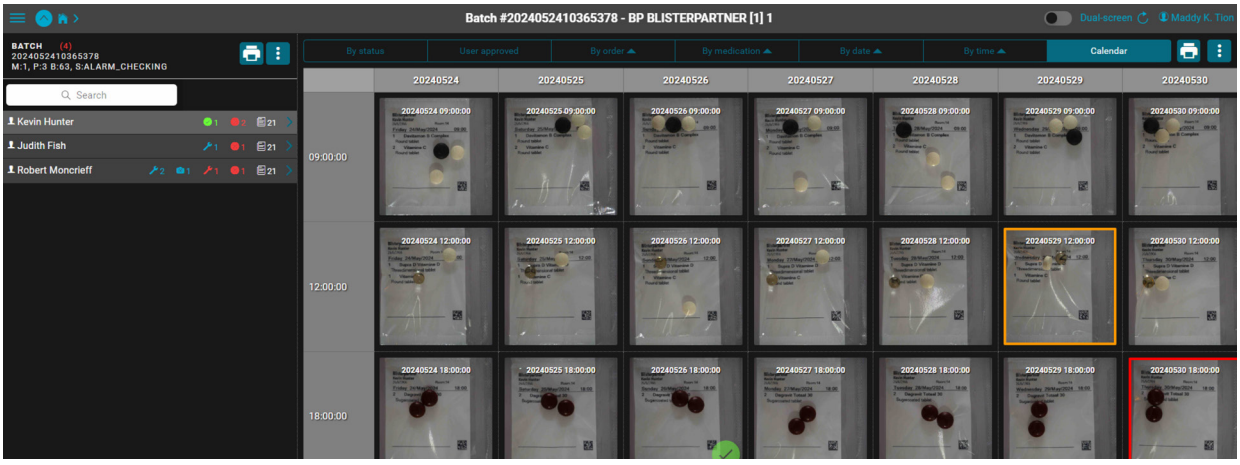


Image 63

10.3 Patient List

All patient names of a *batch* are displayed on the left side of the *batch* screen in the 'Patient List'. This list can be sorted as desired, for example, by inspection order or by last name.

The patient list is dynamic and tracks different stages and events. This is done using symbols next to the patient names and by changing the colors of the names. This way, it is immediately visible what still needs to be done for each patient and how the progress of the *batch* to be processed is going.

10.3.1 Patient Name Status Display

There are four different views:

1. **Inspected** - patient name is **white**
   Explanation: The medication pouches of this patient have been inspected by the *Pouch Inspector*.

2. **Discarded** - patient name is **struck through**
   Explanation: The medication pouches of this patient are no longer needed or all found to be unsatisfactory.

3. **Not Inspected** - patient name is **gray**
   Explanation: The medication pouches of this patient have not (yet) been inspected by the *Pouch Inspector*.

4. **Second Validation Completed** - patient name is **green**
   Explanation: The medication pouches of this patient have been inspected, evaluated, and have gone through the second validation phase.

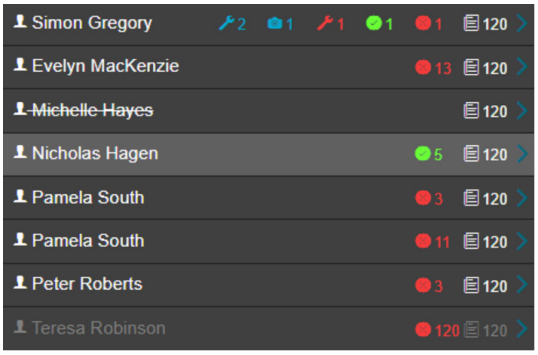


Image 64 - Patient list with different status displays and icons

Image 65 - Patient list with different status displays and icons

10.3.2. Status Icons in the Patient List

There are a total of six different status icons that change depending on the phase the medication pouches of the *batch* have undergone.

Status Icon	Meaning
	The number of alarmed medication pouches in this patient roll.
	The number of manually approved medication pouches in this patient roll.
	The repair is registered and waiting for repair.
	The repair is done and waiting for a photo of the repair.
	The repair is done, photo taken, and waiting for verification.
	The repair is done and verified.

Good to Know

A batch can only be finalized when all medication pouches for all patients have been processed (inspected, validated, possibly repaired, and verified) and all the phases included in the *workflow* have been completed.

If there are still names in the patient list that are colored gray (not inspected), the batch will remain open until the medication pouches for these patients have been inspected and processed or the patient has been discarded. Only then can the batch be finalized.

10.4 Batch Menu

The *batch* screen is divided into different sections. In Chapter 10.1, all parts are mentioned, and here, we delve deeper into the functions of the *batch menu*.

The *batch menu button* ⋮ opens the *batch menu*, which allows eight different actions to be performed, specifically for the *batch* currently visible in the *batch screen*.

