

# **BEETLE /iSCAN EASY Family**

**Self Checkout System**

**We would like to know  
your opinion on this publication.**

Please send us a copy of this page  
if you have any constructive criticism on:

- the contents
- the layout
- the product.

We would like to thank you in advance  
for your comments.

With kind regards,

Wincor Nixdorf International GmbH  
SyR&D SAT 10, Technische Dokumentation  
Wohlrabedamm 31  
D-13629 Berlin  
<mailto:retail.documentation@wincor-nixdorf.com>

---

**Your opinion**

**Copyright ©Wincor Nixdorf International GmbH, 2017**

The reproduction, transmission or use of this document or its contents is not permitted without express authority.  
Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Delivery subject to availability; technical modifications possible

Refer to protection notice ISO 16016

# Contents

Introduction .....	1
About this Manual .....	1
Important Notes .....	2
Note on Laser.....	4
ESD (Electrostatic Sensitive Devices).....	4
Warranty.....	5
Installation and Startup .....	5
Before turning on the System .....	5
Connecting the System .....	6
Start up .....	6
Power Connection and LAN Support.....	6
Disconnecting the System from the Mains .....	8
Components.....	9
BEETLE /iSCAN EASY with Cash Components .....	9
BEETLE /iSCAN EASY without Cash Components .....	10
Opening the BEETLE /iSCAN EASY .....	11
Cash Module iCASH 10 .....	12
Overall view.....	13
Front door open .....	14
Rear view.....	15
<b>Drum module cover open</b> .....	16
Basic Operation .....	16
Switching the device on / off .....	16
Removing / mounting the transport path cover .....	17
Removing / inserting the collection cassette .....	18
Removing it: .....	18
Inserting it .....	19
Opening / closing the drum module cover .....	20
Front drum module.....	20
Rear drum module .....	20

Putting drum modules in service position .....	21
Front drum module.....	21
Pushing it in.....	22
Rear drum module .....	22
Removing it: .....	22
Deposit .....	24
Rejected banknotes .....	26
Rules for the quality of deposited banknotes.....	26
Dispensing.....	27
Cash Paths.....	28
Overview .....	28
Deposit process.....	28
Dispensing process.....	29
Emptying the drum modules .....	30
Collection Cassette.....	30
General.....	30
Function elements and controls .....	31
<b>Collection cassette open</b> .....	32
Handling the collection cassette .....	32
Opening the collection cassette .....	32
Malfunctions .....	35
General.....	35
Troubleshooting.....	36
<b>Jam in the rear transport unit</b> .....	39
<b>Jam in the drum module</b> .....	41
<b>Jam in the reject unit</b> .....	42
Other problems .....	44
Cleaning, Service and Maintenance.....	48
Cleaning the housing.....	48
Cleaning the operator displays .....	48
Cleaning the transport paths .....	49
Cleaning the banknote reader .....	49
Coin Module iCASH 15E.....	50
Cash Module iCASH 20 .....	51
Components.....	52
Front View.....	52
Back View .....	53
Main Module external Indicators .....	54
Modules Front Indicators .....	55
Spine Indicator.....	56
Locks and Security Principle .....	57

Cash Box Handling and Arming .....	59
Loader Cassette Handling, using and Quality Banknote .....	61
Jam Clearing .....	66
In the Spine .....	66
In the Recognition Sensor .....	67
In the Recognition Sensor to Spine Interface .....	68
In the Positioner, at the Inlet .....	69
Coin Module CINEO C1010 .....	70
Printer TH230+ .....	71
Safety Instructions .....	71
Operator Panel .....	72
1 - OPEN .....	72
2 - Red ERROR LED .....	73
3 - Yellow PAPER LED .....	73
4 - Green POWER LED .....	73
5 - FEED .....	74
Print Head / Rubber Roller Cleaning .....	75
Paper Roll Exchange .....	77
Paper Near End Sensor Adjustment .....	79
Connector Variants .....	80
Energy-saving Mode .....	80
Technical Data .....	81
Paper Specification .....	82
Print Area .....	83
BEETLE /M-II plus (G41 Motherboard) .....	84
BEETLE M-III .....	85
Scanner .....	86
Cleaning the Bin .....	86
Scanner Maintenance .....	88
Scanning Items .....	88
Proper Scanning Technique .....	88
Scanner (BEETLE /iSCAN EASY Hybrid) .....	89
Cleaning the Bin .....	89
BA92/93 (with resistive Touch Screen) .....	90
General .....	90
Operator Panel .....	91
USB Interface .....	91
<b>On Screen Display (OSD)</b> .....	91
Menu .....	91
LED .....	91
ON/OFF Button .....	91

Construction of the resistive Touch Screen .....	92
How to Operate .....	92
Cleaning Instructions .....	92
Appendix.....	93
Technical Data .....	94
Environmental Requirements .....	98
Cleaning Instructions .....	99
Maintenance and Service.....	99
Cleaning Materials: Order Numbers .....	100
Certificates .....	101
CE Marking .....	101
FCC-Class A Declaration .....	101
Recycling the BEETLE /iSCAN EASY .....	102



## Introduction

The BEETLE /iSCAN EASY is a terminal that offers a customer to handle the purchase by scanning, bagging and paying the items on his own. In case of problems an attendant is available for quick support.

BEETLE /iSCAN EASY offers the following main functions:

- Record function - records items, the customer wants to buy
- Control function - secures the recording of all items
- Payment function - payment may be effected by banking cards, customer cards and accounts.

## About this Manual



This symbol is used to mark important information in this manual.



Text following this symbol should be given special attention in order to avoid damage and injury.

## Important Notes

Appliances supplied by Wincor Nixdorf International GmbH comply with the respective safety regulations for data-processing installations and information technology installations, including electrical office equipment for use within an office environment.



Whenever work of any kind is done on the device, as well as when data cables are plugged and unplugged, the device must be completely disconnected from the line voltage.



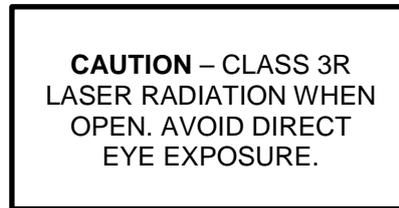
After maintenance and repair work on the cash module the module must be completely pushed into the BEETLE /iSCAN EASY and the front door must be closed before switching on the device.

- Keep this manual safe and at hand for ready reference.
- Appliances may only be repaired by authorized technicians.
- Unauthorized opening of the housing or inexperienced repairs can result not only in considerable personal danger, but will also invalidate your warranty and liability protection.
- Always consult the enclosed documentation before doing any work with this appliance.
- If this device is brought from a cold environment into a heated place of business, condensation may occur. Before operation, the device must be completely dry. Therefore, an acclimatization period of at least two hours must be adhered to.
- The sockets of the house installation must be easily accessible.
- Always lay the supply leads and cables in such a way that they cannot be stepped on or tripped over.
- Only touch green marked handles and knobs for moving parts.
- Exchange damaged cables immediately.
- In order to completely disconnect the device from the power source, turn the device off and use the separator in the fuse box\building installation.
- Make sure that no objects (such as paper clips) can reach the interior of the device, since electrical shocks or short-circuits could result.
- To avoid overheating of the system ensure that the BEETLE /iSCAN EASY receives adequate ventilation.
- During an electrical storm, data cables should not be plugged in or unplugged.
- Keep the device away from airstreams/ventilation, vibrations, dust, humidity and heat.
- Ensure that used parts are disposed of in *an environmentally friendly manner*.

- In case of an accident (such as a damaged housing, entry of liquids or foreign objects), switch the device off and use the separator to completely remove the device from power.
- BEETLE /iSCAN EASY is the result of state-of-the-art technology. Therefore, please also ensure that the BEETLE /iSCAN EASY is operated under modern building and technical conditions in order to ensure flawless and efficient operation. The appliance and other information technology hardware should only be connected to electrical supply networks with a separate protective earth wire (PE). This type of electrical supply network is referred to as a TN-S network. Do not use PEN conductors. Also follow the recommendations set forth in DIN VDE 0100 Part 540, Appendix C2 as well as EN50174-2, §5.4.3., the National Electrical Code ANSI/NFPA 70-2005 and the Canadian Electrical Code, Part I, CSA C22.1-02.
- When working on the cutter of the printer, the device must be turned off.
- Always keep the ventilation slots free of obstruction to ensure adequate air circulation and avoid overheating.
- Transport the appliance only in its original packaging (to protect it against knocks and bumps).
- Batteries must be disposed of according to local regulations on the disposal of special waste.
- **Connecting Peripherals**  
Use only shielded cables when connecting devices to the system to ensure compliance with international Rules and Regulations for radiated emission as well as to achieve a high immunity against external disturbances.

## Note on Laser

The barcode readers contain a light-emitting diode (LED), classified according to LASER CLASS 3R:



## ESD (Electrostatic Sensitive Devices)



Electrostatic sensitive devices (ESD) *may* be marked with this sticker.

When you handle components fitted with ESDs, you must observe the following points under all circumstances:

- Unplug the power before inserting or removing components containing ESDs.
- While working with ESDs you must discharge yourself by using an ESD wrist strap or grounding cable to connect yourself at all times to the earth connector of power socket or a grounded object.
- Place all components containing ESDs on a static-safe base.
- The equipment and tools you use must be free of static charges.
- Always hold boards with ESDs by their edges. Do not touch the components.
- Never touch pins or conductors on boards fitted with ESDs.

## Warranty

Wincor Nixdorf generally guarantees a warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all damages which occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings

will not be covered by the warranty.

For further information on the stipulation consult your contract.

All parts of the product which are subject to wear and tear are not included in the warranty engagement. For detailed warranty arrangements please consult your contract documents.

## Installation and Startup



Be certain to follow the safety guidelines in the chapter »Important Notes«.

### Before turning on the System

Unpack the parts and make sure that every item at the packing list is included.

If you find

- shipping damage **or**
- discrepancies between the contents of the package and the packing list **or**
- defects,

please inform your vendor or Wincor Nixdorf International GmbH (WN) sales location immediately. Also provide the packing list and the packing list item and serial numbers for the effected unit.

Please find the Serial Number at the side or at the back of the housing.



For further information please read the installation manual.

## Connecting the System

### Start up

The power supply system must be equipped with separately guided protective earth conductor (PE). This kind of electricity system is known as TN-S network. Do not use PEN conductors!

Ratings of BEETLE /iSCAN EASY:

100-120 V / 200 V – 240 V

2.0 A / 1.0 A

50-60 Hz



Caution! Check that the set nominal voltage of the appliance corresponds to the local mains voltage.

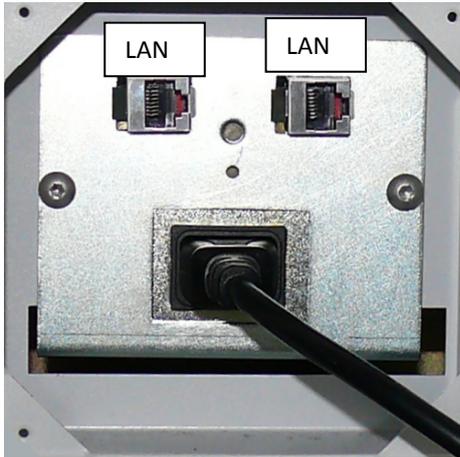
### Power Connection and LAN Support

The BEETLE /iSCAN EASY supports Ethernet 10/100 BASE-T local area network (LAN) communication protocol. The BEETLE /iSCAN EASY terminal provides a female RJ-45 connection port for the LAN. A 6-foot LAN cable is provided with the system.

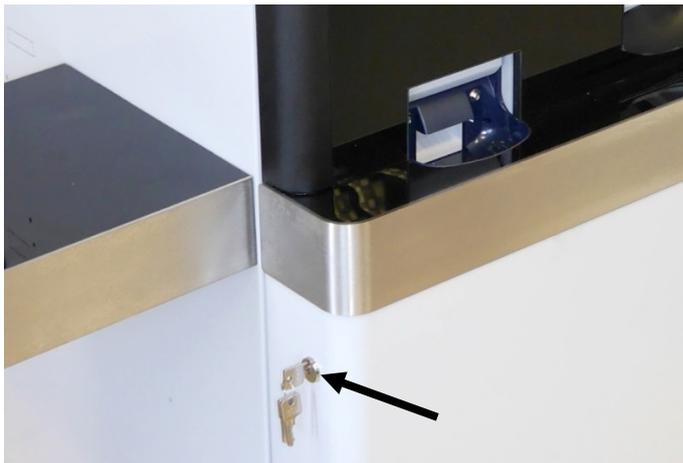
Remove two screws at the back of the device (see arrows).



Plug in the power und the LAN cable.



Unlock and open the front door of the BEETLE /iSCAN EASY.

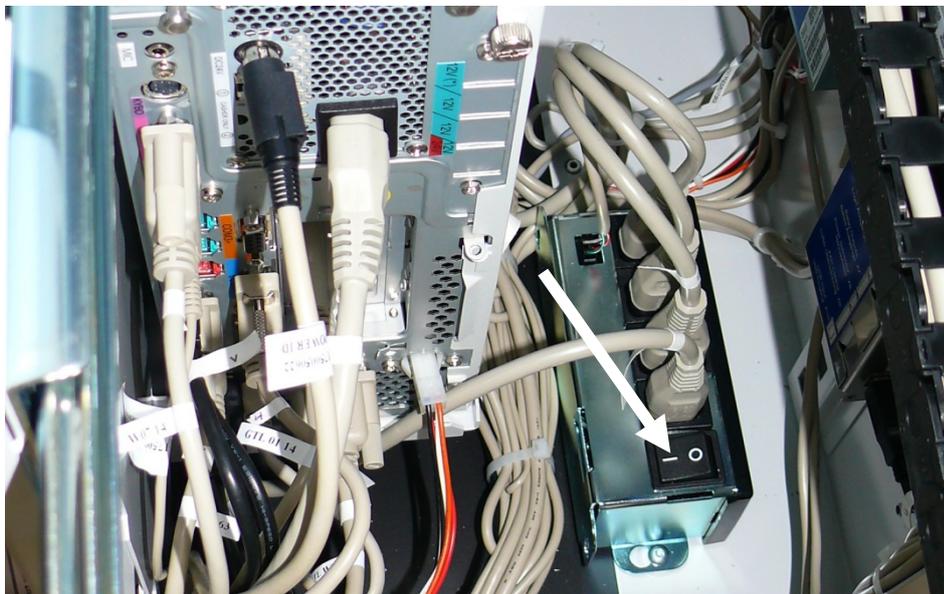


Pull out the cash module at the left side.



Check if all power plugs are well installed in the power distributor.

Start up the system by pressing the button to position 1 (see arrow).