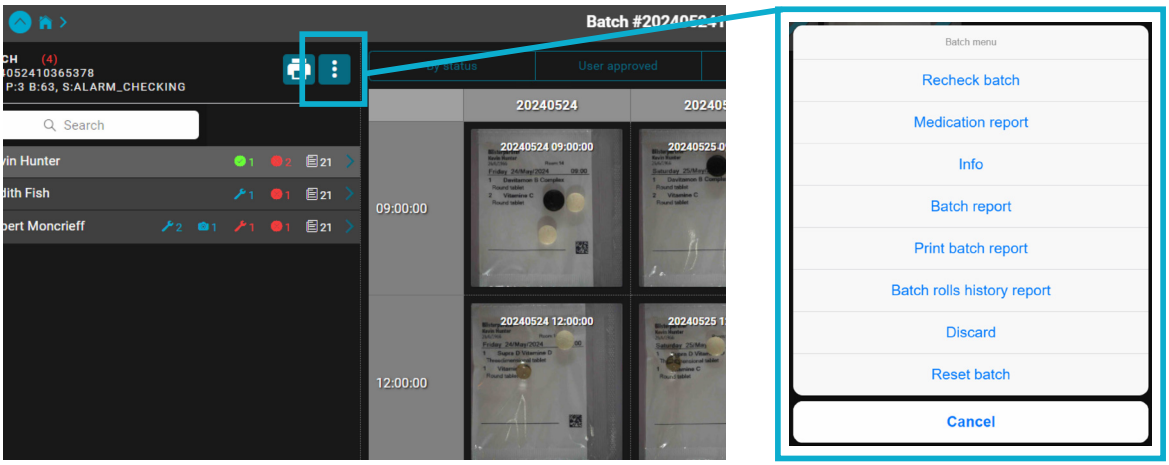


Image 66 - Batch screen with batch menu button and eight actions

The batch menu includes the following options:

1. Recheck Batch
   Reinspects all alarmed medication pouches of this *batch*. This is useful if models have been changed or added. The newly selected models are now used during this re-inspection.

2. Medication Report
   Generates a printable and exportable report detailing the medication used per patient.

3. Info
   Displays all information about this *batch* such as *batch* name, location, packaging machine, production date, and inspection date.

4. Batch Report
   Generates a printable and exportable report about this *batch* with all available information, such as which repairs were performed, by which employee, and who verified them.

5. Print Batch Report
   Prints the *batch* report.

6. Batch Roll History Report
   Generates a printable and exportable report of the processing history at the patient roll level for all patients in the respective *batch*, including machine, users, times, and per patient roll.

7. Discard (Delete)
   Removes an entire *batch*.

8. Reset Batch
   Resets all statuses of a *batch*. The photos taken by the *Pouch Inspector* remain. So when the *batch* is reset and then rechecked, all pouches are reinspected.

10.5 Colored Borders and Status Icons on Medication Pouches

The *batch screen* is divided into sections, with a large part dedicated to the medication pouches per patient. Each pouch is marked with colored borders and status icons to indicate whether there are alarms, and which phase the pouch is in.
The colors of the borders and status icons change depending on the phase the medication pouches have gone through. This allows for a quick visual assessment of what still needs to be done to make a particular *batch* ready for shipment.

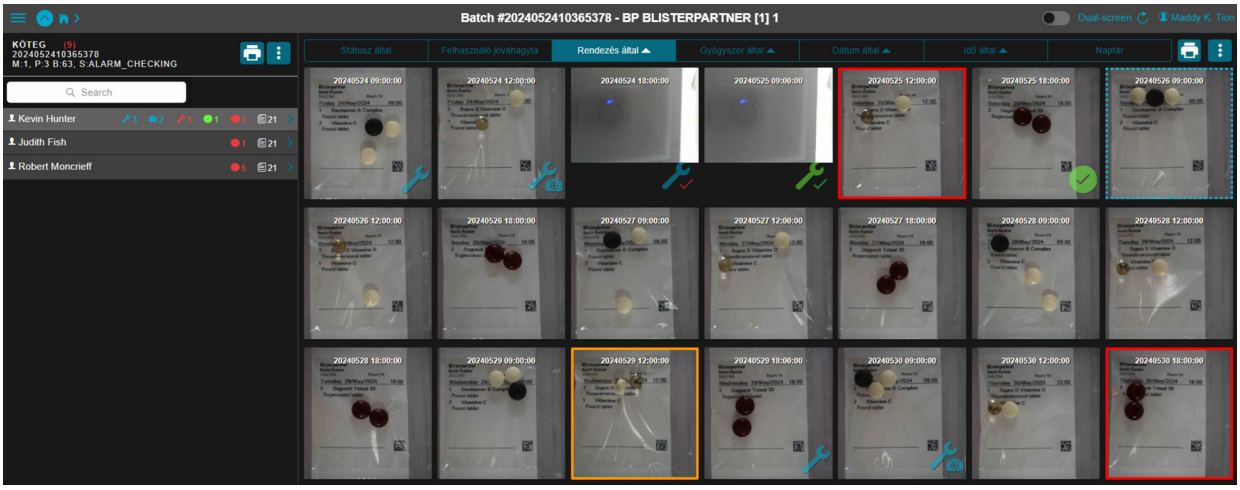


Image 67 - Batch screen with medication pouches per patient

Color Marking on Medication Pouch	Status and Meaning After Inspection by Pouch Inspector	Status Icon Behind Patient Name
	**Alarm: Red Square = High Risk** This means that an object was found to be too much or too little compared to the expected quantity, or that the pouch could not be assessed due to certain circumstances.	
	**Alarm: Orange (or Orange Tint) Square = Medium Risk** This means that fragments were found, one or more objects did not match, or there is an extra transparent object.	
Er wordt geen vierkant op het zakje getoond	**No Marking = Medication Pouch is OK** No discrepancies were found based on the inspection.	None
	**Blue Dotted Square = Last Selection** This is the last selected medication pouch.	None

Status Icon on Medication Pouch	Status and Meaning After User Review and Action	Status Icon Behind Patient Name
	**Repair Registered** The repair has been registered and is waiting for repair.	
	**Waiting for Repair Photo** Waiting for a photo of the repair.	
	**Waiting for Repair Verification** Repair has been carried out photo has been taken and is waiting for verification.	
	**Repair Verified** The repaired medication pouch has been verified by (another) user.	
	**Manually Approved** The medication pouch has been manually set to OK by a user.	

10.6 Patient Menu

The *batch* screen is divided into several sections. Chapter 10.1 outlines all the components, and here we delve deeper into the functions of the *patient menu*.

Through the *patient menu button*  , the patient menu opens, allowing six different actions specifically for the selected patient.

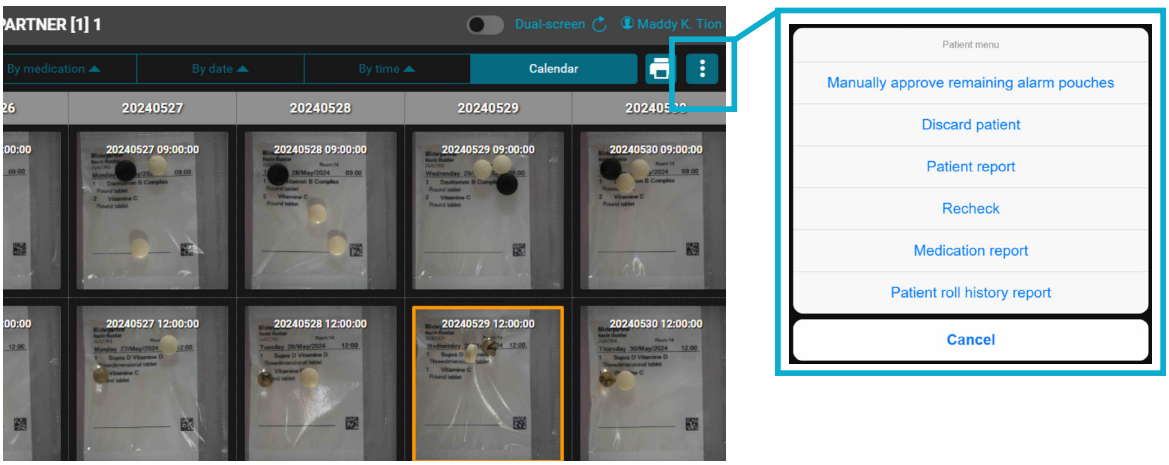


Image 68 - Batch Screen with patient menu button with six actions

The *patient menu* includes the following options:

1. Manually Approve Patient
   Sets all flagged pouches of the selected patient to OK (manual approval).

2. Discard Patient
   Removes the selected patient from the process. No further inspection or handling is required. This patient's name will then be displayed with a strikethrough in the patient list.

3. Patient Report
   Generates a printable report for the selected patient with available information on the current status of all medication pouches, including a photo for each pouch.

4. Recheck
   Performs a re-inspection on all flagged pouches of the selected patient. Pouches without alarms are not re-inspected.

5. Medication Report
   Prints a report with an overview of all medications for the selected patient.

6. Patient Roll History
   Generates a printable report for the selected patient of the processing history at the patient roll level, including machine, users, and timestamps.

10.7 Medication Pouch Screen

By clicking on a medication pouch with an alarm, the *'Medication pouch screen'* is opened. In this screen, a detailed overview of the alarm status of this medication pouch is displayed. Here, the alarm can be assessed, notes can be added, repairs can be assigned, or the medication pouch can still be approved.

To understand how alarms can be processed, see *8.6.1 Steps to process a batch in phase 1*.

The medication pouch screen is divided into different sections. Below is a description of the different parts:

Attention!

> *Only a responsible person with the proper knowledge and rights within the organization should perform the assessment and assignment of repairs.*

1 Navigation Bar:

Top Left

- *Pi Web menu icon*  to return to the menu.
- *Back icon*  to return one page.
- *Pi Web home icon*  to go back to the *Pi Web* home screen.

Top Middle

- *Medication pouch information; patient name, intake date, and time.*

Top Right

- Page refresh icon to refresh the page.
- Current user icon followed by the username. Here, the user's language preference can also be selected.