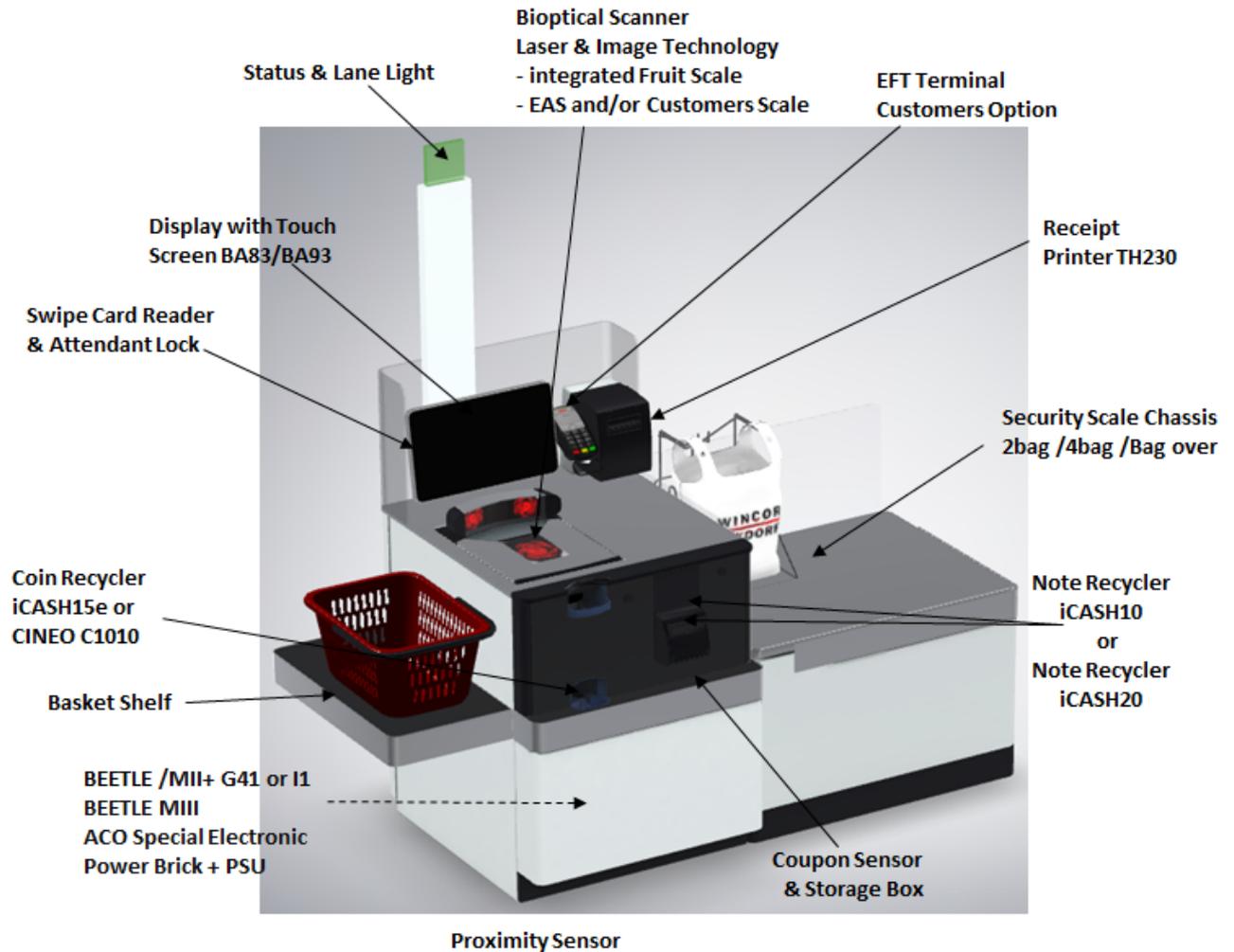


## Disconnecting the System from the Mains

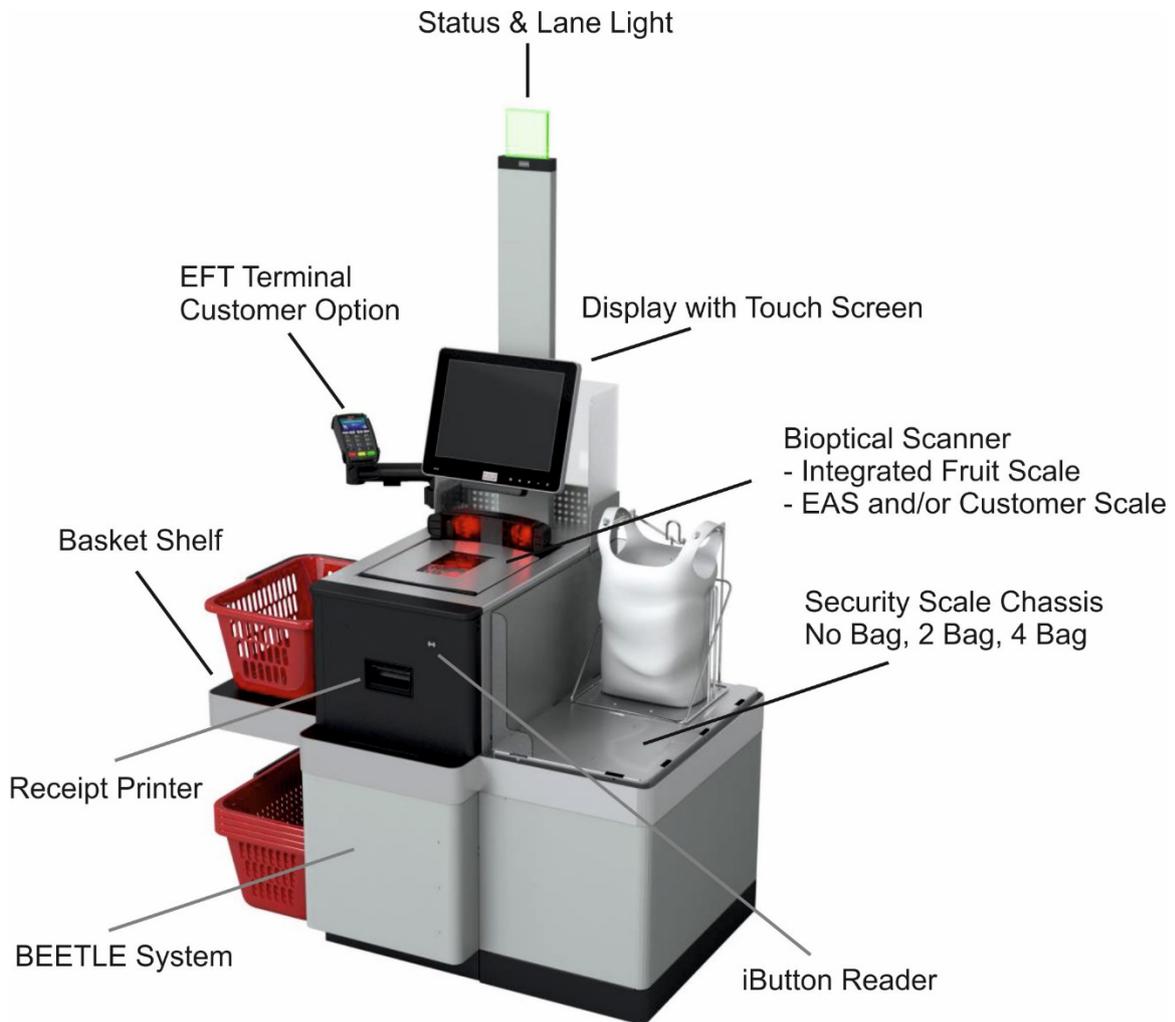
- At first shut down the system by the software application.
- Pull out the cash module at the left side. Disconnect the system by pressing the button in position 0 (see picture above).

# Components

## BEETLE /iSCAN EASY with Cash Components



## BEETLE /iSCAN EASY without Cash Components



## Opening the BEETLE /iSCAN EASY

Unlock and open the front door of the BEETLE /iSCAN EASY.



## Cash Module iCASH 10

The iCASH 10 is a compact automated teller safe which is designed as an integrated countertop model for cash deposits and dispenses.

The closed cash cycle means that deposited banknotes are made available again for subsequent transactions.

This closed cash cycle is made possible by using three drum modules, each with a maximum capacity of 250 banknotes.

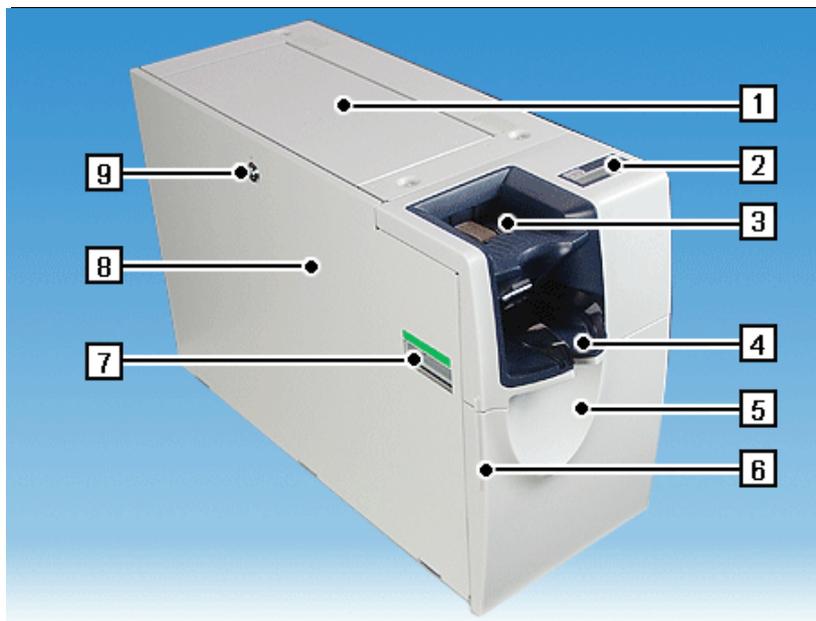
iCASH 10 also has a collection cassette with a maximum capacity of 450 banknotes. The collection cassette accommodates those banknotes which cannot be deposited in a drum module.

Switch off the device. Unlock the BEETLE /iSCAN EASY and open the front door.

Grasp the iCASH 10 and pull it out completely.

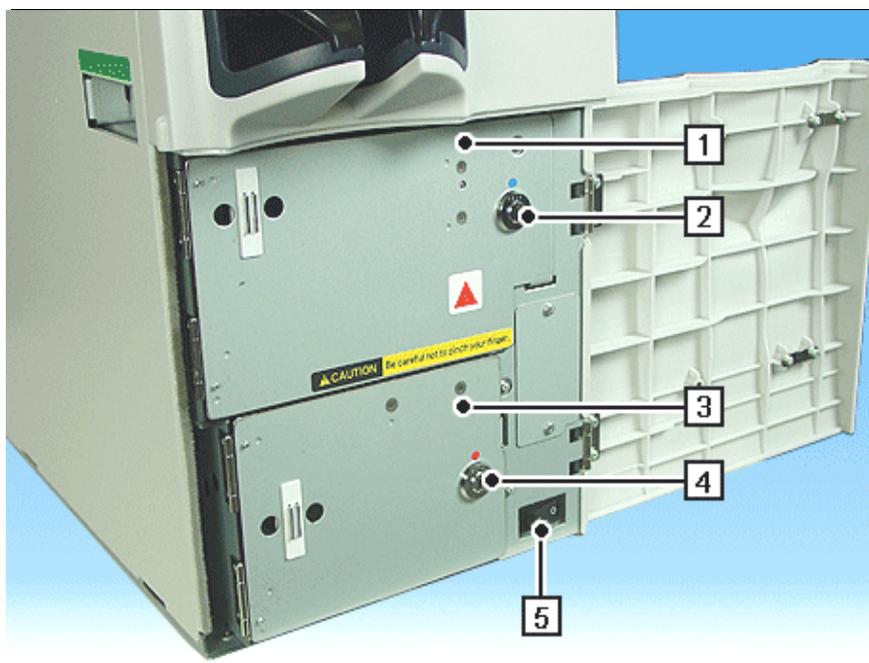


### Overall view



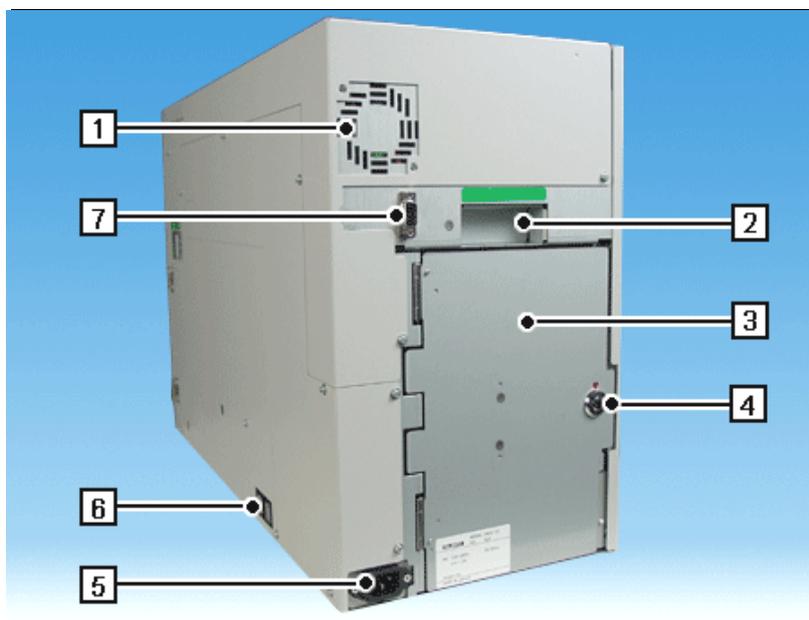
1	Upper cover	6	Gripping edge of front door
2	Operator display	7	Handle
3	Banknote input	8	Transport path cover
4	Banknote removal area	9	Lock of transport path cover
5	Front door		

### Front door open



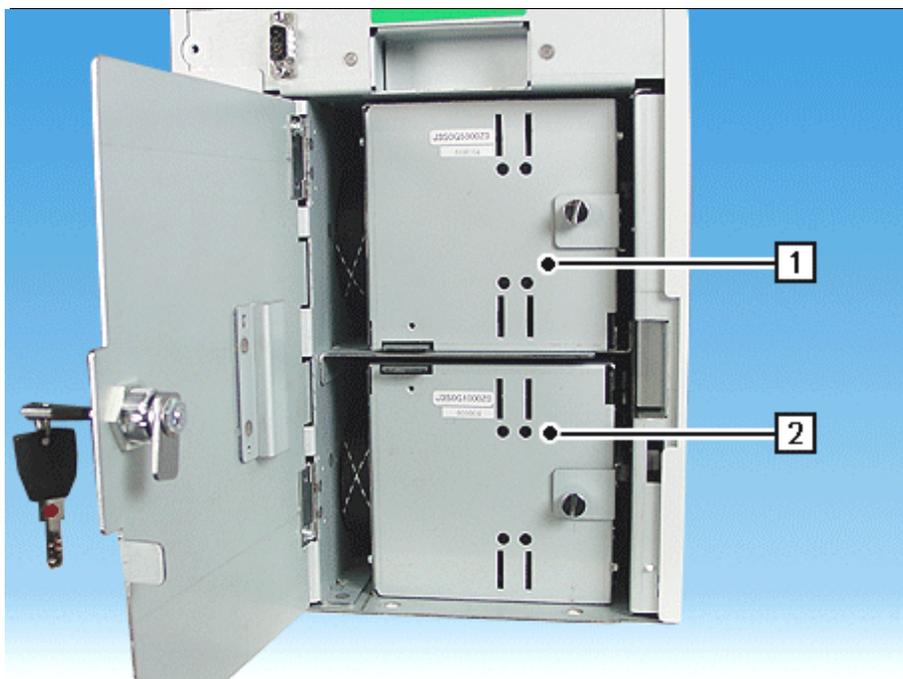
1	Collection cassette cover	4	Lock of drum module cover
2	Lock of collection cassette cover	5	Power switch
3	Drum module cover		

### Rear view



1	Vents	5	Power supply
2	Handle	6	Fuses
3	Drum module cover	7	Data communication connector
4	Lock of drum module cover		

### Drum module cover open

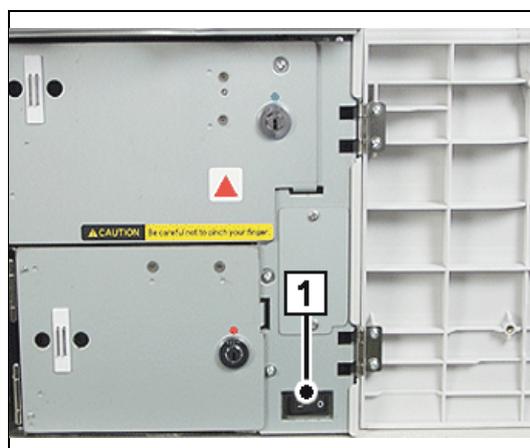


1	Drum module no. 1	2	Drum module no. 2
---	-------------------	---	-------------------

### Basic Operation

 Switch the device off before you work at the drum modules or the transport paths.

### Switching the device on / off



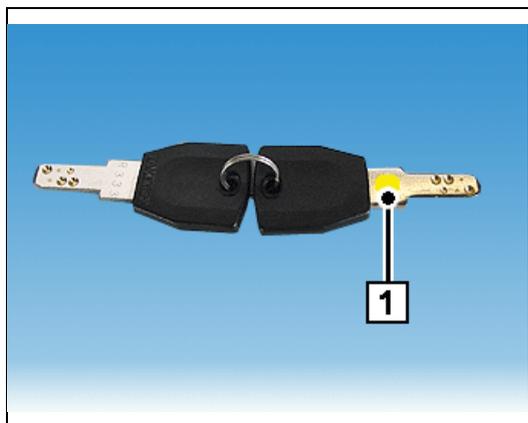
#### Switching on:

Push the power switch (1) in position 'I' and swing the front door shut.

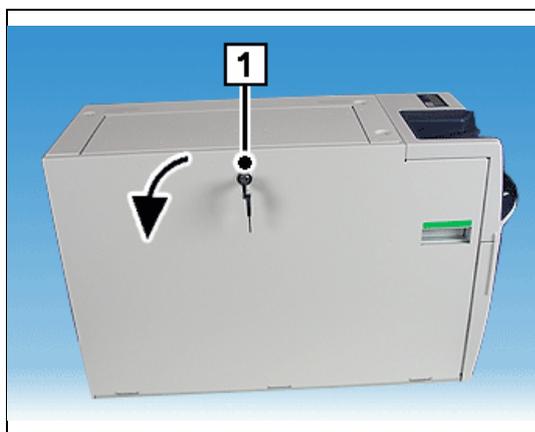
#### Switching off:

Push the power switch (1) in position '0' and swing the front door shut.

## Removing / mounting the transport path cover

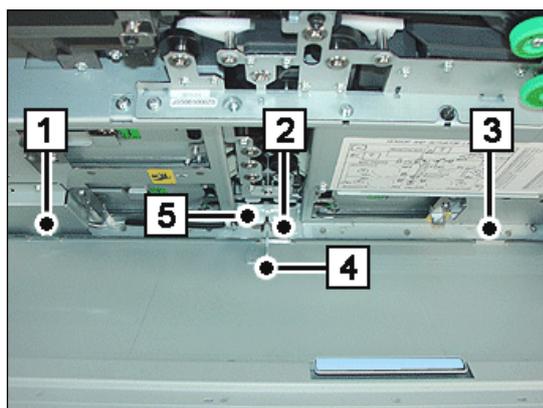


The key for the transport path cover is marked yellow (1).



### Removing it:

Insert the key into the lock (1) of the transport path cover and turn it to the right as far as possible. Swing the cover open as far as possible (in the direction of the arrow).



### Mounting it:

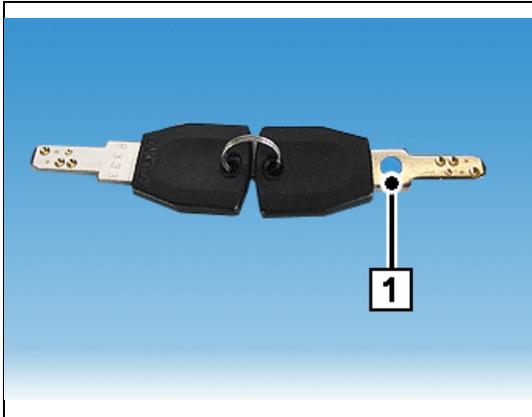
**i** When mounting the panel covering the transport path make sure that the tabs fit in the corresponding cutouts (1) to (3).

In addition make sure that the bracket (4) must engage in slot (5).

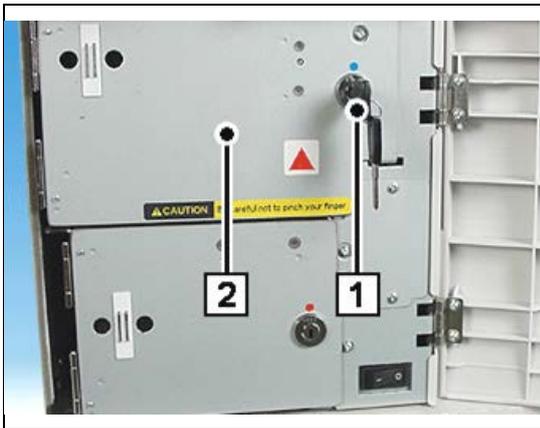
Insert the key into the lock of the transport path cover, turn it to the left as far as possible and remove it from the lock.

## Removing / inserting the collection cassette

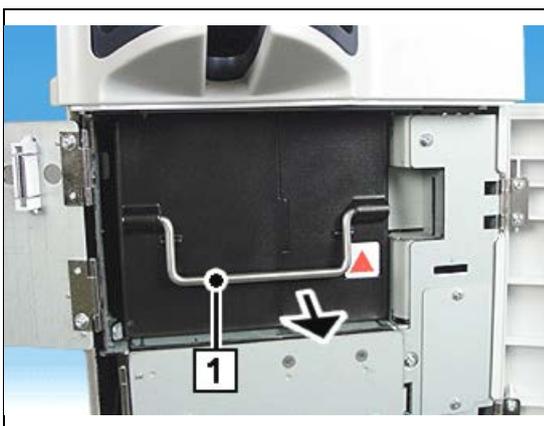
### Removing it:



The key for the collection cassette cover is marked blue (1).



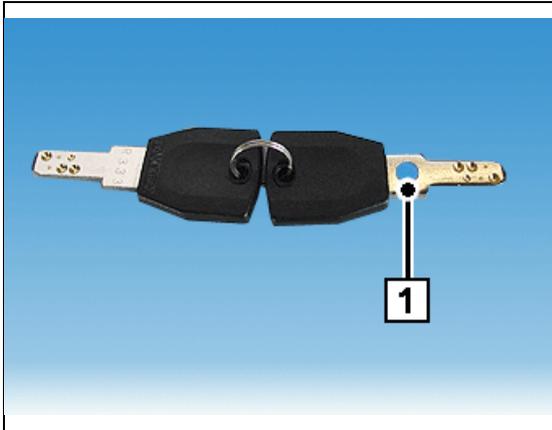
Insert the key into the lock (1) of the collection cassette cover and turn it to the right as far as possible. Swing the cover (2) of the collection cassette open as far as possible.