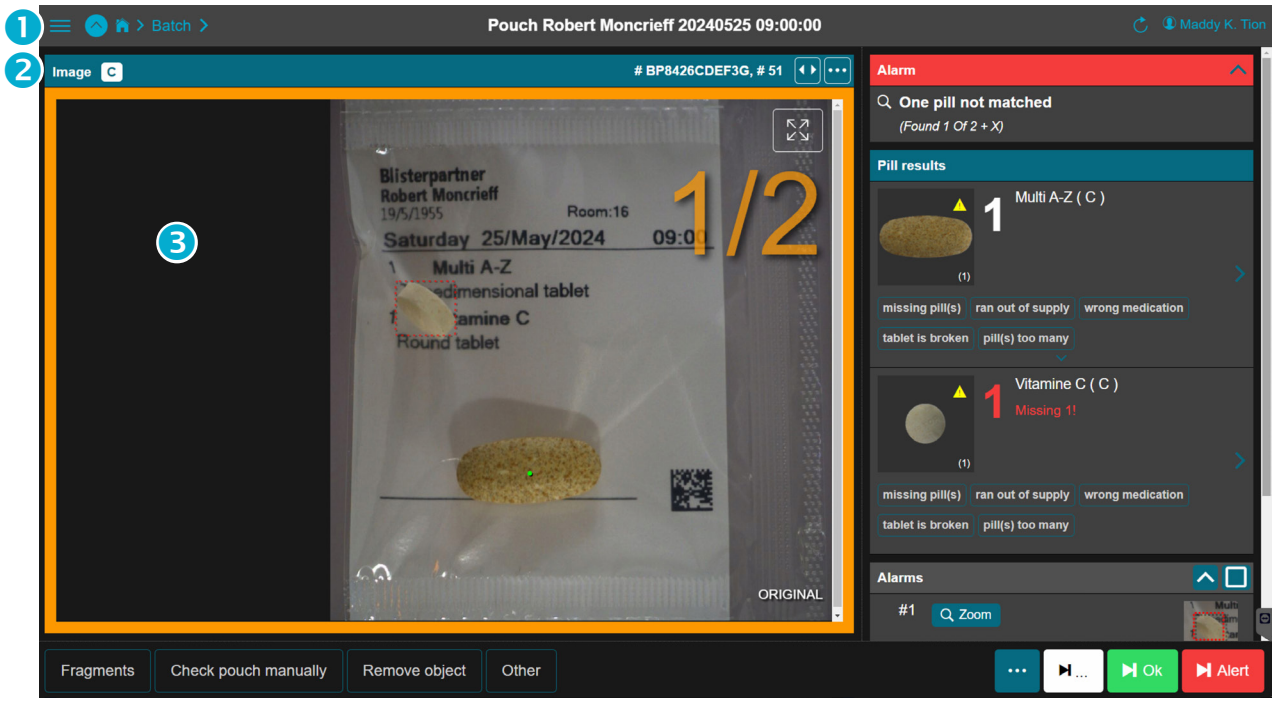


Image 69 - Medication Pouch Screen with a Medium Risk Alarm

2 Image Bar

- Batch number
- *The arrows button* mirrors the image horizontally.
- The more options button shows more zoom options.

3 Image

Left Side

- *Color marking* around the image indicating the risk level of the alarm.

  A red square = **high risk**
  This indicates that an object is found in excess or missing compared to the expected quantity, or the pouch cannot be assessed due to certain circumstances.

  An orange (shaded) square = **medium risk**
  This indicates situations like fragments found, one or more unmatched objects, or an extra transparent object.

- The *clean view button* displays a pop-up with a medication pouch photo without the markings.

- The *object number* notation indicates how many objects in the medication pouch are found and correct, and how many should be in total. For example, 1/3 means that 1 out of the 3 objects has been found and is correct. The other 2 still have an alarm or are not found.
- *Object marking*. Visual marking on the pill indicates whether the expected model for this medication pouch *matches* or does not *match*, thereby generating an alarm or not.

Object marking on medication	Meaning	Result
Green dot ●	Model matches	No alarm
Red dashed square ⬚	Model does not match	Alarm
Red dot ●	Model matches in shape but differs in color or surface and/or color	Alarm

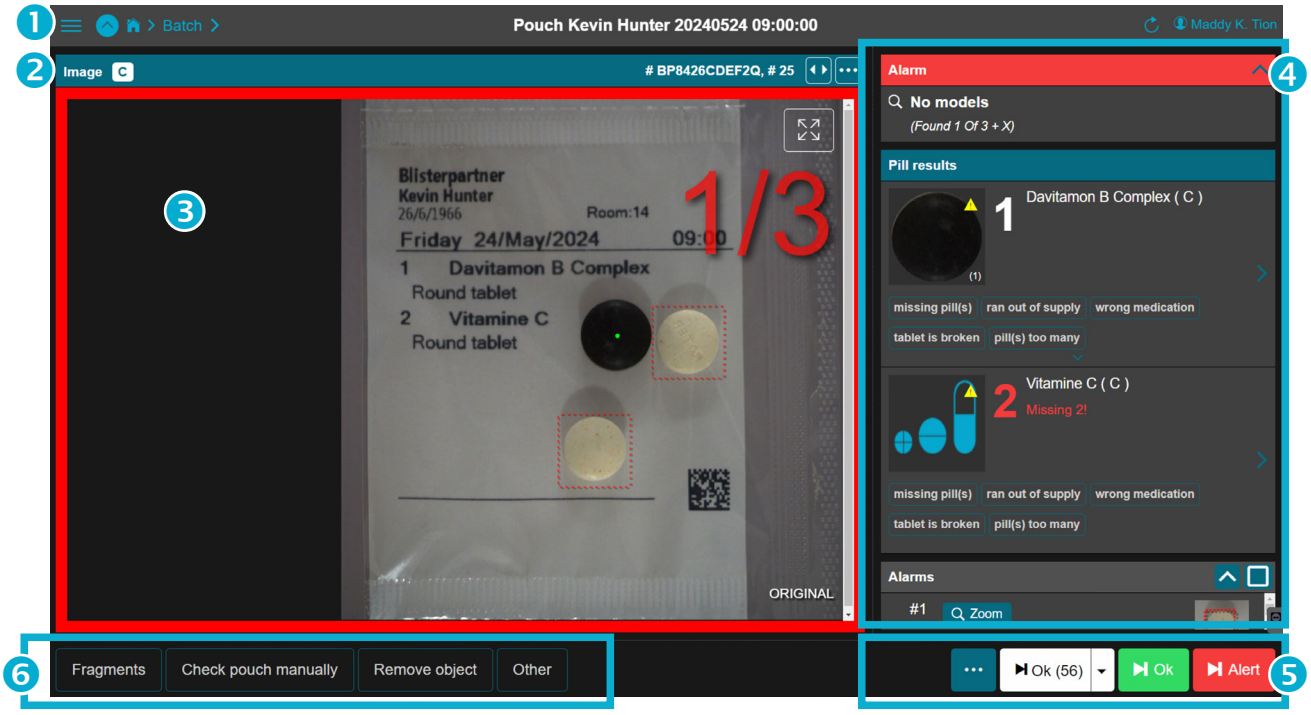


Image 70 - Medication Pouch Screen with a High-Risk Alarm

4 Alarm status column:

Right side

1st tab: Medication pouch status

Here the current status of the medication pouch is displayed. Is there an alarm or not? What caused the alarm or is this pouch still waiting for certain actions?

The following tab colors and messages can appear here, depending on which phase a medication pouch is in:

Status Name	Tab Color	Phase	Message
Alarm	Red	Phase 1	• Extra objects • One pill does not match • Missing • Too many transparent pills • Unsolvable • Multiple pills not matched • No models
Repair Assigned	Teal	Phase 5	See message under Alarm
Waiting for Repair Photo	Teal	Phase 6	See message under Alarm
Waiting for Repair Verification	Teal	Phase 7	See message under Alarm
Repair Verified	Green		See message under Alarm
Approved by User	Green		Ok
Manually Approved	Green		Ok
OK	Green		Ok

2nd tab: Pill Results (or Prescription List)

In this section, the packaging order with the *matched* models from the *Pi Web* database is shown.

Here, you can see which medication in what quantities should be in the medication pouch (based on the information from the packaging machine). And how these should look according to the *matched* model.

The medication is displayed individually. Per medication, a repair type can be assigned to process the alarm in the next phase. The default repairs per medication are as follows but can be adjusted:

- Missing pill(s)
- Ran out of supply
- Wrong medication
- Tablet is broken
- Pill(s) too many

- **Number on the model**
  The number in parentheses (number) indicates how many models of this medication are active and released in the *Pi Web* database.
- **Warning triangle on the model**
  A small yellow warning triangle ⚠ next to the model indicates that extra caution is required due to different settings. This does not mean there is an error but that care must be taken to ensure the settings are correct.

  Click on the model to view the message. The messages are displayed in the medication screen under Notifications.
  Explanations about the notifications can be found in section *10.9.4 Notifications*.
- **Missing model**
  When no model is available, this is indicated with the *Missing Model symbol*  .
  Always ensure this message is resolved and set the correct main model.

3rd tab: Alarm Detail

In this section, the alarm can be viewed in detail. Click on the image to see a highly zoomed-in view showing the specific alarm.

5 Button bar:

Bottom right

··· More options button

Through the *More options button*, various actions can be performed related to this medication pouch. Depending on the stage and phase in which the pouch is located, more or fewer options will be displayed.

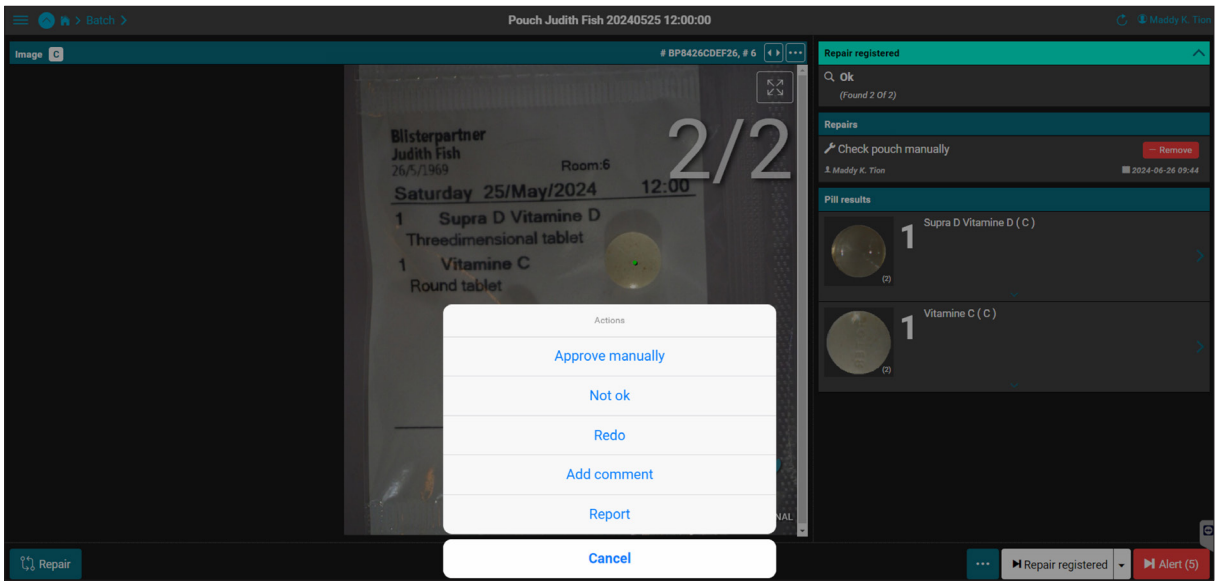


Image 71 - Medication Pouch Screen with actions

Pop-up Screen: Actions

Manually Approve: Approves the medication pouch - **no repair needed**.

If upon closer inspection no physical repair is needed, the medication pouch can be manually approved. This can happen, for example, with a blurry photo or if pills were stacked but still acceptable.

Not OK: Rejects the medication pouch - **repair needed**.

Select 'Not OK' and assign one of the displayed types of repairs. Then click 'Save Repair'. The pouch and the associated *batch* will return to an earlier phase corresponding to the selected option.

Redo: Reinspects the medication pouch.

This can be useful if a new model has been added.

Comment: Adds a comment to the medication pouch.

The comment is useful for other staff members (can be set as mandatory) and can then be displayed in the *batch* report.

Report: Generates a status report for the medication pouch.

The respective pouch is included with the current status in a printable and exportable report.

Cancel: Closes the actions pop-up screen.

Next Selection Button

Using a dropdown menu, you can choose which phase the next pouch to be displayed comes from. This allows navigation between pouches from different phases that still need actions.

The button text varies and can be:

- Ok (54)
- User Approved (5)
- Repair Registered (2)
- Waiting for Repair Photo (10)
- Waiting for Repair Verification (9)
- Alarm

OK Button

This confirms the approval of a pouch (after evaluation). The alarm is removed from the pouch, and a green check mark appears on the pouch (meaning: manually approved). No further action is needed for this pouch.