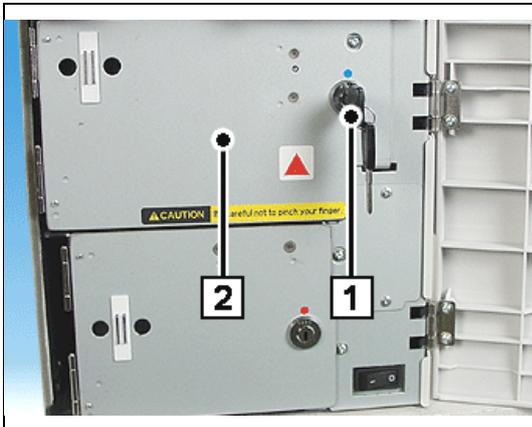
Turn the cassette handle (1) up and pull out the cassette by the handle in the direction of the arrow.

## Inserting it

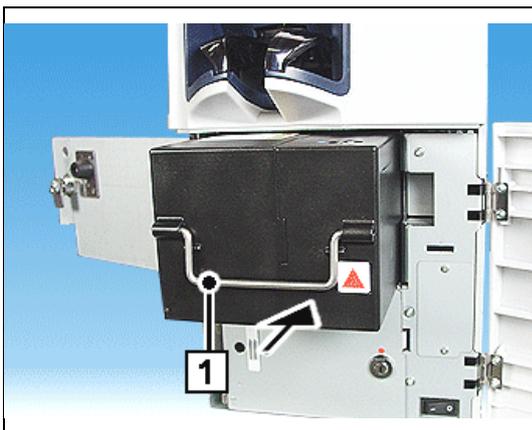
Open the front door (see section "Opening / closing the front door").



The key for the collection cassette cover is marked blue (1).

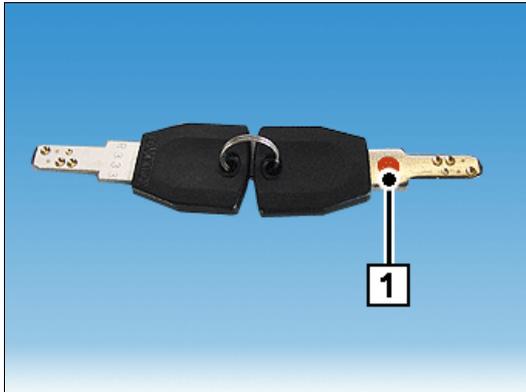


Insert the key into the lock (1) of the collection cassette cover and turn it to the right as far as possible. Swing the cover (2) of the collection cassette open as far as possible.



Turn the cassette handle (1) up and push the cassette by the handle in the direction of the arrow in the device as far as possible.

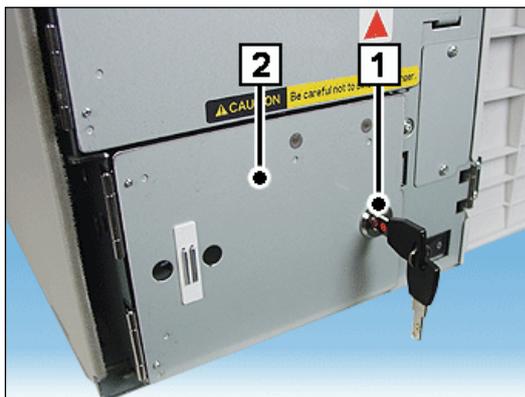
## Opening / closing the drum module cover



The key for the drum module cover is marked red (1).

### Front drum module

Open the front door (see section "Opening / closing the front door").



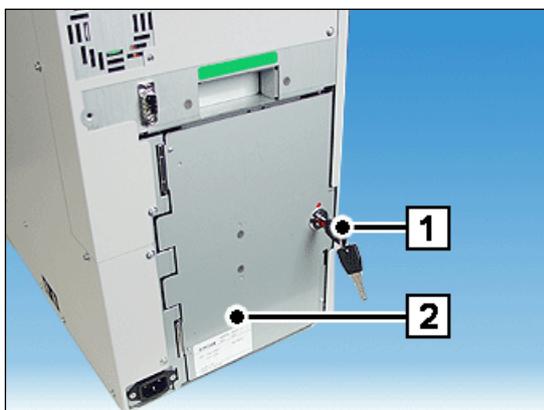
#### Opening it:

Insert the key into the lock (1) of the front drum module cover and turn it to the right as far as possible. Swing the cover (2) of the drum module open as far as possible.

#### Closing it:

Swing the cover of the drum module completely shut. Then turn the key to the left as far as possible and pull it from the lock.

### Rear drum module



#### Opening it:

Insert the key into the lock (1) of the rear drum module cover and turn it to the right as far as possible. Swing the cover (2) of the drum module open as far as possible.

#### Closing it:

Swing the cover of the drum module completely shut. Then turn the key to the left as far as possible and pull it from the lock.

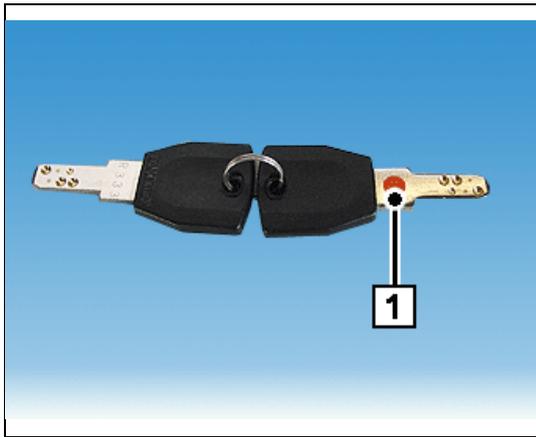
## Putting drum modules in service position



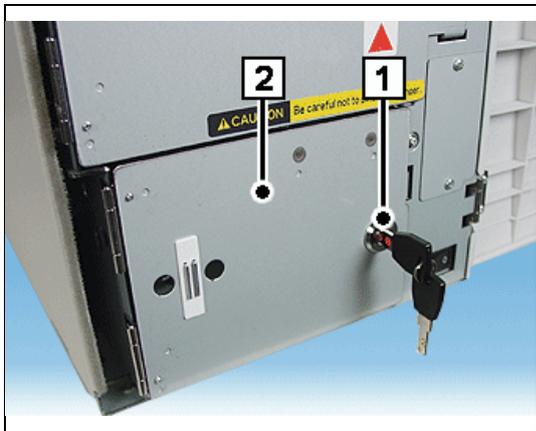
Switch the device off at the power switch before you work at the drum module (see section "Switching the device on / off").

### Front drum module

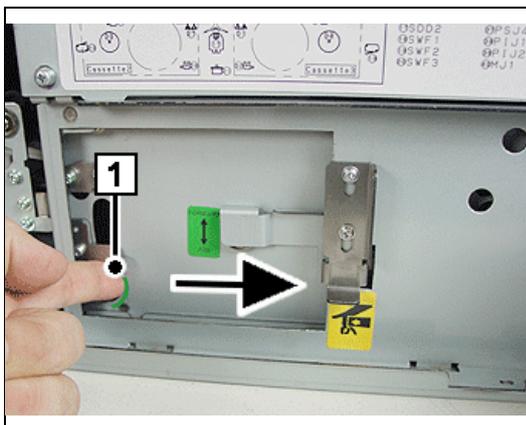
Open the front door (see section "Opening / closing the front door") and remove the panel covering the transport path (see section "Removing / mounting the transport path cover").



The key for the drum module cover is marked red (1).

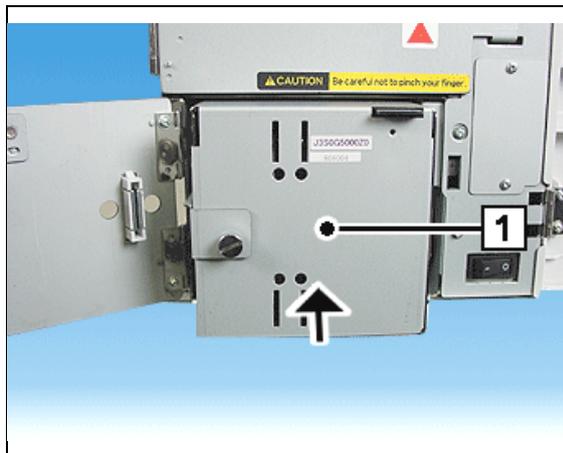


Insert the key in the lock (1) of the front drum module cover and turn it to the right as far as possible. Swing the cover (2) of the drum module open as far as possible.

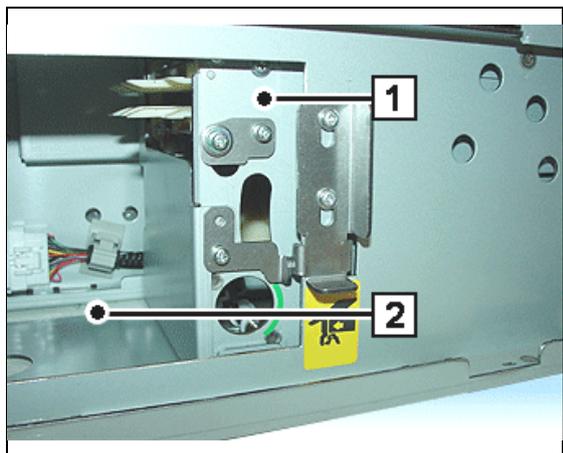


Push a finger through the opening (1) and push the drum module in as far as possible as indicated by the arrow.

## Pushing it in



Push the drum module (1) in the direction of the arrow in the device as far as possible.



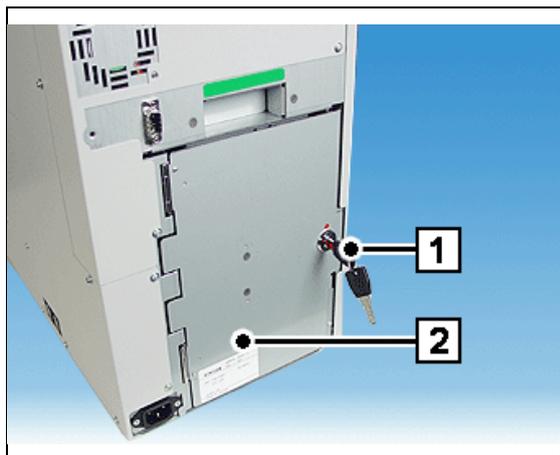
⚠ When pushing it in make sure that your hand or fingers are not between the drum module (1) and the mount (2). Danger of injury!

Push the drum module (1) in the device as far as possible, lock the drum module and transport path covers.

## Rear drum module

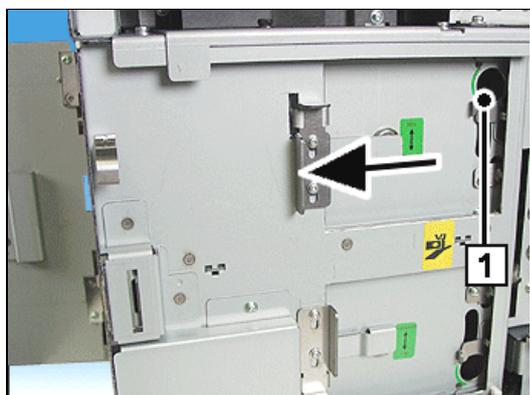
### Removing it:

Remove the transport path cover (see section "Removing / mounting the transport path cover").



Insert the key into the lock (1) of the rear drum module cover and turn it to the right as far as possible. Swing the cover (2) of the drum module open as far as possible.

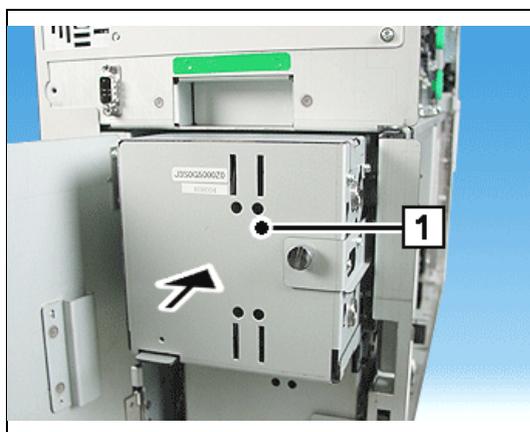
**i** The two rear drum modules are put in service position in the same way. Therefore, the procedure is described for the upper drum module.



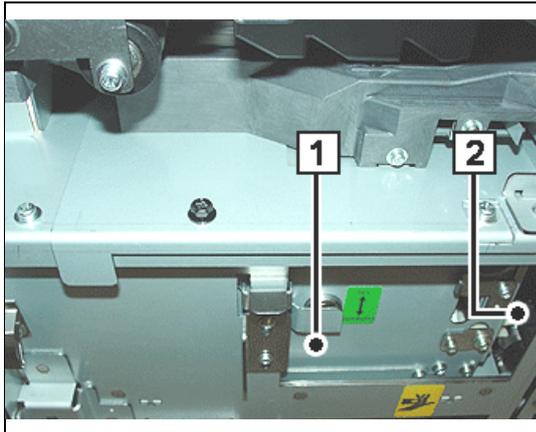
Push a finger through the opening (1) and push the drum module in as far as possible as indicated by the arrow.

**Pushing it in**

**i** The two rear drum modules are inserted in the same way. Therefore, the procedure is described for the upper drum module.



Push the drum module (1) in the direction of the arrow in the device as far as possible.



**!** When pushing it in make sure that your hand or fingers are not between the drum module (1) and the mount (2). Danger of injury!

Push the drum module (1) in the device as far as possible, lock the drum module and transport path covers.

## Deposit

### Inserting a bundle of banknotes



Place the banknotes in the banknote input tray (1) in such a way ...



... that they touch the side panel on the left side (2) and that their front edges are right on top of each other (3) or ...



... that they touch the side panel on the right side (4) and that their front edges are right on top of each other (5).

You should also read the recommendations in the section "Rules for the quality of deposited banknotes".

- i** You can insert the bundle of up to 30 mixed banknotes with the picture side in any position.  
For best possible processing align the banknotes so that all front edges are right on top of each other.

With the shutter open, lay the banknote bundle in the input tray as far back as possible.

## Rejected banknotes



Notes that show irregularities during feed and notes that are not recognized (potential forgeries) are routed to the reject/cash output tray (1) without the deposit process being interrupted.

From there the banknotes can be retrieved.

## Rules for the quality of deposited banknotes

To guarantee maximum device availability and to prevent banknote jams in the deposit area, the quality of the deposited cash should be checked.

The device permits banknotes with a certain amount of damage to be processed. If this amount is exceeded, the device cannot process the banknotes correctly. A status message is generated and the transaction interrupted until the operator has eliminated the problem.

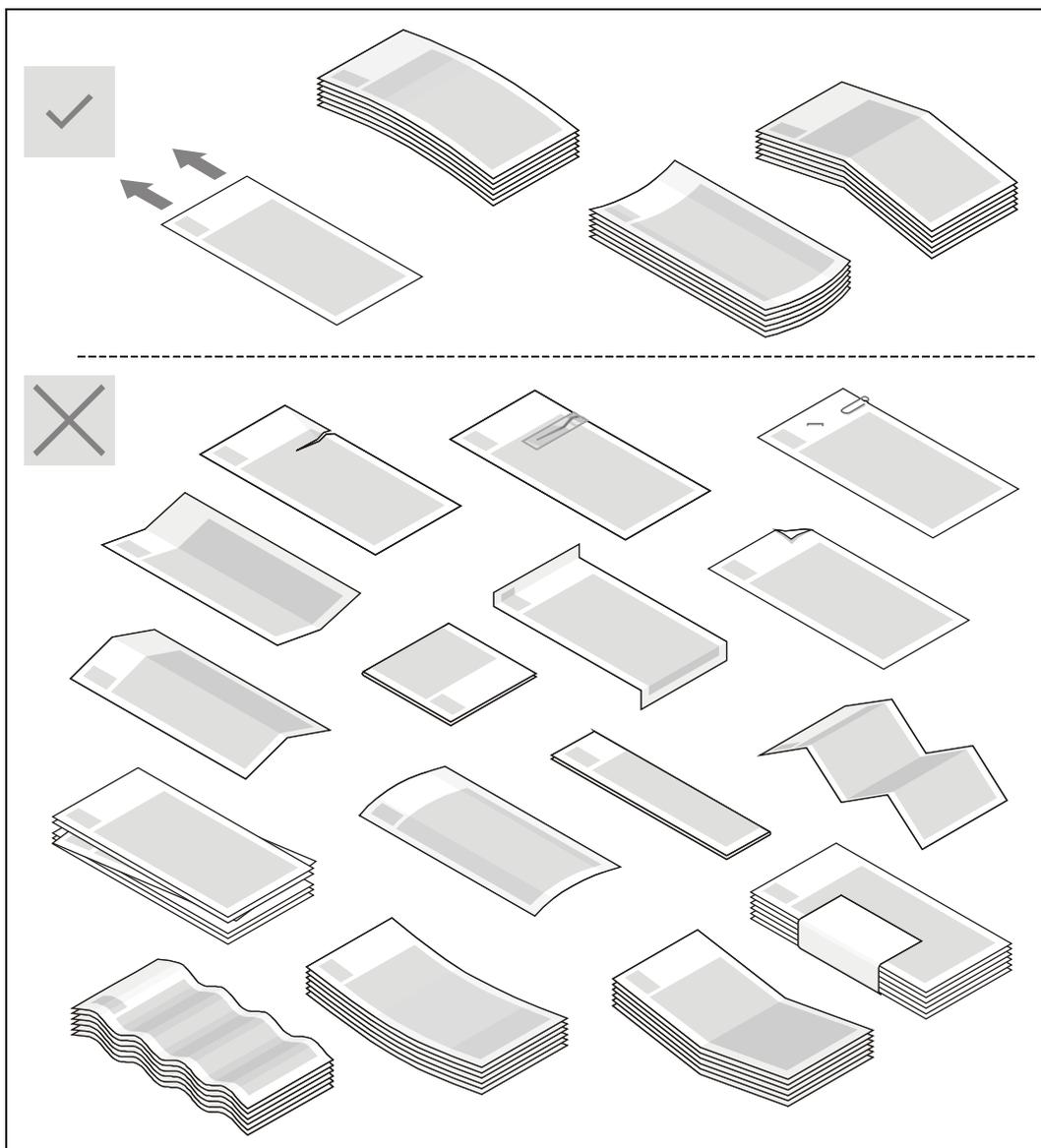
To avoid such situations, the following simple safety precautions should be complied with (see also the following figure):

- Remove any dog-ears.
- Remove very old, very damaged banknotes and those with many folds.
- Remove banknotes that are folded round other banknotes (e.g. to form packs of 10 banknotes) and place them correctly in the banknote bundle.
- Align the banknotes in the bundle.
- Smooth very folded or bent banknotes.
- Place deformed bundles of notes with the concave side upwards.
- Correct banknotes with angular or round crumples by 'rolling' the bundle of notes in your hands.
- Remove banknotes that are folded in half.



It is not necessary to check each banknote in a bundle carefully.

Only notes that are seen at first glance to be damaged should be removed.