Next Alarm Button

Immediately displays the next medication pouch with an alarm.

6 Repairs per Medication Pouch:

Bottom Left

This toolbar indicates repairs for the entire pouch. The buttons can be customized as needed, and multiple repairs can be selected per pouch.

The following repairs are set by default:

- **Fragments** - fragments in the pouch
- **Check pouch manually** – manually inspect
- **Remove object** - remove object (such as pieces of aluminum foil)
- **Other** – other

10.8 Medication Screen

The Medication Screen provides a complete overview of all information regarding the respective medication. In this screen, models can be selected, model types changed, tolerances set, and models activated, deactivated, released, or blocked. Notifications are also displayed here, and new suggestions for additional models found during the inspection process are shown.

For insights on how new models can be added, see 8.6.1 *Steps to Process a Batch in Phase 1 – Action 3*.

Attention!

Suggested medication may differ from the actual medication. Therefore, only a qualified employee with the appropriate rights should review, select, and add new models.

Good to know

The *Pouch Inspector* automatically suggests new models based on medication pouches where the respective medication should be present. Manually adding a model via the *Pi Gui* inspection software is possible, but not recommended.

The Medication Screen is divided into different sections. Here is a description of the various parts:

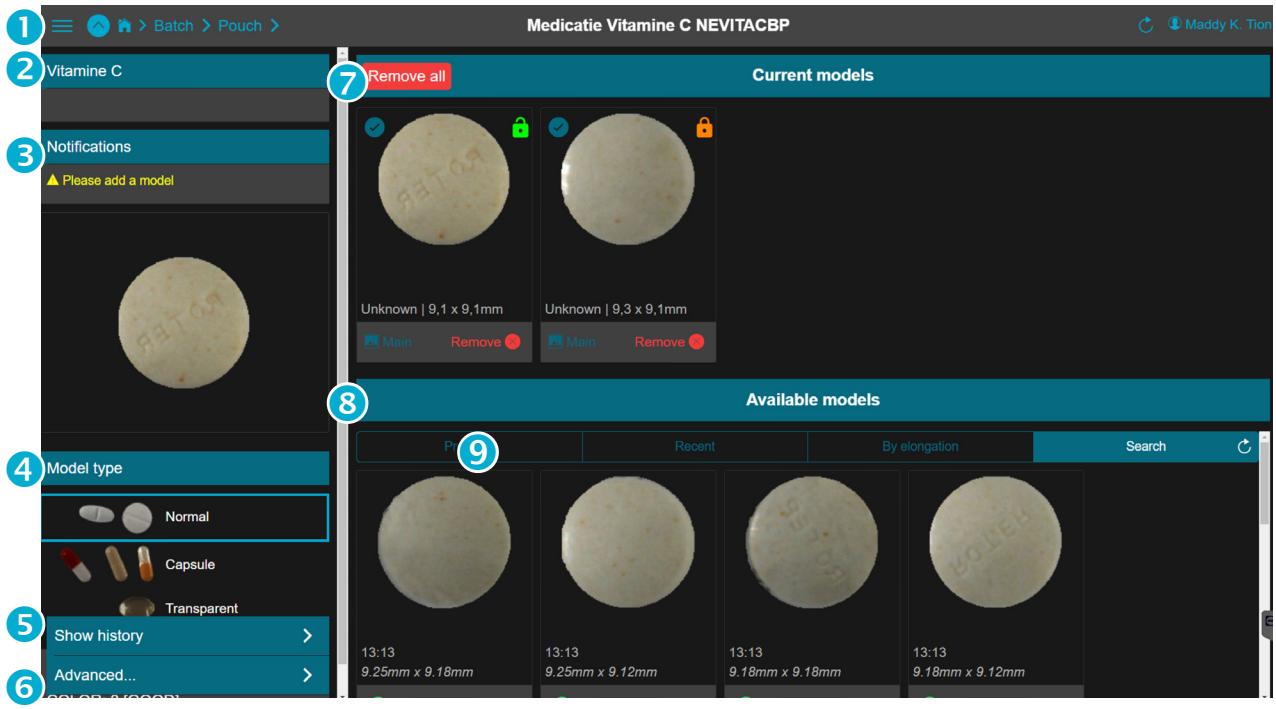


Image 72 - Medication Screen

1 Navigation Bar:

Top Left

- The *Pi Web menu icon* to return to the menu.
- The *Go Back icon* to go back one page.
- The *Pi Web* home icon to return to the *Pi Web* home screen.
- Breadcrumb, home > *batch* > pouch

Top Center

- *Medication information; medication name and medication ID* (this unique ID is provided by the packaging machine).

Top Right

- The Refresh Page icon to refresh the page.
- The Current User icon followed by the username. The user's language preference can also be selected here.

2 Medication Name:

Left Side

- Name and description of the medication. The display depends on the information provided by the packaging machine.

3 Notifications:

Left Side

In the medication pouch screen, the warning icon next to the model indicates that extra attention is required due to varying settings.

In the medication screen, notifications clearly show the specific alert. This is indicated by symbols ⚠ or ⊗ followed by the notification.

A notification does not necessarily mean there is an error, but that the settings should be carefully checked for accuracy.

The following notifications may occur:

Notification	Meaning of this Alert
Form tolerance set to Loose / Very loose ⊗	*Attention!* The inspection on form is set more leniently. Models with a greater variation in size or shape are *matched*. This may be a deliberate choice, but by default, all form tolerances are set to normal
Color tolerance set to Loose / Very loose ⊗	*Attention!* The inspection on color is set more leniently. Models with a greater variety of colors are *matched*. This may be a deliberate choice, but by default, all color tolerances are set to normal.
Main model not active ⊗	*Attention!* The main model is not active. The model visible in the medication pouch screen is not used for inspection, which can cause confusion. Always ensure this notification is resolved and set the correct main model.
Main model not released ⊗	*Attention!* The main model is not released. The model visible in the medication pouch screen is not used for inspection, which can cause confusion. Always ensure this notification is resolved and set the correct main model.
Main model invalid / Main model not found ⊗	*Attention!* The main model is invalid or not found. There are no models available, making the inspection of this medication impossible and always leading to alarms. Always ensure this notification is resolved.

Please add a model ⚠	*Attention!* Only one model is active. A minimum of two models is recommended per medication. If 'Granular' is set, multiple models are recommended (up to 6) because a granular capsule can show a lot of variation due to the loose particles.
Add other side ⚠	Recommendation: also add a model of the other side.
Round: 2 models max ⚠	*Attention!* Only one model is active. For round pills, a maximum of two models is recommended. One model per side.
Granular enabled ⚠	*Attention!* The inspection is set more leniently due to a granular capsule. This is because a granular capsule can show a lot of variation due to the loose particles.

4 Model Type:

Left Side

The linked model type used by the *Pi Gui* inspection software for this medication is shown here. There are three model types: ***Normal***, ***Capsule*** and ***Transparant***.

Ordinary tablets, capsules, and transparent pills each have unique characteristics and require specific settings for accurate inspection. Selecting the correct model type can help prevent unwanted alarms.

By default, the model type is set to 'Normal'. This is the safest option due to the least tolerant setting. If the medication is not an 'ordinary' pill but a capsule, an alarm will be generated during inspection.

Selecting the wrong model type can cause an excessive number of unwanted alarms. Therefore, it is important to ensure that the model type *matches* the actual appearance of the medication.

Model Type	Description	Number of Models to Activate
Normal 	A normal pill is usually a round tablet but can also have other shapes, such as triangular. They have a uniform, smooth texture and are often solid with identifying imprints.	2 models - Only a front and back ***Explanation***: Side models have a lower inspection rate due to the tolerance used. Start without side models. Add a side model if the false alarm rate becomes too high.

Capsule 	Capsules can be transparent or opaque, consist of two parts, vary in color and size, and contain medication in granular or powder form	2 to 3 models - Slightly different in length ***Explanation***: If selecting granular, up to 6 models can be added with variations in the amount of granules in the transparent section.
Transparent 	A transparent pill is nearly or completely see-through and contains a transparent liquid (whether colored or not). These pills can be round, elliptical, or oval and are made in one piece.	2 models ***Explanation***: If there is a high number of false alarms, 1 or 2 extra models can be added.

5 Show History:

Left Side

Displays the complete history of all models for the selected medication. This comprehensive overview includes which model types are linked, what tolerances are set, which models are activated, deactivated, released, or blocked, and when and by whom this was done. This overview is printable and exportable.

6 Advanced:

Left Side

Allows adjustments to the settings for the selected medication, such as the type of pill, form and color tolerances, and the inspection interval. Settings can be saved by clicking the green *Save button*.

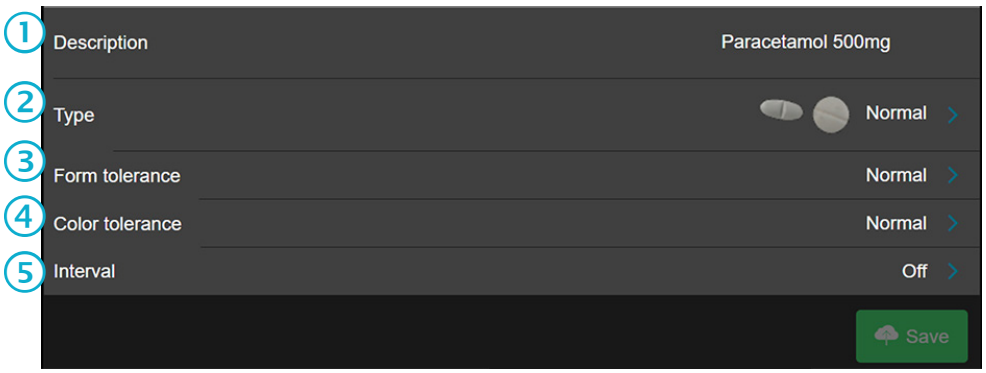


Image 73 - Medication Screen, Advanced Settings

① Description
This medication description is automatically displayed based on the packaging machine data.

② Type , see ④ Model Type
The selected model type is displayed here and can also be adjusted.

③ Form Tolerance & ④ Color Tolerance

Here, for each selected medication, the inspection tolerance level can be set.

By adjusting the tolerance level to 'Looser', the user determines that the Pouch Inspector can work with a larger deviation. This means that a model is matched with the pill in the pouch using wider margins. As a result, more pills will fall within each other's range, making the inspection less accurate.

For this reason, it is important that only certain employees have access to these settings and are allowed to change them. This can be configured via the *Pi Web menu > Settings > Users and Roles*.

Attention!

> *Adjusting tolerances carries risks. Allow only an employee with the appropriate knowledge and responsibility within the organization to perform this task.*

By default all tolerances are set to '***Normal***'. Examples of exceptions to adjust the tolerances:

Tolerance Level: ***Looser***
False alarms are very high, and updating and adjusting the models have no or insufficient effect.

Tolerance Level: ***Stricter***
When pills need to be distinguished from each other more precisely in terms of color or shape.