**Dispensing**



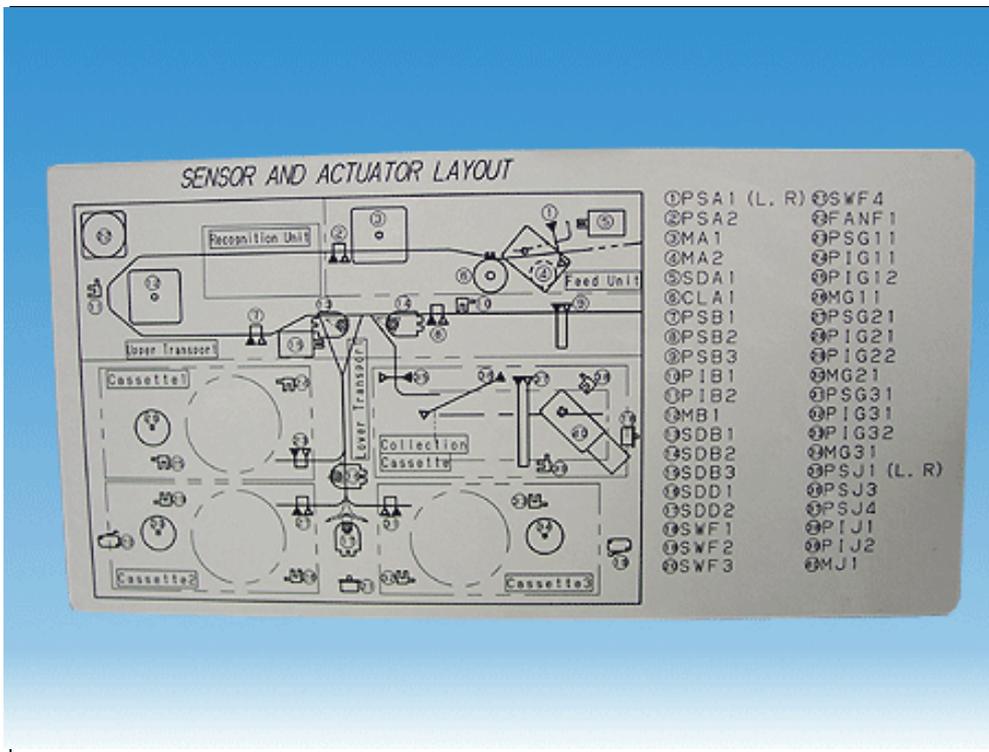
Banknotes totaling the required amount are stored in the reject / output tray (1).

The notes must be removed from the reject / output tray, since the next dispensing process can only be performed if the tray is empty.

A maximum of 30 banknotes can be specified for each dispense transaction (depending on the application used).

## Cash Paths

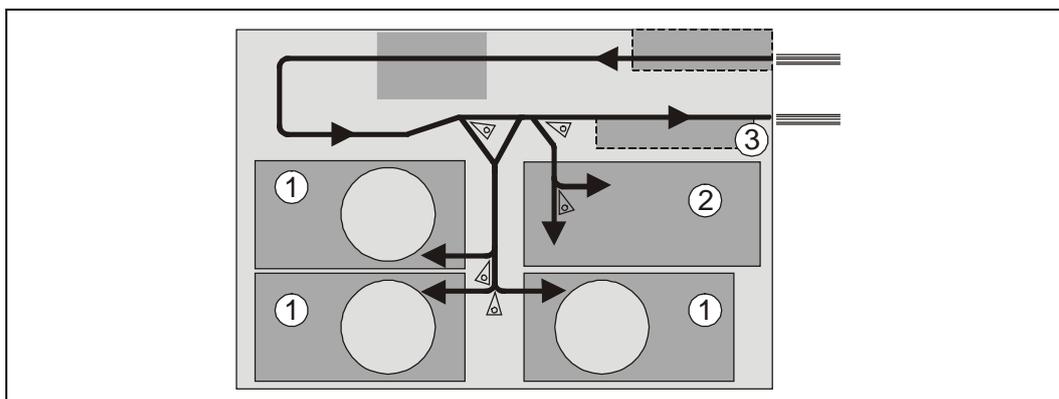
### Overview



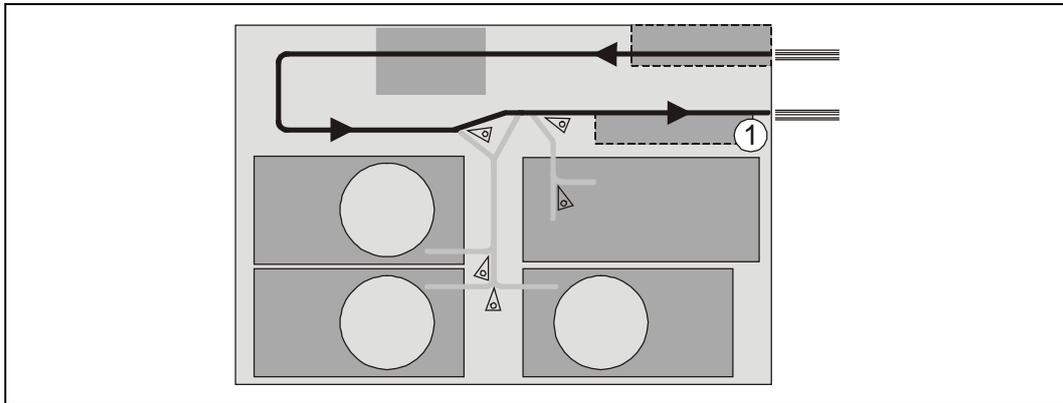
### Deposit process

Banknotes are transported from the cash input tray through the banknote validator. If they are found to be genuine, they are either stored on a drum module (1) or in the collection cassette (2) or they can be dispensed again upon customer request (3).

**i** Banknotes are only transported to the collection cassette if the appropriate drum module is full or if no drum module is available for a particular banknote denomination.

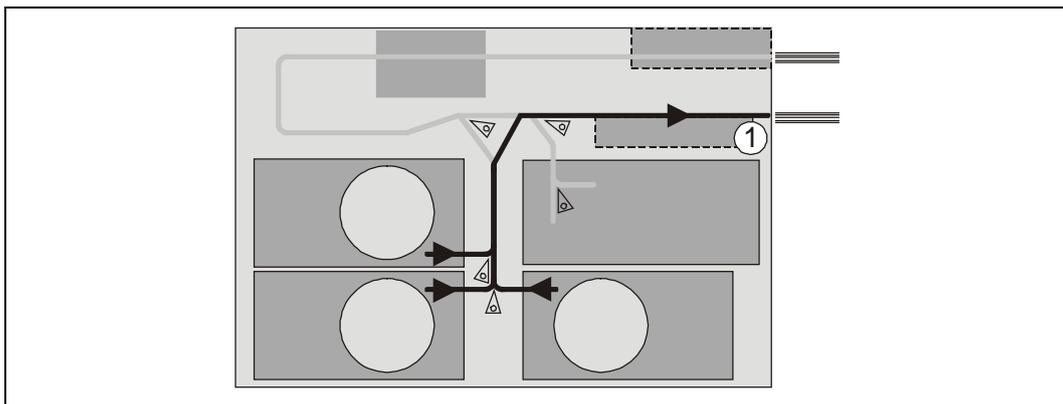


Notes that show irregularities during transport and banknotes that are not recognized (potential counterfeits) are routed to the reject / cash output tray (1).



### Dispensing process

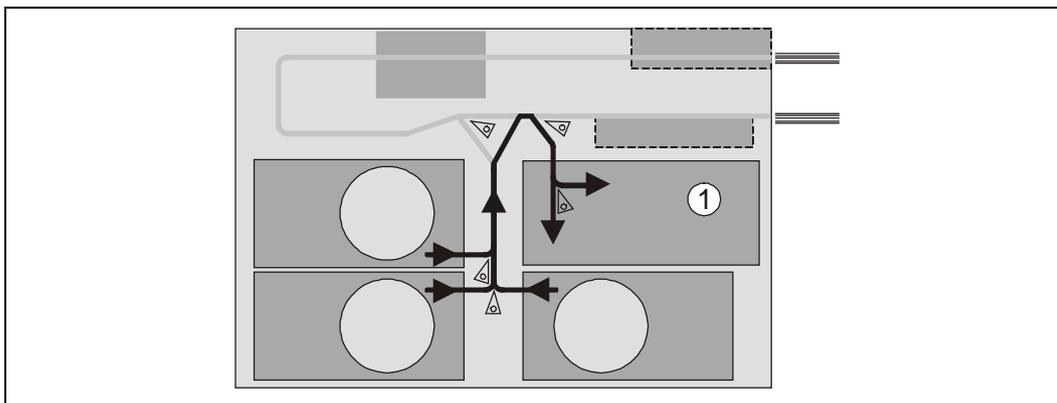
Banknotes are transported from the drum module to the reject/cash output tray (1).



## Emptying the drum modules

Banknotes that are suspected of being double or multiple dispenses are transported to the collection cassette (1).

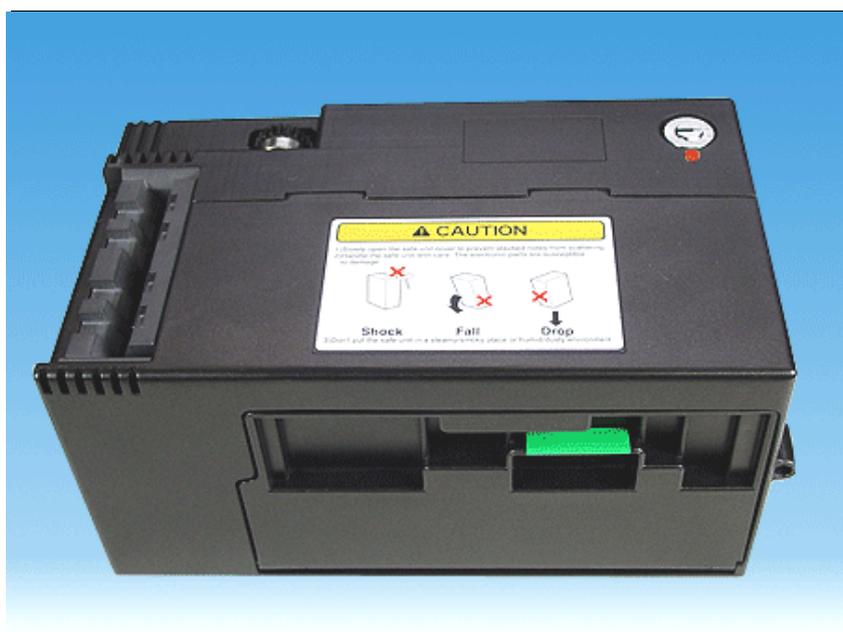
The drum modules can also be emptied into the collection cassette (1) via the device application.



## Collection Cassette

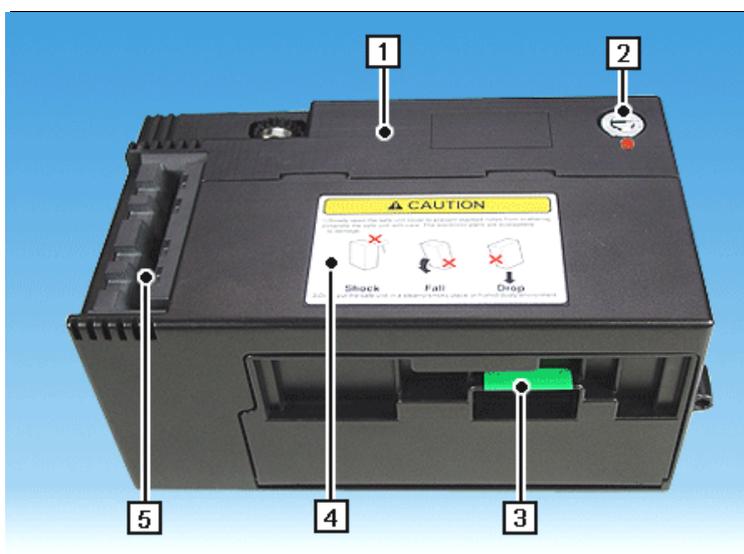
### General

The collection cassette serves to accommodate those banknotes which could not be deposited in a drum module or other bins.



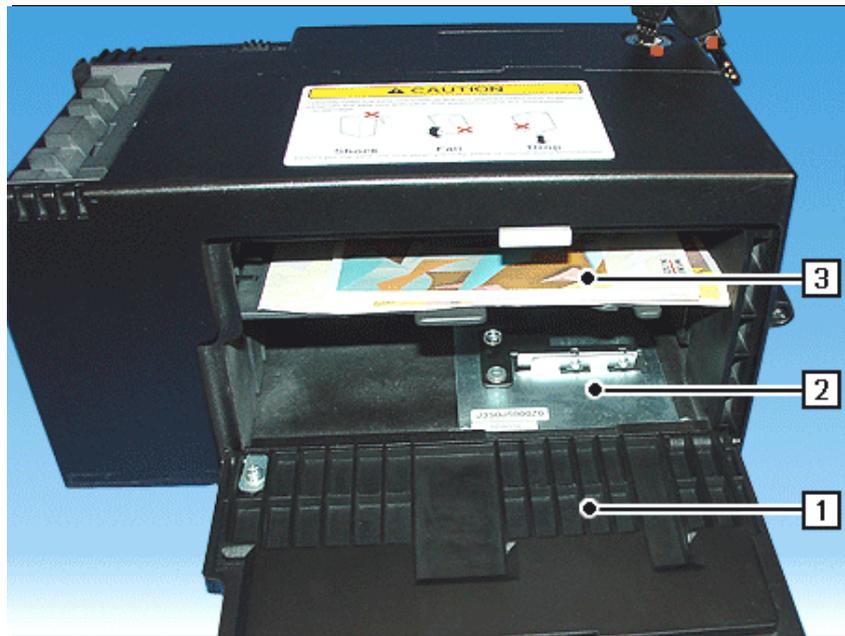
## Function elements and controls

### Collection cassette closed



1	Collection cassette	4	Safety precautions
2	Lock of collection cassette removal area	5	Note input
3	Flap in front of banknote		

**Collection cassette open**

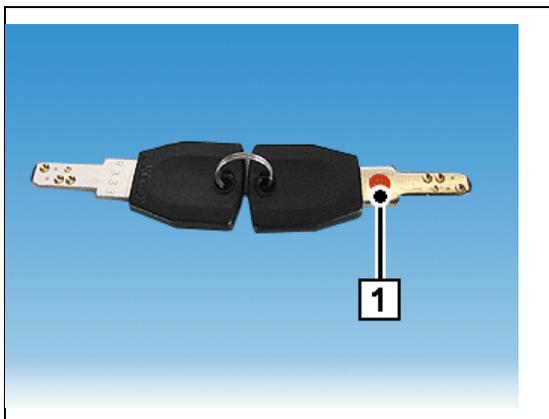


1	Flap in front of banknote removal area	3	Banknote rest
2	Collecting compartment		

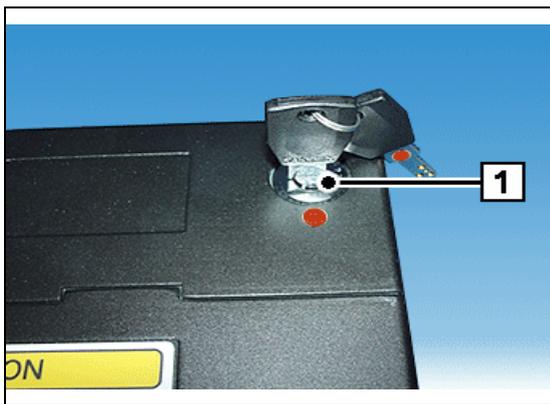
**Handling the collection cassette**

**Opening the collection cassette**

Remove the collection cassette from the device (see chapter "Basic Operation", section "Removing / inserting the collection cassette").



The key for the collection cassette is marked blue (1).



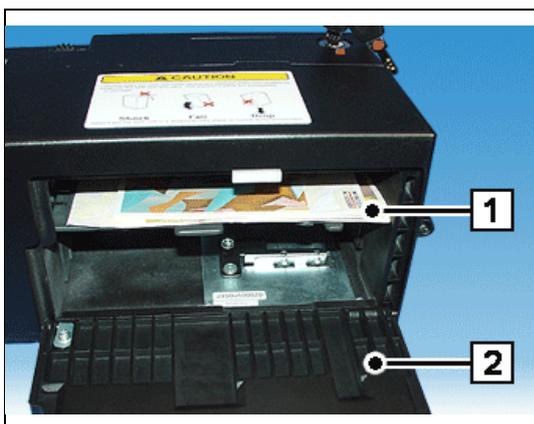
Put the key for the cassette in the cassette lock (1) > and turn it to the right as far as possible.



Swing the flap in front of the banknote removal area down by the gripping edge (1).

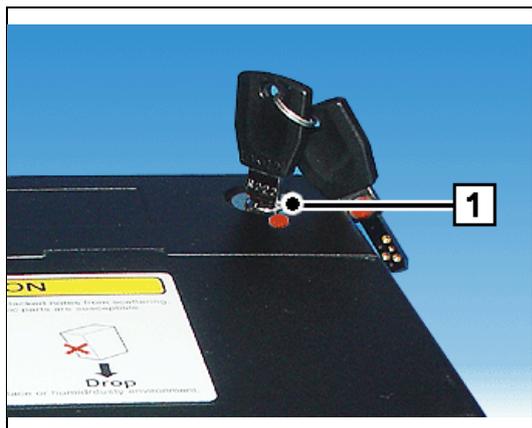
**Emptying / closing the collection cassette**

Open the collection cassette (see section "Opening the collection cassette").



Remove any banknotes (1).

Swing the flap up (2) until it audibly clicks into place.



Then turn the key (1) to the left as far as possible and pull it from the cassette lock.

Insert the collection cassette in the device (see chapter "Basic Operation", section "Removing / inserting the collection cassette").

## Malfunctions

### General

Indication of errors



Any malfunctions are signaled to the application by the controller and displayed on the operator display (1).

The following errors may occur:

- Missing banknotes
- Cash-in errors
- Errors in the cash paths
- Drum module errors
- Counting errors when feeding the banknotes into the drum modules
- Collection cassette errors

### Reactivation

The device reports the type of problem and halts the current process if the fault type so requires.

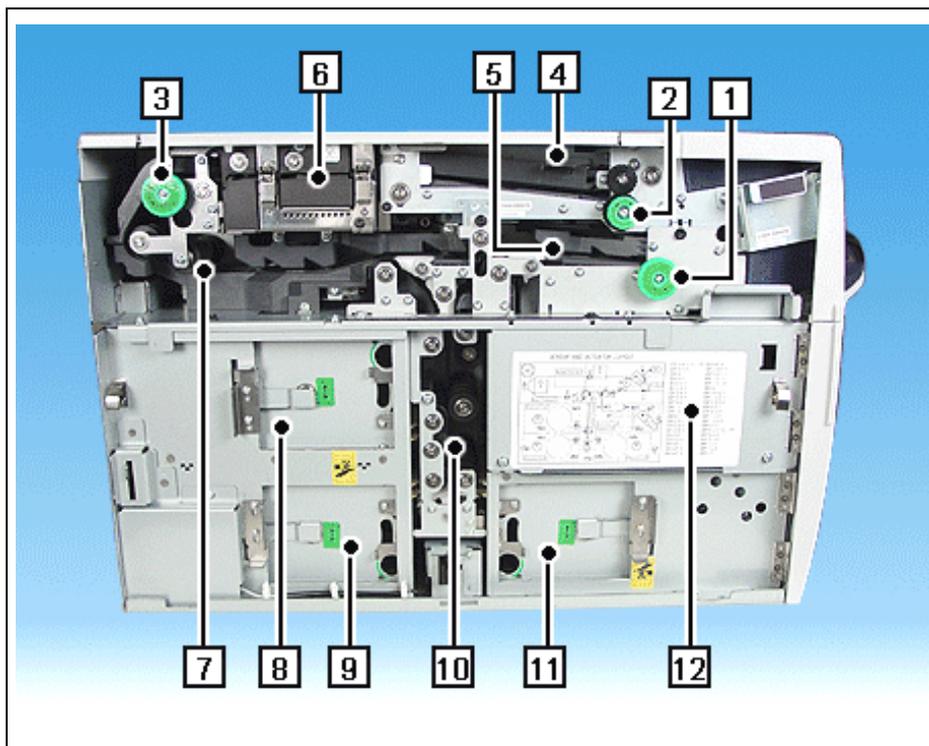
Following the correction of the error, the unit automatically runs a diagnostic test and feeds on any banknotes that are left in the transport path. Following this process there may be some banknotes left in the cash output tray.