Form Tolerance Settings	
Setting	Expected Result
Normal	As set by default (preferred)
Looser	• Less precise *match* on form • *Attention!* Higher chance of an incorrect *match* between medication and model • Lower percentage of false alarms
Stricter	• More precise *match* on form • Higher percentage of false alarms possible

Color Tolerance Settings	
Setting	Expected Result
Normal	As set by default (preferred)
Looser	• Less precise *match* on color • *Attention!* Higher chance of an incorrect *match* between medication and model • Lower percentage of false alarms
Stricter	• More precise *match* on color • Higher percentage of false alarms possible

5 Interval

This setting applies an extra alarm to the selected medication as a random check. This can be useful for high-risk medications. Employees will be automatically alerted to visually verify this specific medication.

The interval can be set to a specific quantity of medication, for example, 1, 20, 50, 100, or 1000. This means that the Pouch Inspector will generate an alarm for every 50th pill of the respective medication (thus at 50, 100, 150, and so on). If the interval is set to 1, this medication will always receive an alarm.

7 Current Models:

Top Center

All models used or usable by the Pi Gui inspection software for inspecting this medication are displayed here.

In 'Current Models,' models can be activated, deactivated, released, or blocked. Models are only included in the inspection process if they are '*Active*' and '*Released*.'

For insight on how new models can be added, activated, deactivated, released, or blocked, see 8.6.1 *Steps to Process a Batch in Phase 1 - Action 3*.

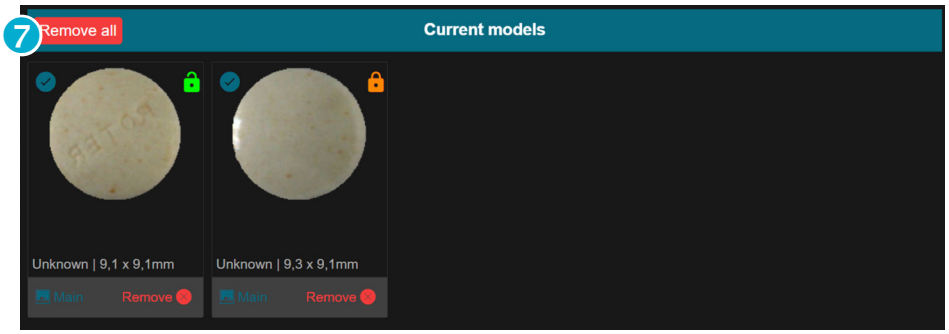


Image 74 - Medication Screen - Current Models

- Use the *Remove All button* Remove all to remove all models from 'Current Models' at once. These models will then return to 'Available Models' and will no longer be included in the inspection.

- The *model status icon* indicates that the model is active.
  By clicking the icon, it is possible to toggle the model between active and inactive.

- The *model status icon* indicates that the model is inactive.
  The image of the model also appears grayer in color.

- The *green padlock* indicates that the model is released and will be included in the inspection if the model is also active.

- The *orange padlock* indicates that the model still needs to be released.
  This model is not used in the inspection.

- Pill *information*: Round | 9.1 x 9.1 mm, is information generated by the *Pi Gui* inspection software during inspection.

- The main *model selection button* Main selects the model as the 'Main Model.'
  This means that this model and its image will appear as the example in the medication pouch screen.

- The *remove model button* Remove removes this model from 'Current Models.'
  The model will then return to 'Available Models' and will no longer be included in the inspection.

8 Available Models

Bottom Center

The *Pi Gui* inspection software looks for *matches* or discrepancies between the model and the medication in the pouch to determine if the expected pill *matches* the reference model within the set tolerances.

A model - a photo of the medication - is created by the *Pouch Inspector* and collected for each medication. What the *Pouch Inspector* has found as models is proposed in the medication screen under 'Available Models'.

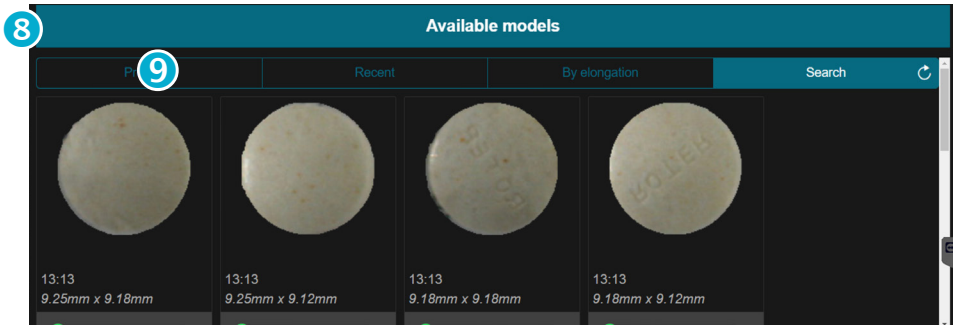


Image 75 - Medication Screen - Available Models

The employee, with the appropriate knowledge and rights within the organization, must evaluate the found model. If this model is indeed the correct medication, it can be approved and released. The model will then be included in the inspection.

Manually adding a model via the *Pi Gui* inspection software is possible, but not recommended.

For insight into how new models can be added, see Chapter 8.6.1 *Steps to Process a Batch in Phase 1 - Action 3*.

9 Sort Tabs in 'Available Models':

The sort tabs are designed to quickly select and display the best-matching results found by the Pouch Inspector.

There are four sorting categories:

- **Probable** - the most likely models
  Based on the results of the past few days, the most likely models are displayed here.
- **Recent** - recently found models
  Based on the 15 most recently found models that have been manually approved, the models are displayed here.
- **By elongation** - for elongated models
  Elliptical and elongated models that were recently found are displayed here.
- **Search** - looks further back in the database for models
  Option to search for more models found previously.

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