Should the diagnostic test detect another error, the device remains temporarily out of operation.

### Troubleshooting

**i** Jammed banknotes must not be removed from the transport paths, but must be transported to one of the marked removal points (4) to (12) using the **green transport wheels (1) to (3)**. Here they can be removed (see following sections).

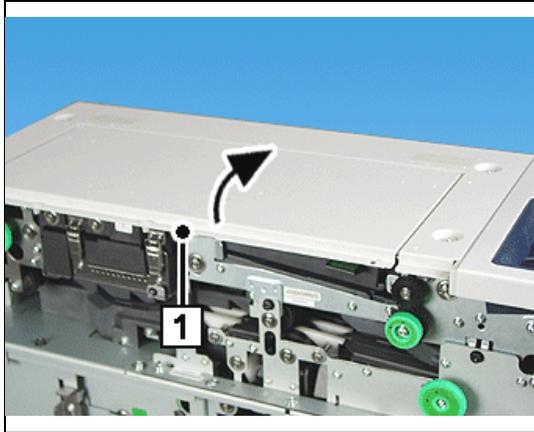
In case of a banknote jam be sure to check the entire transport path (4 - 12) for other banknote jams and eliminate them.



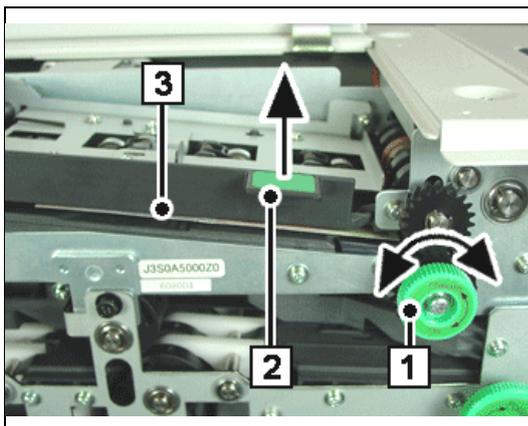
1	Transport wheel reject unit	7	Rear transport unit
2	Transport wheel in the section of the input unit	8	Drum module 1
		9	Drum module 2
3	Transport wheel in the section of the rear transport unit	10	Lower transport unit
		11	Drum module 3
4	Input unit	12	Collection cassette (behind cover)
5	Reject unit		
6	Banknote reader		

**Jam in the input unit**

Open the transport path cover (see chapter "Basic Operation", section "Removing / mounting the transport path cover").



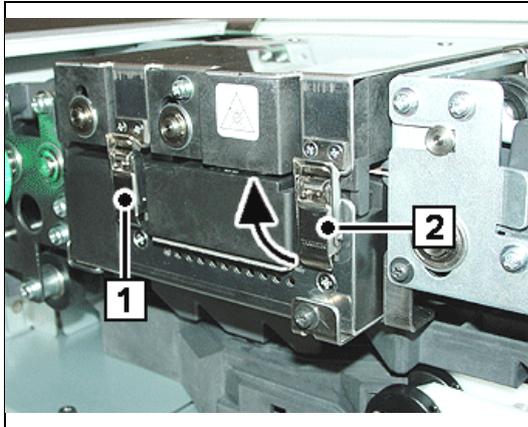
Swing the cover (1) up in the direction of the arrow.



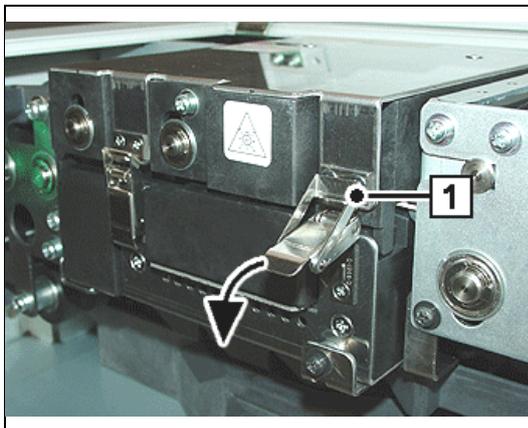
Turn the green handwheel (1) to the left or to the right as indicated by the arrow, lift the green lever (2) in the direction of the arrow and remove the jammed banknotes (3).

### Jam in the banknote reader

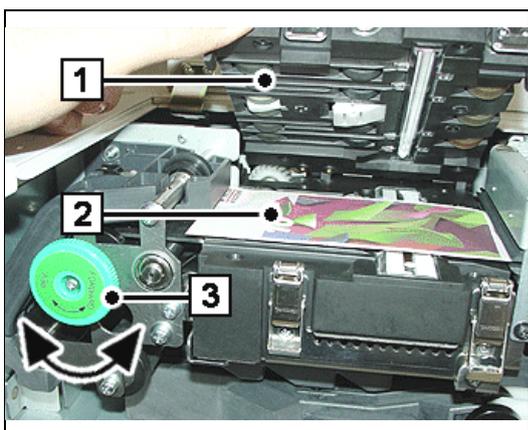
Clear any banknote jam in the input unit (see section "Jam in the input unit").



The bent lever closures (1) and (2) are opened in the same way. Therefore, how to open them is described only for the bent-lever closure (2) as an example. Raise the bent-lever closure in the direction of the arrow and ...



... remove it from the latch (1). Then swing the bent-lever closure down in the direction of the arrow. Repeat this for the second bent-lever closure.

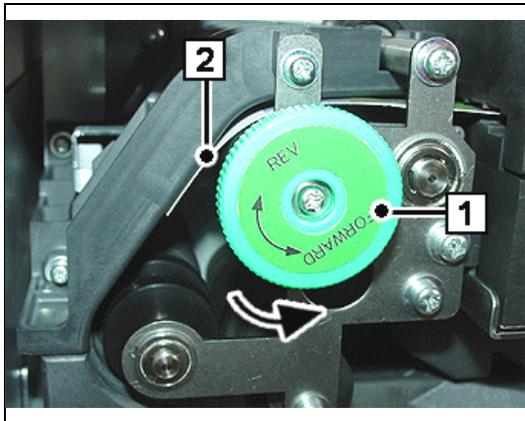


Lift the upper part of the banknote reader (1) and keep holding it. Remove the jammed banknotes (2). To reach the banknotes more easily you can turn the green handwheel (3). This will transport any jammed notes in the banknote reader.

Close the banknote reader, close the two bent-lever closures and shut the cover.

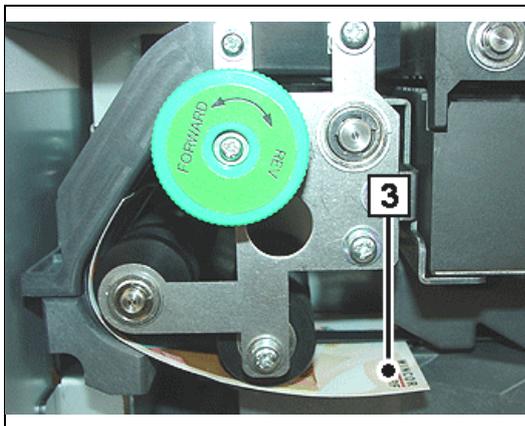
### Jam in the rear transport unit

Clear any banknote jam in the banknote reader (see section "Jam in the banknote reader").



To reach the banknotes more easily you can turn the green handwheel (1) in the direction of the arrow. This will transport any jammed notes (2)

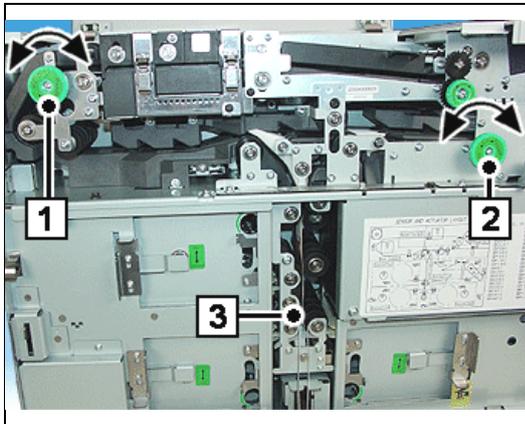
...



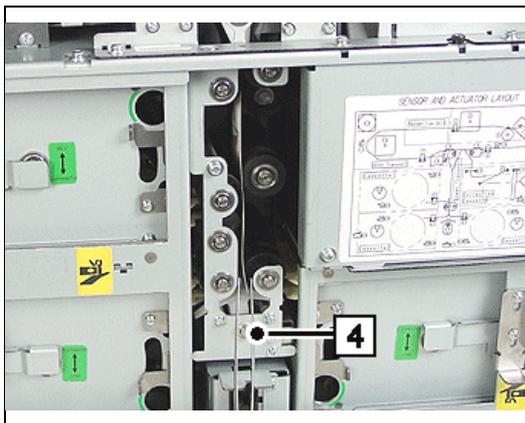
... in the lower part of the rear transport unit. Remove any jammed banknotes (3) from the rear transport unit.

### Jam in the lower transport unit

Clear any banknote jam in the rear transport unit (see section "Jam in the rear transport unit").



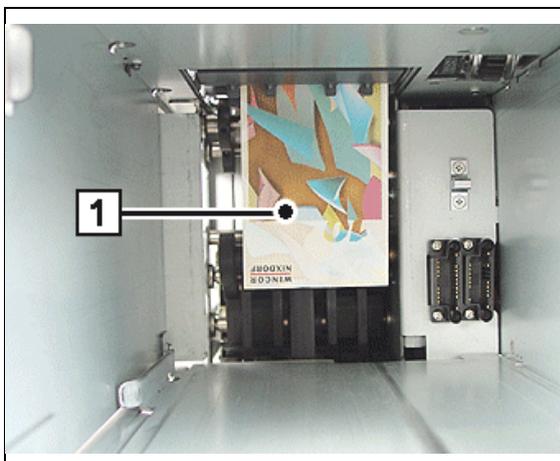
To reach the banknotes more easily you can turn the green handwheels (1) and (2). This will transport any jammed notes in the lower transport unit. Remove any jammed notes (3) ...



... from the lower transport unit using tweezers (4).

### Jam in the collection cassette

Clear any banknote jam in the lower transport unit (see section "Jam in the lower transport unit").

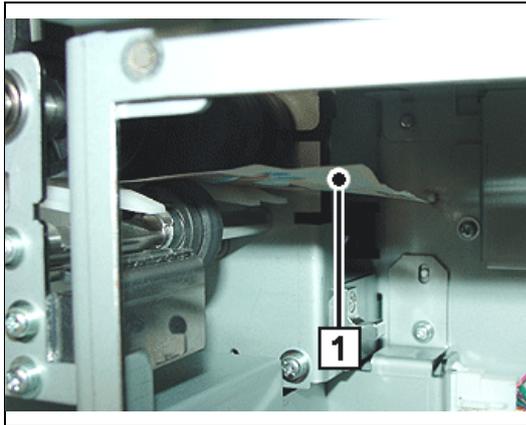


Remove the collection cassette from the device (see chapter "Basic Operation", "Removing / inserting the collection cassette"). Remove the jammed banknotes (1) and re-insert the collection cassette.

### Jam in the drum module

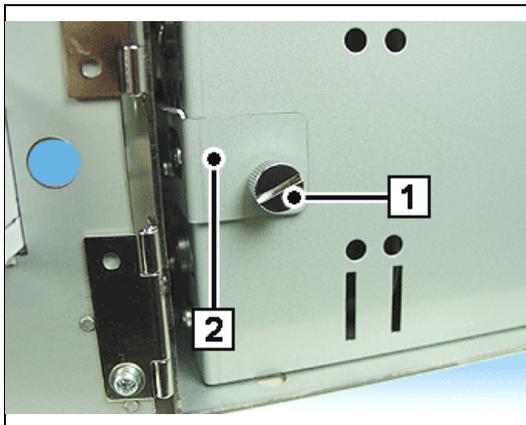
Clear any banknote jam in the collection cassette (see section "Jam in the collection cassette").

- i** Banknote jams in the three drum modules are cleared in the same way. Therefore, how to clear a banknote jam is described for front drum module as an example.

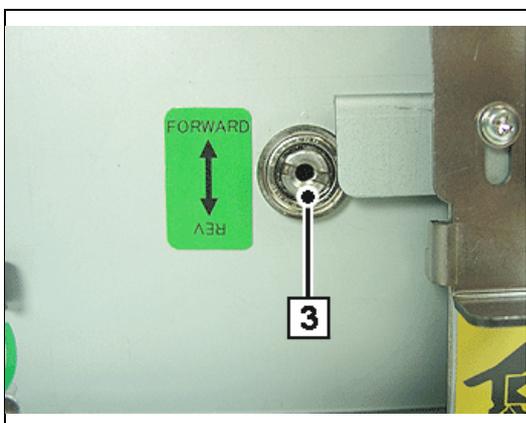


Pull the drum cassette in the service position (see chapter "Basic Operation," section "Putting drum modules in service position"). Remove the jammed banknotes (1).

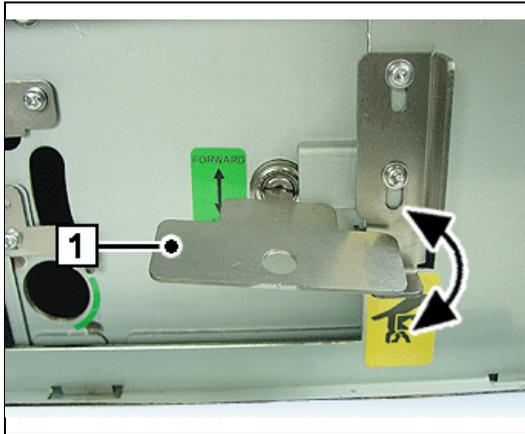
Clear a banknote jam in the drum module as described below.



Loosen the knurled screw (1) enough to let you pull away the cover (2) ...

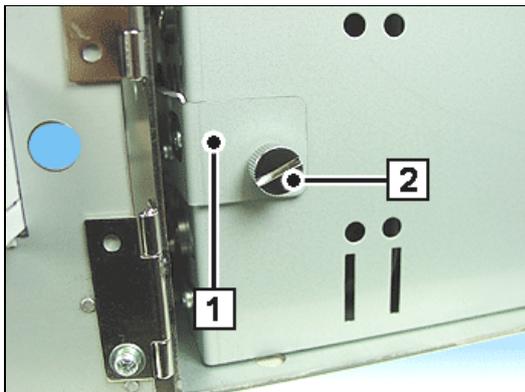


... uncovering the service hole (3) on the drum module.



Push the service key (1) in the hole and turn it in the directions indicated by the arrow. This will cause jammed banknotes to be transported in the drum module or it lets you transport jammed banknotes out of the drum module to be removed.

Remove the service key.

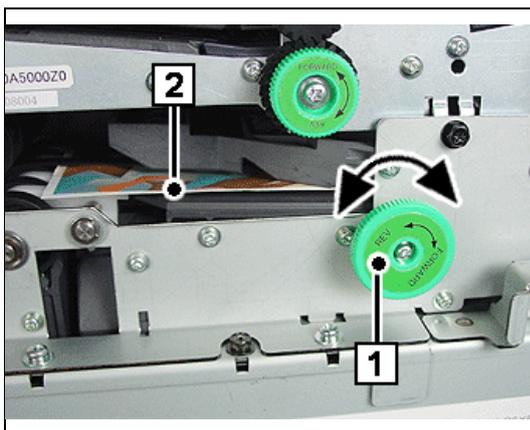


Push the cover (1) in the device as far as possible and tighten the knurled screw (2). Push the drum module in the device as far as possible and close the drum module cover.

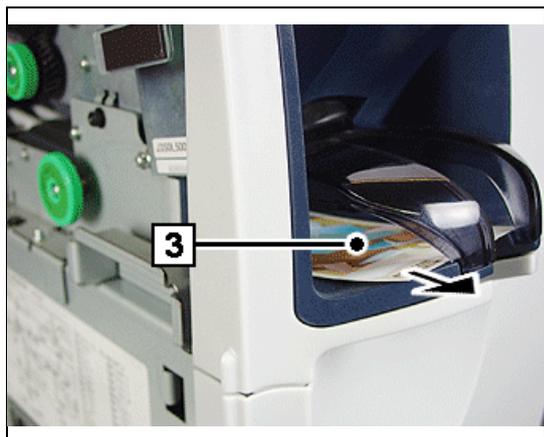
Repeat the procedure for the other two drum modules.

### Jam in the reject unit

Clear any banknote jam in the drum modules (see section "Jam in the drum module").



To reach the banknotes more easily you can turn the green handwheel (1). This will allow you to remove any jammed banknotes (2) in the place indicated here or ...



... to transport them in the output tray (3) to be removed from there in the direction indicated by the arrow.

Close the transport path cover (see chapter "Basic Operation", section "Removing / mounting the transport path cover").

## Other problems

Error indications are made up of the error code and the process code.

The error code provides information on what kind of an error and where it has occurred. The process codes indicates during which process the error has occurred.

Error codes are shown on the operator display.

Error code					Process code		
X	X	X	X	+	X	X	X

The following table lists the first four digits of the error message, i.e. the error code. These errors can occur besides the problems mentioned above. Each error is explained and a recommendation given for eliminating it.

**i** After each elimination of an error the device has to be turned off and on again leading to an automatic reset of the device.

Error code	Section / error	Cause and remedy
0001-0020	Motor malfunction	Banknote or object blocks the transport path. Remove the banknote or the object. Switch the device off and on. If the problem persists, notify Service.
0101-0103	Jammed banknotes	Banknote or object blocks the transport path. Remove the banknote or the object. Switch the device off and on. If the problem persists, notify Service.
0201-0212	Paper jam between sensors	
0301-0304	Unpredicted covering of photosensor	
0501 0502 0503 0504	Device door: Collection cassette Drum module 3 Drum module 1 / 2 Transport path cover	The respective device door is not closed. Close the device door. Switch the device off and on. If the problem persists, notify Service.
1001-1103	Transport error	Jammed banknotes or objects. Remove the banknote or the object. Switch the device off and on. If the problem persists, notify Service.
2001-2006 2101-2106 2201-2206 2301-2306 2401-2408 2501-2506	Photosensor error	Jammed banknotes or objects. Remove the banknote or the object. Switch the device off and on. If the problem persists, notify Service.

<b>Error code</b>	<b>Section / error</b>	<b>Cause and remedy</b>
3601	CPU board	Connector on the CPU board is not properly attached. Notify Service.
3621-3626	Power supply error	Error in internal power supply error Notify Service.
3801-3819	Communication error	Error in internal communication. Notify Service.
38A0		
3B01-3B67	Banknote reader	Switch the device off and on. If the problem persists, notify Service.
4101	Program error	Switch the device off and on. If the problem persists, notify Service.
4211-4213	Memory error	CPU board defective Notify Service.
4231-4233		
4241-4242		
4271-4273	USB memory card error	USB memory or CPU board defective Notify Service.
4281	Software data error	Switch the device off and on. If the problem persists, notify Service.
4401	Voltage error	Power supply error Switch the device off and on. If the problem persists, notify Service.
4601-4603	ROM/RAM error	Program error or CPU board defective Notify Service.
4701	CPU board	Switch the device off and on. If the problem persists, notify Service.
4901-4960	Software error	Notify Service.
Ex01 Ex01 Ex01	Paper jam	Jammed banknotes or objects. Remove the banknote or the object. Switch the device off and on. If the problem persists, notify Service.
Ex02 Ex02 Ex02		
Ex03 Ex03 Ex03		
Ex04 Ex04 Ex04		
E110 E210 E310	Transport error: Drum module 1 Drum module 2 Drum module 3	Jammed banknotes Remove the banknote. Switch the device off and on. If the problem persists, notify Service.
Ex11 Ex11 Ex11	Malfunction	Tape is wound up completely or torn. Switch the device off and on.

Error code	Section / error	Cause and remedy
Ex12 Ex12 Ex12		If the problem persists, notify Service.
Ex20 Ex20 Ex20 Ex21 Ex21 Ex21	Engine error	Motor rotation speed error Switch the device off and on. If the problem persists, notify Service.
Ex40 Ex40 Ex40 Ex41 Ex41 Ex41	Sensor error	Jammed banknotes or objects. Remove the banknotes or objects. Switch the device off and on. If the problem persists, notify Service.
Ex42 Ex42 Ex42		
Ex50 Ex50 Ex50		
Ex60 Ex60 Ex60 Ex61 Ex61 Ex61	Sensor error	Switch the device off and on. If the problem persists, notify Service.
Ex62 Ex62 Ex62		
Ex70 Ex70 Ex70 Ex71 Ex71 Ex71	Sensor error	Jammed banknotes or objects. Remove the banknotes. Switch the device off and on. If the problem persists, notify Service.
Ex72 Ex72 Ex72		
Ex80 Ex80 Ex80 Ex81 Ex81 Ex81	Setting error	Jammed banknotes or objects. Remove the banknotes and objects. Switch the device off and on. If the problem persists, notify Service.
Ex82 Ex82 Ex82		

X = Drum module number

Ex90 Ex90 Ex90	Sensor error	Switch the device off and on. If the problem persists, notify Service.
ExA0 ExA0 ExA0	Drum module error	Switch the device off and on. If the problem persists, notify Service.
ExA1 ExA1 ExA1		
ExA2 ExA2 ExA2		
E901- E904	Collection cassette error	Jammed banknotes or objects. Remove the banknotes and objects. Switch the device off and on. If the problem persists, notify Service.
E928- E929	Collection cassette error	Switch the device off and on. If the problem persists, notify Service.
E940- E949	Sensor error of collection cassette	Switch the device off and on. If the problem persists, notify Service.
E950- E959	Sensor error of collection cassette	Jammed banknotes or objects. Remove the banknotes or objects. Switch the device off and on. If the problem persists, notify Service.
E960- E967	Sensor error of collection cassette	Switch the device off and on. If the problem persists, notify Service.
E970- E977	Sensor error of collection cassette	Jammed banknotes or objects. Remove the banknotes or objects. Switch the device off and on. If the problem persists, notify Service.
E980- E987	Sensor error of collection cassette	Switch the device off and on. If the problem persists, notify Service.
E990- E993	Sensor error of collection cassette	Switch the device off and on. If the problem persists, notify Service.

x = Drum module number

E9A0	Collection cassette error	Switch the device off and on. If the problem persists, notify Service.
E9A1- E9A4	EEPROM error of collection cassette	Switch the device off and on. If the problem persists, notify Service.
E9B0	Voltage error of collection cassette	Switch the device off and on. If the problem persists, notify Service.

## Cleaning, Service and Maintenance



The device must be switched off for service and maintenance work (see chapter "Basic Operation").

You should service and clean the parts of the device listed below at the specified intervals.

In addition, please note the following:

- Take care not to drop any cleaning liquids into the device.
- Only use the cleaning material listed in this manual. Inform the customer service responsible for you.

Information where to order the listed cleaning materials is given in the chapter "Appendix", section "Approved cleaning materials".

### Cleaning the housing

Cleaning interval:	as needed
Cleaning material:	Wet cleaning cloths
for stainless steel surfaces	Ballistol oil for cleaning stainless steel
for varnished surfaces	Professional cleaning set for EDP equipment
for plastic surfaces	Professional cleaning set for EDP equipment

### Cleaning the operator displays

Cleaning interval:	as needed
Cleaning material:	Wet cleaning cloths or  Lint-free cloth, moistened with some water (e.g. dust cloth from professional cleaning set for EDP equipment)

### **Cleaning the transport paths**

Any scraps of paper and dirt may cause banknote jams in the transport paths. If the transport paths are very dirty, clean them with high-pressure gas.

Cleaning interval: as needed

Cleaning material: Pressair high-pressure gas

### **Cleaning the banknote reader**

Open the banknote reader and clean it as required (see chapter "Malfunctions", section "Jam in the banknote reader").



Take care not to use solvent-based cleansers.

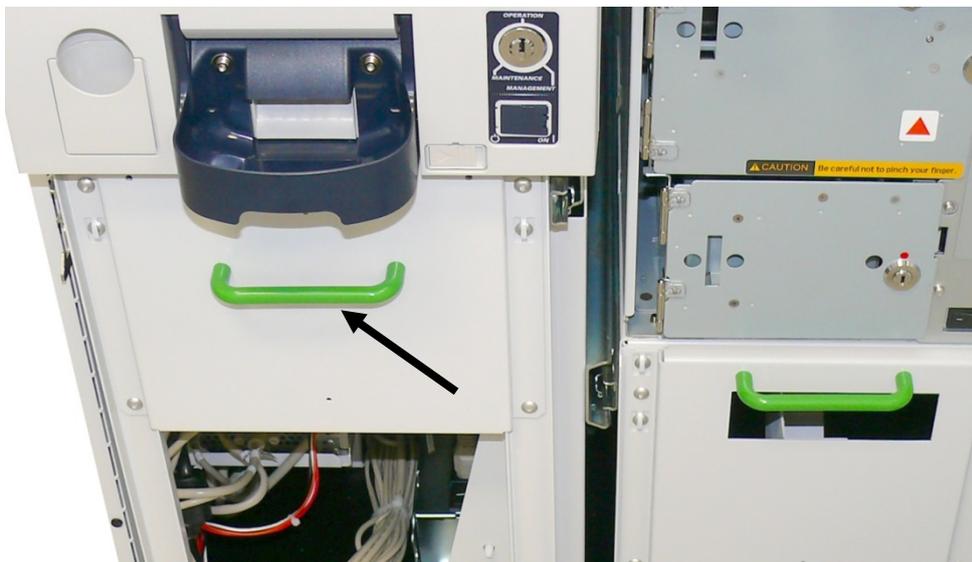
Cleaning interval: as needed

Cleaning material: Universal cleaning cloth or air duster or brush (included in delivery)

## Coin Module iCASH 15E

Switch off the device. Unlock the BEETLE /iSCAN EASY and open the front door.

Grasp the iCASH 15E at the green lever...



... and pull it out completely.

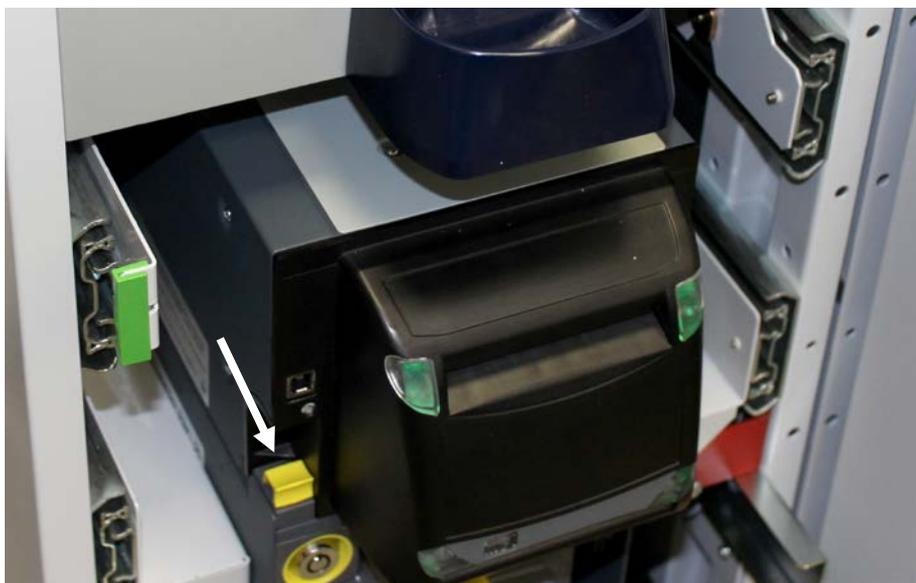


Find all other relevant information in the User Manual iCASH15E on the Wincor Nixdorf Internet.

## Cash Module iCASH 20

Unlock and open the front door.

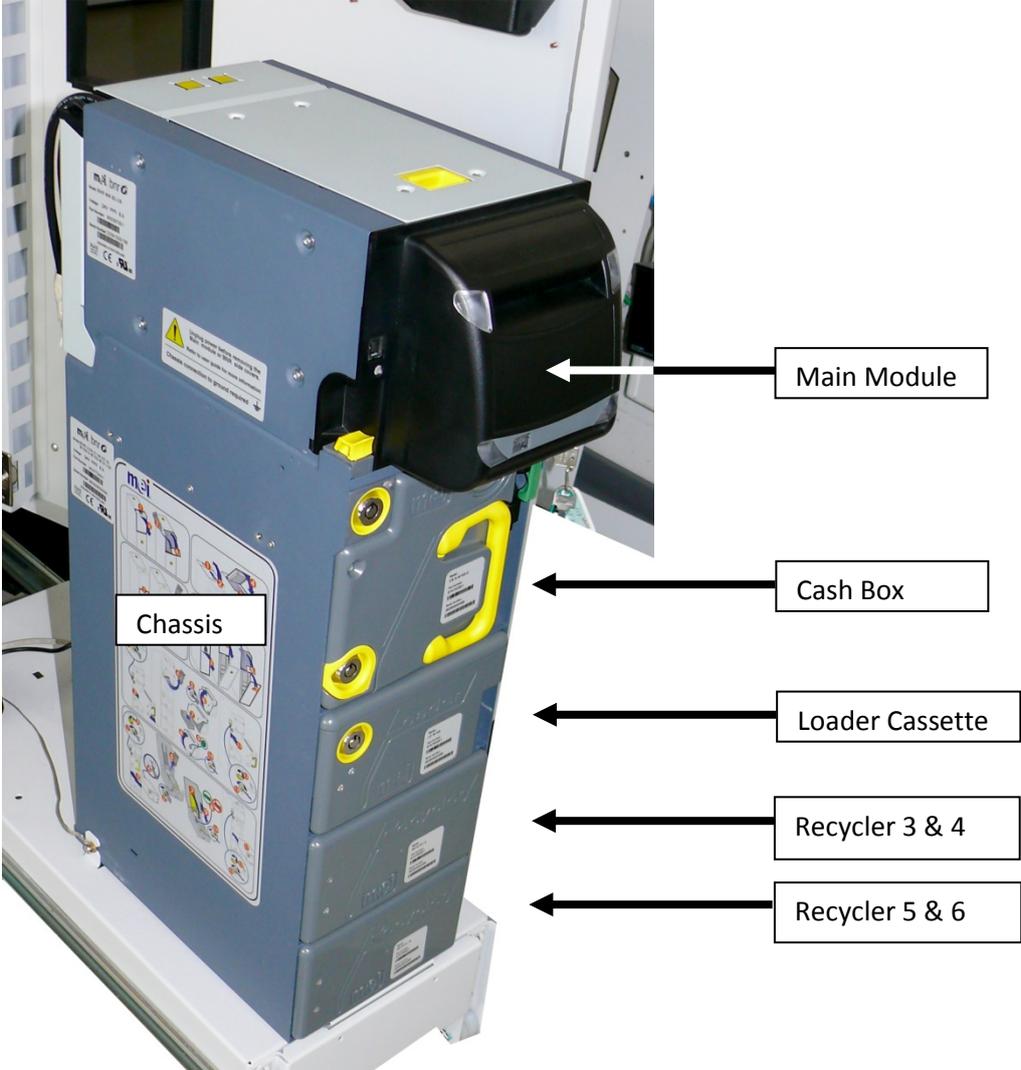
Grasp the iCASH 20 (see white arrow) and pull it out completely.



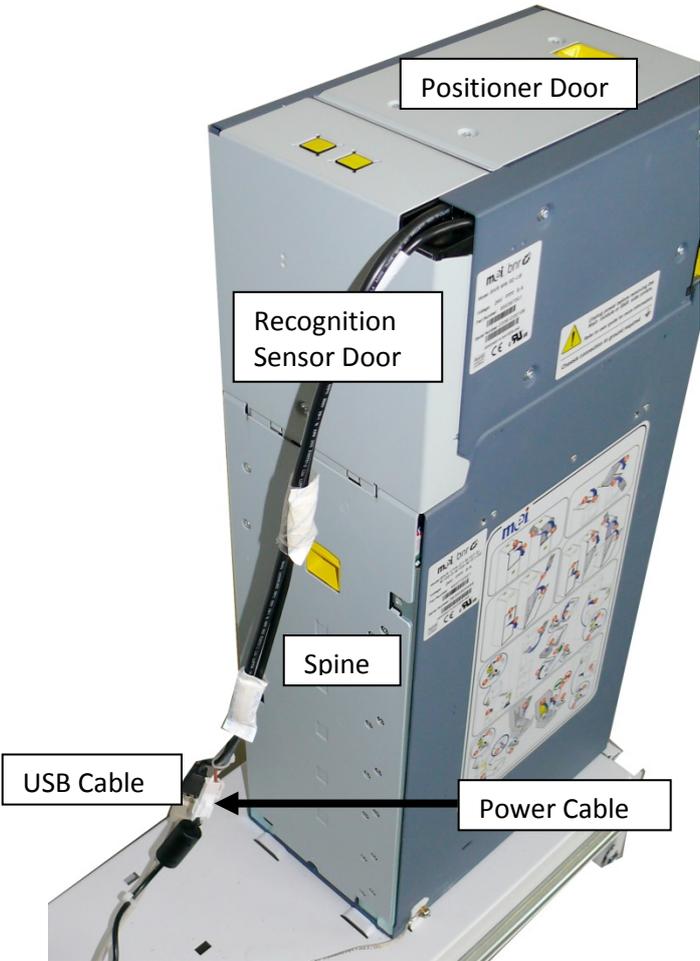
Text and graphics on the following pages 50-66 © 2009-2013 MEI. All rights reserved.

# Components

## Front View



Back View



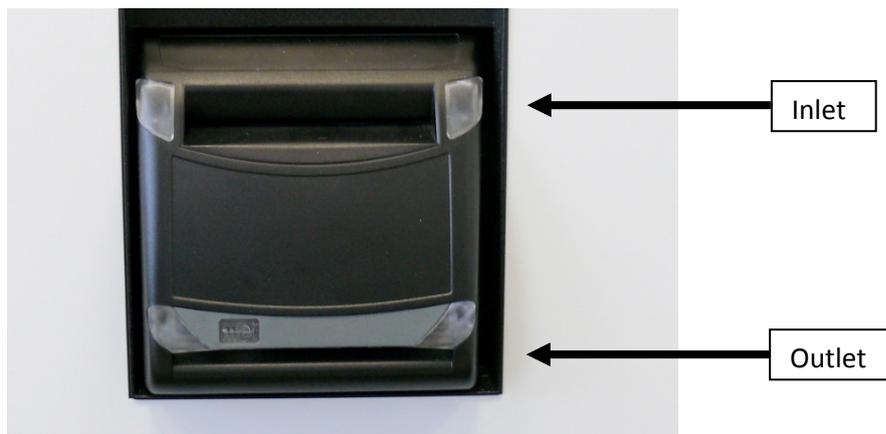
## Main Module external Indicators

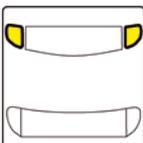
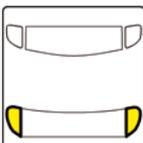
External indicators are located on the Bezel.

External indicators consist of two pairs of illuminated arrows, one pair pointing to the Inlet, the other pair pointing to the Outlet.

Inlet arrows can be illuminated green or red. Outlet arrows can be illuminated green only.

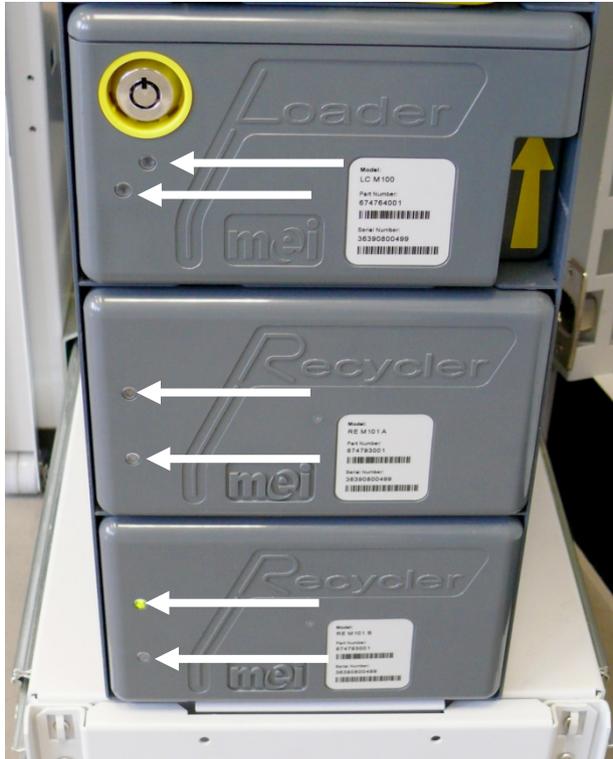
These arrows provide information about the transaction to the User, and can also indicate warning and failure conditions.



		System / Module Status	You have to
Off	Off	Insertion disabled	Take no action
<b>GREEN</b> 	Off	A banknote can be inserted	Insert a banknote
<b>GREEN</b> 	Off	A banknote returned to the Inlet	Pull the banknote out
Off	<b>GREEN</b> 	Banknotes are given out at the Outlet	Withdraw the banknotes

## Modules Front Indicators

Each iCASH 20 module has front located LED indicators giving its status. Each LED will illuminate green or red depending on the module status.



## Spine Indicator

The Spine has a LED indicator that provides its status. This indicator will illuminate green or red.



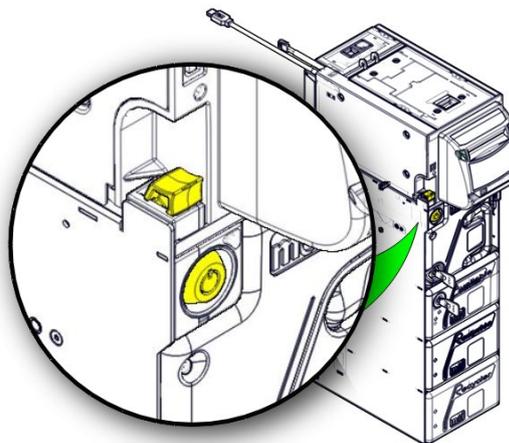
## Locks and Security Principle

The iCASH 20 can be secured with several locks to prevent unauthorised access to the stored money:

### Interlock System

A lock and a lever which secures all cash modules. The picture shows the Interlock System correctly locked.

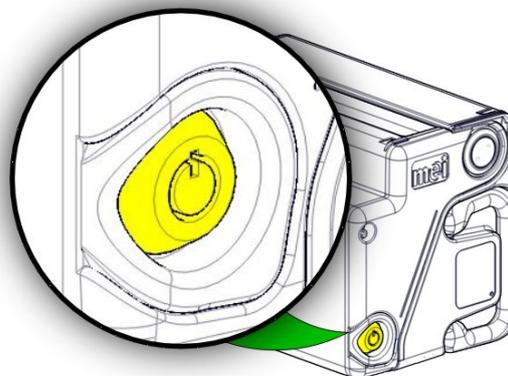
To release it, you need a key.



### Cash-Box

You need to release the Interlock System to remove the Cash-Box. To open the Cash-Box it must be removed and the module must be unlocked with a key.

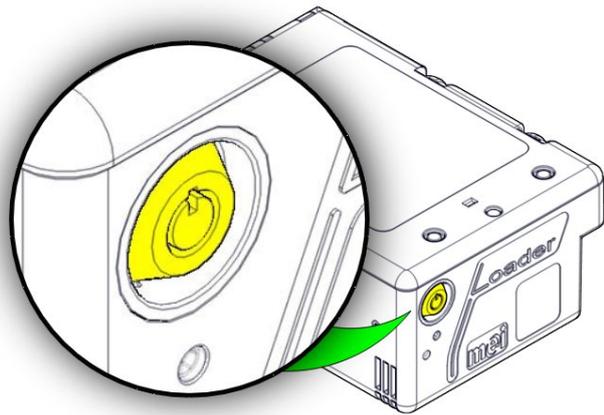
Once the cashbox is removed, it must be opened and emptied before it can be reinstalled in the iCASH 20. The key is required to open, close and rearm it.



### Loader Cassette

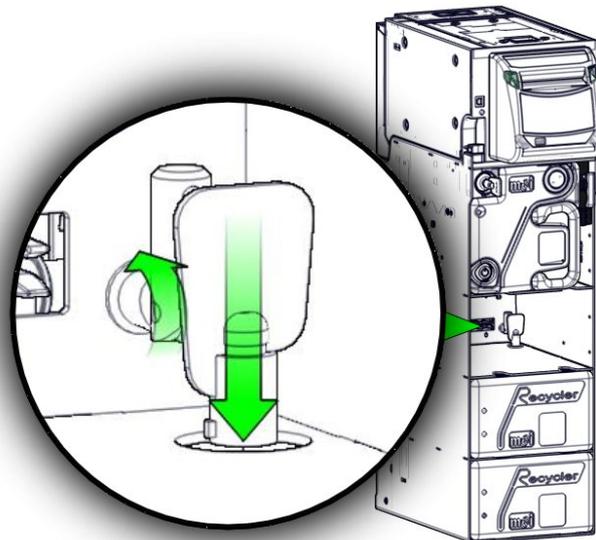
You need to release the Interlock System to remove the Loader Cassette. To open the Loader Cassette it must be removed and the module must be unlocked with a key.

The key is required to open and close it.

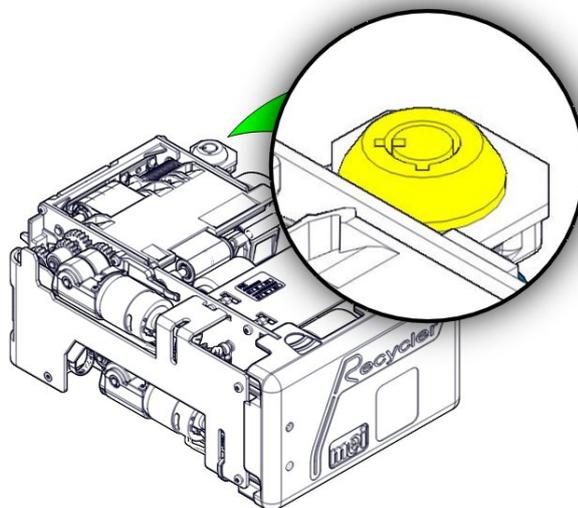


### Recycler

To remove a Recycler, you need to release the Interlock System and remove the Loader Cassette. Recyclers are locked in place with keys. Refer to the iCASH 20 Service Manual to remove the Recyclers.

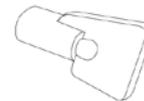


Once the Loader Cassette is removed, you can see the Recycler lock.



## Cash Box Handling and Arming

To remove the Cash-Box, you need to release the Interlock System with its key.



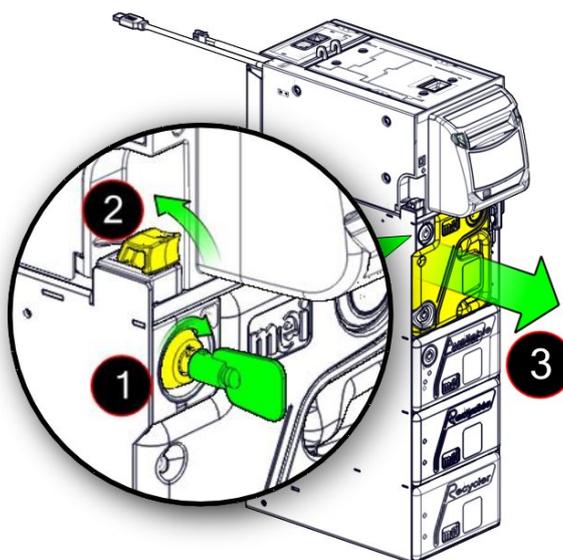
To open and rearm the Cash-Box, you need the key of the Cash-Box.



**Warning**, the Cash-Box is a module which needs to be rearmed once removed. Make sure that you have the key or another empty Cash-Box before removing it. If you do not have the key, you will not be able to replace the same Cash-Box.

Release the Interlock System with lock (1) and lever (2) using the key.

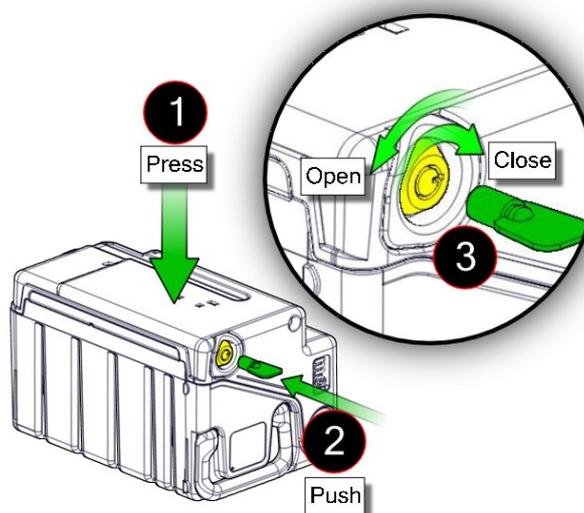
Remove the Cash-Box (3) by pulling it away from the iCASH 20 with the yellow handle.



To open the Cash-Box, press slightly on the Cash-Box (1), insert the key fully into the lock (2) and turn (3) left (counter-clockwise).

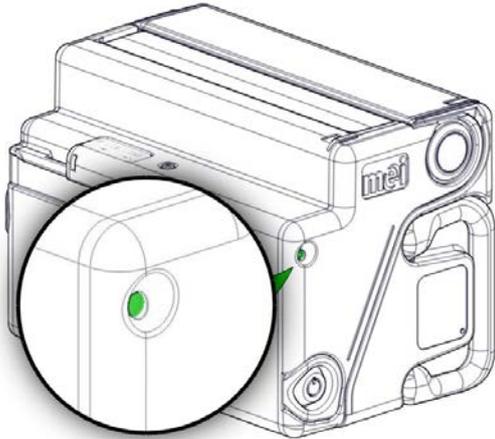
Do not remove the key from the lock and open the Cash-Box. If banknotes are present, remove all banknotes.

To close the Cash-Box, press the Cash-Box closed at (1), turn the key (3) right (clockwise).



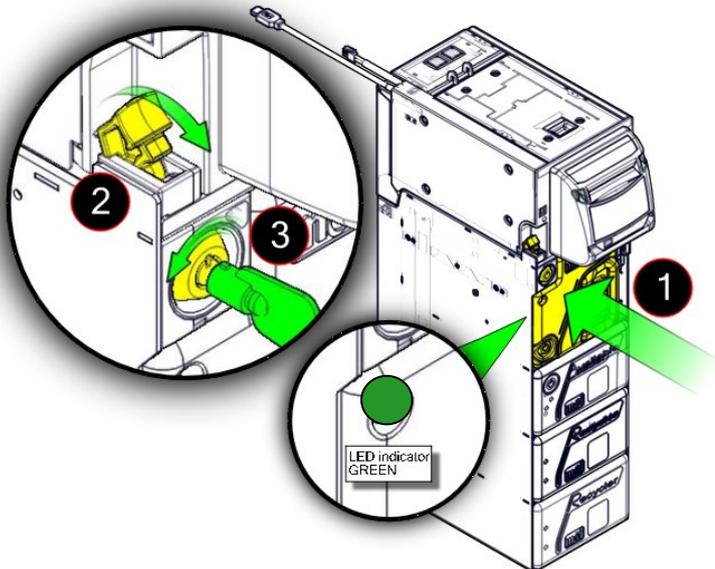


**Warning,** the Cash-Box is a module which needs to be rearmed once removed. Make sure that you have the key or another empty Cash-Box before removing it. If you do not have the key, you will not be able to replace the same Cash-Box.



Install the Cash-Box (1).

**Note:** The Cash-Box should install into the iCASH 20 with little force. If the cashbox does not sit flush in the iCASH 20, first check that the interlock lever is unlocked and then check the Cash-Box arming indicator to ensure it is green. If it is not green, the Cash-Box will need to be rearmed by opening, emptying and closing.

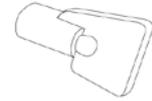


Lock the Interlock System with lever (2) and lock (3) using the key.

## Loader Cassette Handling, using and Quality Banknote

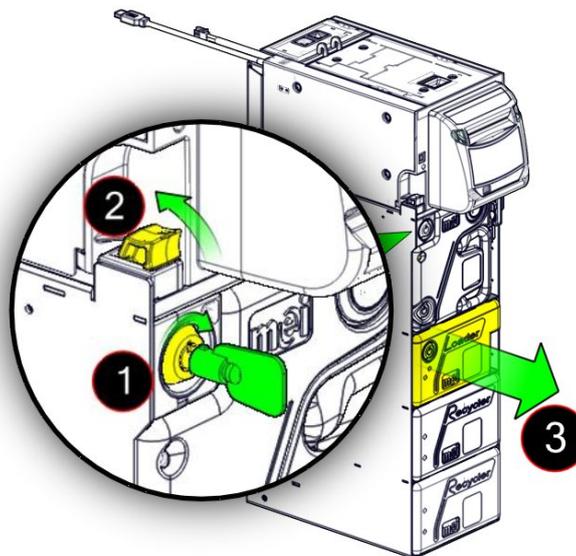
The following instructions explain how to fill the Loader Cassette with banknotes. Banknotes that are placed in the Loader Cassette must meet the banknote criteria detailed in Table 1.

To remove the Loader Cassette, you will need to release the Interlock System with its key. The key of the Loader Cassette is required to open and close it.

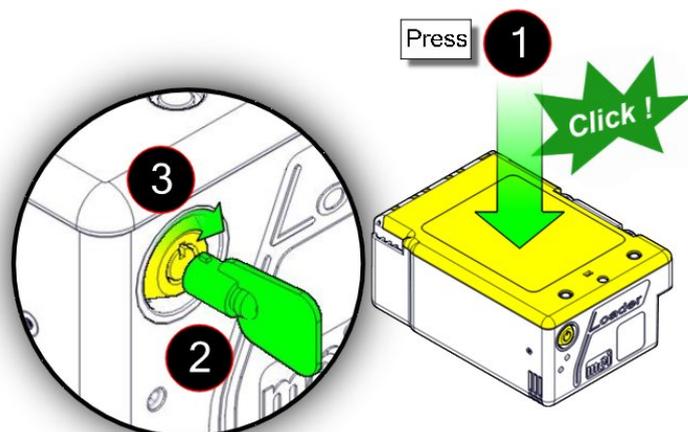


Release the Interlock System with lock (1) and lever (2) using the key.

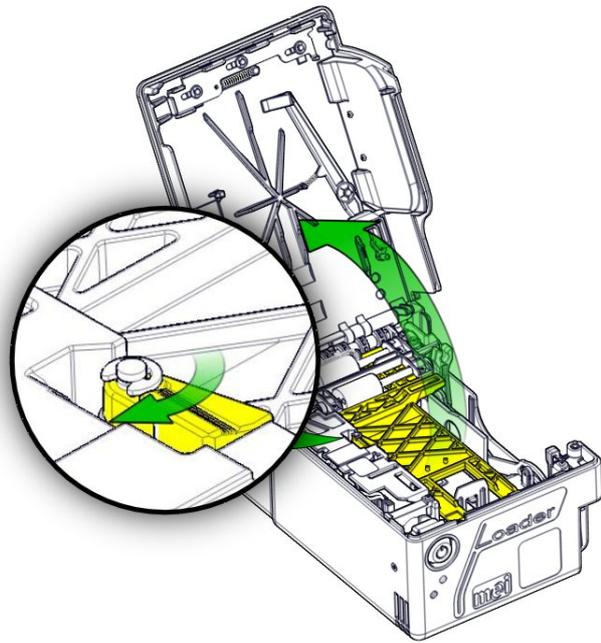
Remove the Loader Cassette (3).



To open the Loader Cassette, press slightly on the box (1), insert the key (2) and fully turn the locking latch clockwise (3).

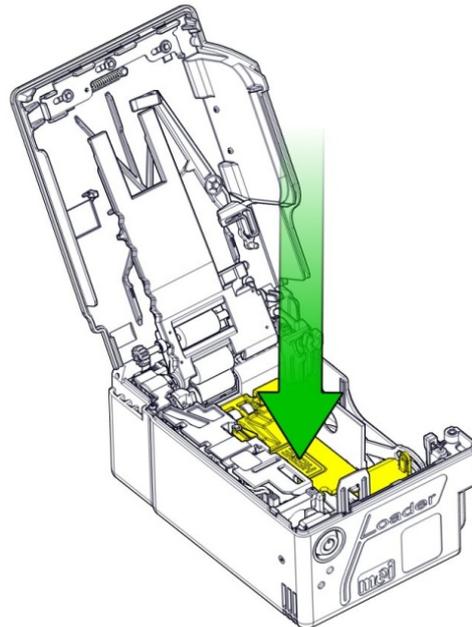


Fully open the door until it stops.  
Release the little yellow latch and lift  
the “max level detection plate”.



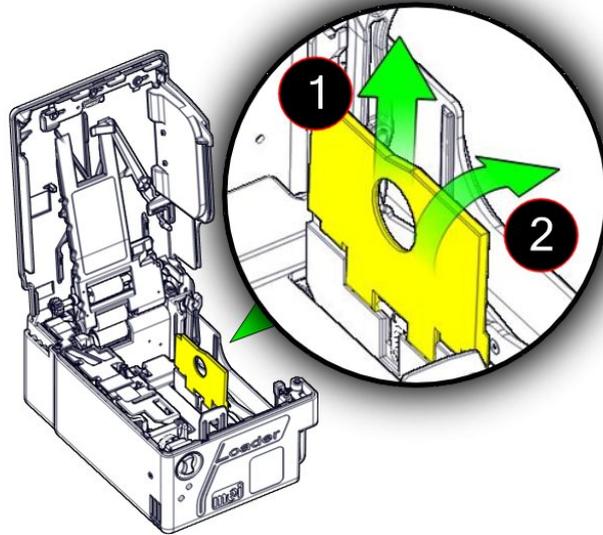
Push the pressure plate down to the  
stop.

The pressure plate will lock at the  
bottom of the Loader Cassette.

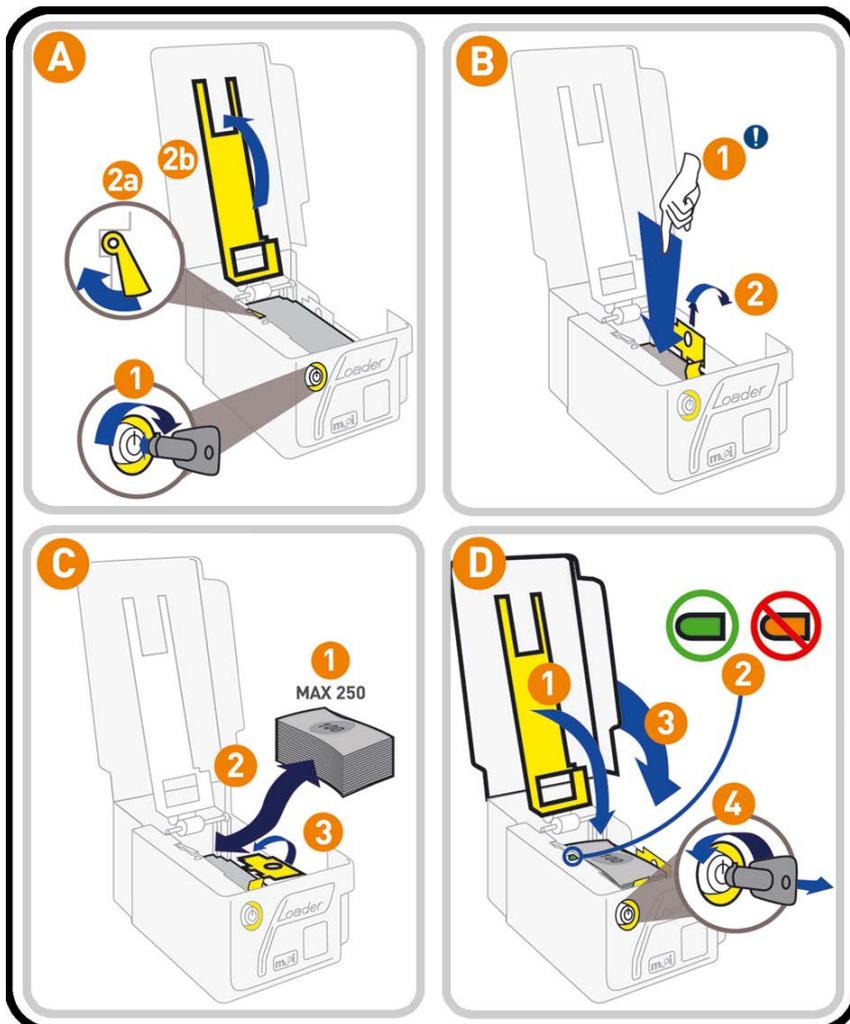


Lift (1) and flip (2) the lateral bill guide flap down. Ensure notes to be used in the loader meet all requirements of fitness in Table 1, then place a bundle of less than 250 banknotes into the loader. Reposition the lateral bill guide flap up.

**Caution:** MEI recommends to place the banknotes from the side.



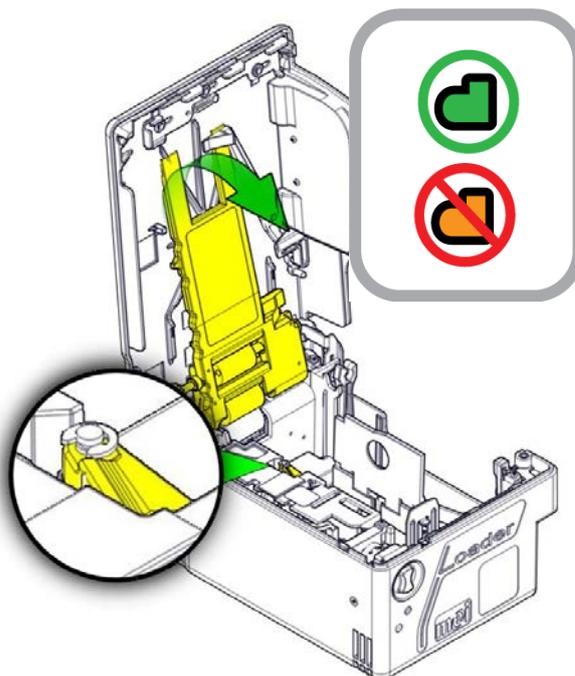
**Note:** To see banknotes criteria for the Loader Cassette, refer to page 62.



Reposition the “max level detection plate”.

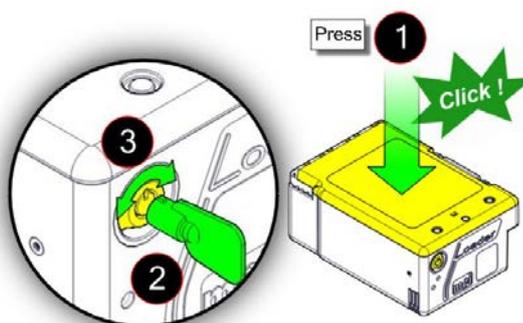
With the max level detection plate down, check that the bill level flag is green. If the flag shows red remove some banknotes until the flag turns green with the detection plate down.

**Caution:** do not over fill the Loader Cassette and do not force the “max level detection plate” closed.



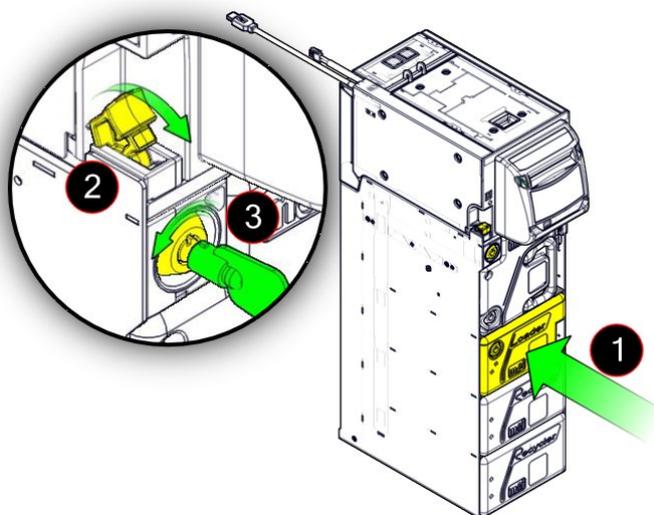
Close the Loader Cassette by slightly pressing the box (1), inserting the key (2) and slightly turning it clockwise (3), and then fully turn the key vertical in order to release the pressure plate mechanism.

A “click” will occur after the key is turned vertical and ensures that the Loader Cassette is correctly closed.



Put the Loader Cassette back in place (1).

Lock the Interlock System with lever (2) and lock (3) using the key.



<b>Capacity and banknote quality for the Loader Cassette</b>	
Maximum number of banknotes	250 +/- 50 notes Varies depending on the currency, the state of the banknotes and the climatic conditions.
Banknote width acceptance	Min. 60 mm to max. 81 mm (nominal) (+1 / -2 mm)
Banknote length acceptance	Min. 120 mm to max. 176 mm (nominal) (+1 / -2 mm)
Condition of banknotes accepted	<p>Cannot contain any of the following conditions:</p> <ul style="list-style-type: none"> <li>More than ¼ of the length of the border missing or folded,</li> <li>Holes, tears, folds,</li> <li>Writing, stains, spots, or stamps larger than 100mm<sup>2</sup>,</li> <li>Tape, staples, pins, foreign matter attached to the banknote,</li> <li>Machine washed,</li> <li>Excessively worn, limp or wrinkled,</li> <li>Two or more banknotes stuck together,</li> <li>Wet or damp banknotes.</li> </ul>



## Jam Clearing

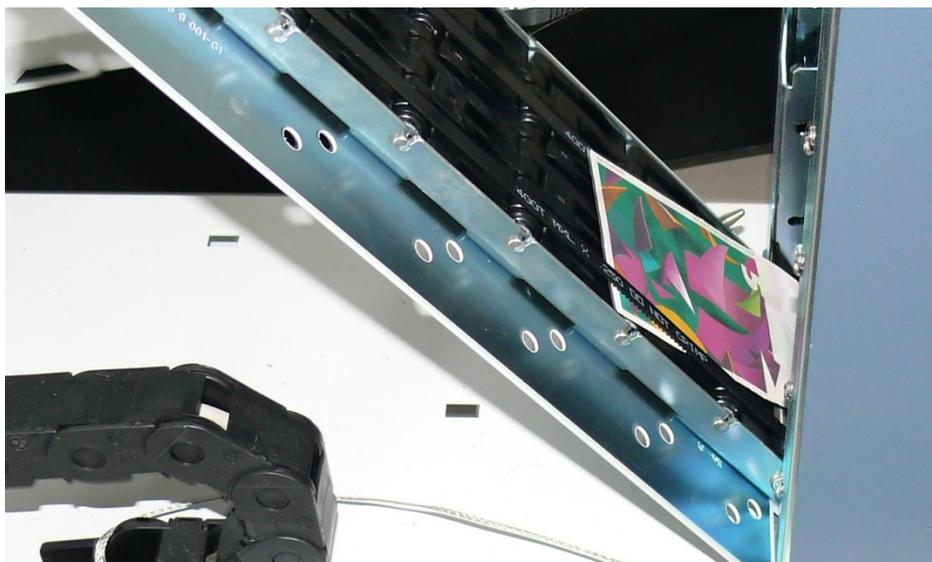
It may happen that a banknote is jammed in the iCASH 20. The following cases of jammed banknotes are easy to clear.

### In the Spine

Unlock and open the front door. Pull out the iCASH 20 completely. Open the spine door. Lift and hold up the yellow button and pull the door open.



Carefully withdraw the banknote, take care that the banknote does not fall behind the spine.



Close the door.

## In the Recognition Sensor

Unlock and open the front door. Pull out the iCASH 20 completely. Push on the yellow buttons...



...and open the recognition sensor door. Withdraw the banknote and close the sensor again.



### In the Recognition Sensor to Spine Interface

Unlock and open the front door. Pull out the iCASH 20 completely. Open the spine door (see page XX) and the recognition sensor door (see page before). Remove the banknote carefully.

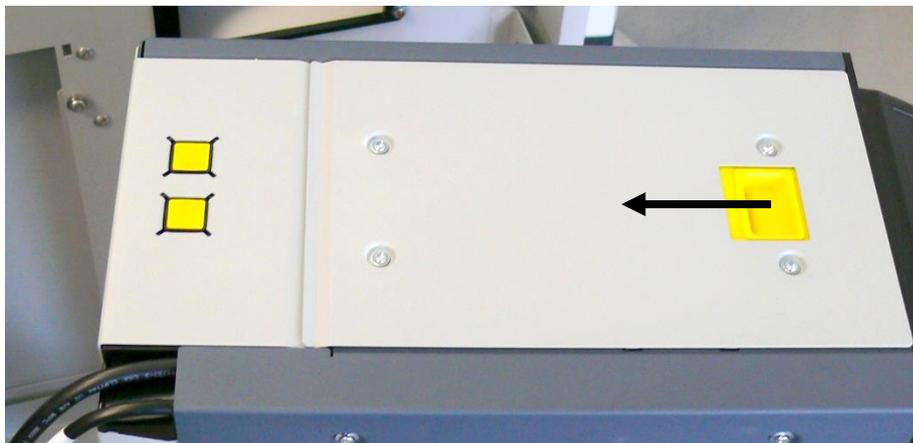


Mount the device in reverse order.

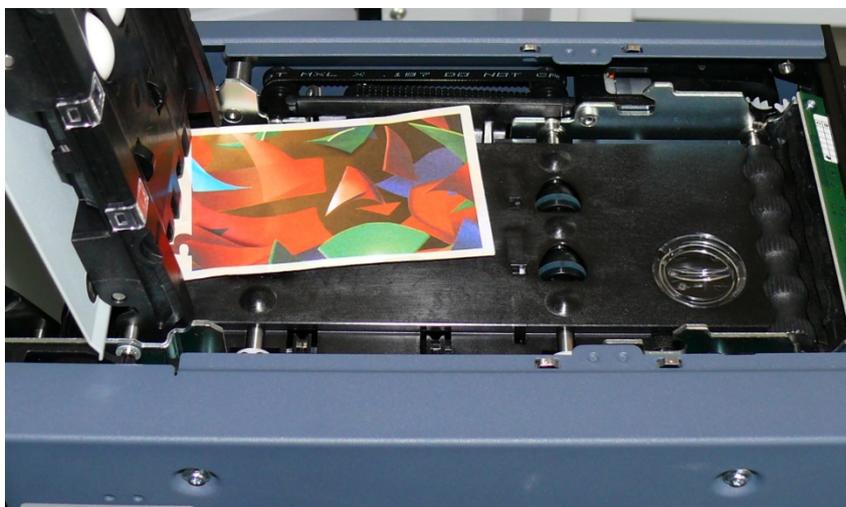
### In the Positioner, at the Inlet

Unlock and open the front door. Pull out the iCASH 20 completely. Open the spine door (see page XX), then open the recognition sensor and finally open the positioner door.

Lift and hold the yellow button and pull the door open.



Withdraw the banknote carefully.



Close the iCASH 20.

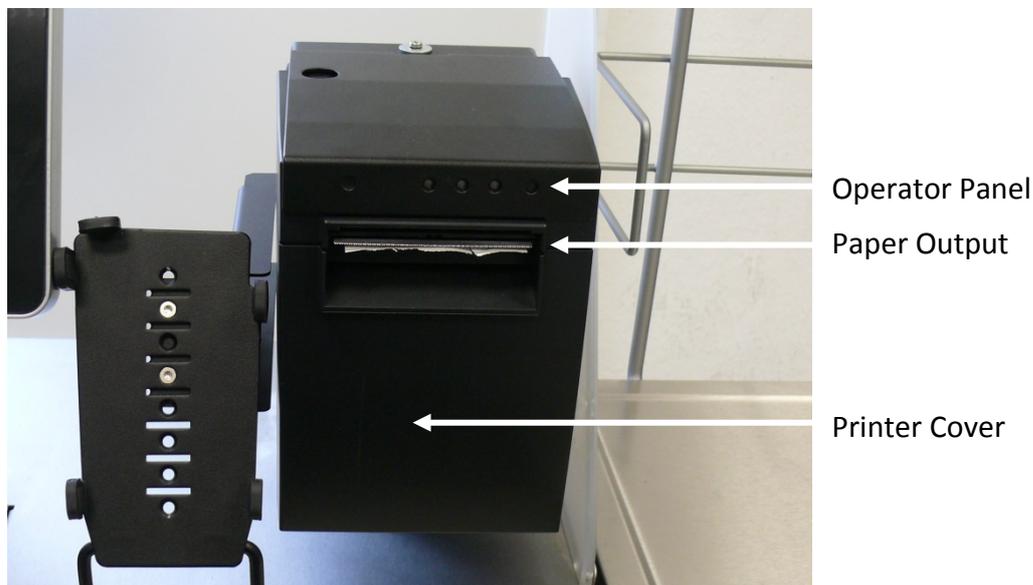
## Coin Module CINEO C1010

Unlock and open the front door. Grasp the CINEO C1010 on the green lever (see white arrow) and pull it out completely.



Find all relevant information in the User Manual CINEO C1010 on the Wincor Nixdorf Internet.

## Printer TH230+



## Safety Instructions



Do not touch the cutter and tear bar of the printer.



The print head is a thermal element and it is at high temperature during printing or just after operation, therefore please do not touch it and its peripherals for safety reasons.



The thermal head is an ESD-sensitive device. To prevent damage, do not touch either its printing part or connecting parts.



Do not allow the printer to start printing when there is no recording paper installed, otherwise the print head and platen roller will be damaged.

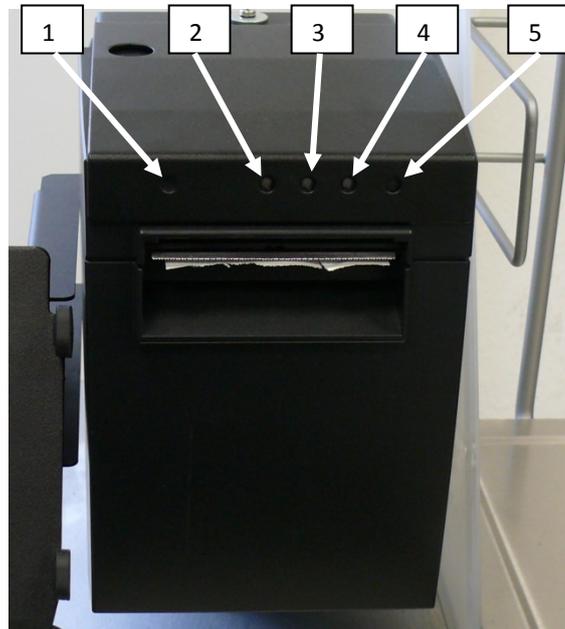
To ensure quality print and normal lifetime, use recommended or good quality paper.

Shut down the printer when connecting or disconnecting interfaces connectors to avoid damage to the control board.

Set the print darkness to a lower grade as long as the print quality is acceptable. This will help to keep the print head durable.

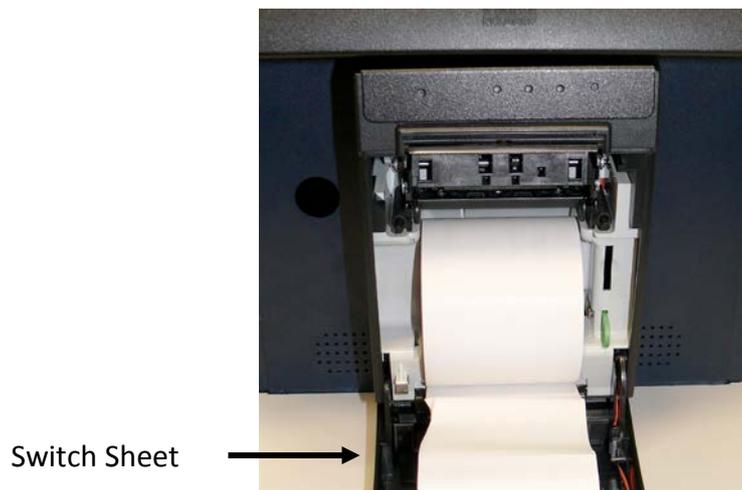
Operate the printer only with power supplies and cables approved by Wincor Nixdorf.

## Operator Panel



### 1 - OPEN

Press this button to unlock and open the cover. Thereby, the switch sheet flaps into an upright cover position.



If an error occurred do not open the cover with force.

Open the printer cover only if the cutter is in its home position. Otherwise the cutter or the cover may be damaged.

## 2 - Red ERROR LED

Red Error LED off	Normal condition
Red Error LED on	Not ready for operating. Printer cover is not closed or in combination with Yellow PAPER LED on, paper end is reached
Red Error LED blinking	An error occurred. Switch off the printer and on again. Contact your technical support if this does not work.

## 3 - Yellow PAPER LED

Yellow Paper LED off	Paper is properly inserted.
Yellow Paper LED on	Paper roll is near end.
Yellow Paper and red Error on	Paper end is reached.

## 4 - Green POWER LED

All LED off	Power is not stable
Green POWER LED on	Power is stable
Green POWER LED blinking	Printing speed may be low (*). If necessary contact your technical support
Green POWER LED flashes	Printer in idle mode

(\*) The printer will run with the lowest power value (48W) if a non current power supply unit from Wincor Nixdorf or an external power supply unit without automatic current identification is used.

With a suitable power supply unit type the maximal power value can be defined with the configuration menu from 48 Watt up to 90 Watt.

**LED Overview**

	<b>POWER green</b>	<b>PAPER yellow</b>	<b>ERROR red</b>	<b>Meaning</b>
	off	off	off	No power
Operation	on			Power on
	blinking			If necessary call for technical support
	flashing			IDLE mode (power saving)
		off		Paper properly inserted
Paper		on		Paper near end
		on	on	Paper end
Error			blinking	If necessary, call for technical support
			on	Cover not closed

**5 - FEED**

If you push this button once and release it, the printer feeds paper for one line (1/6 inch).

If you push this button and hold it down, the printer feeds the paper as long as the button is not released.

The button can be locked by the application software and then will be without function.

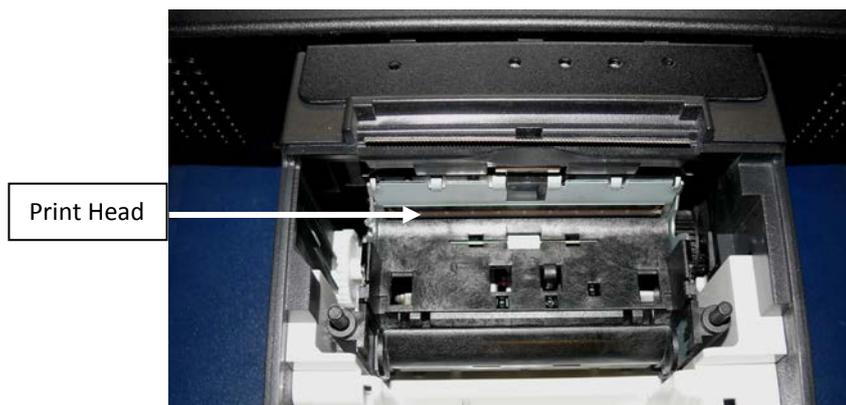
## Print Head / Rubber Roller Cleaning

Clean the print head and the rubber roller at least every three months. In case of an intensive use of the printer clean both items more often to guarantee a stable print quality.

Open the printer cover and remove the paper-roll; the rubber roller and the print head mechanism are then visible.

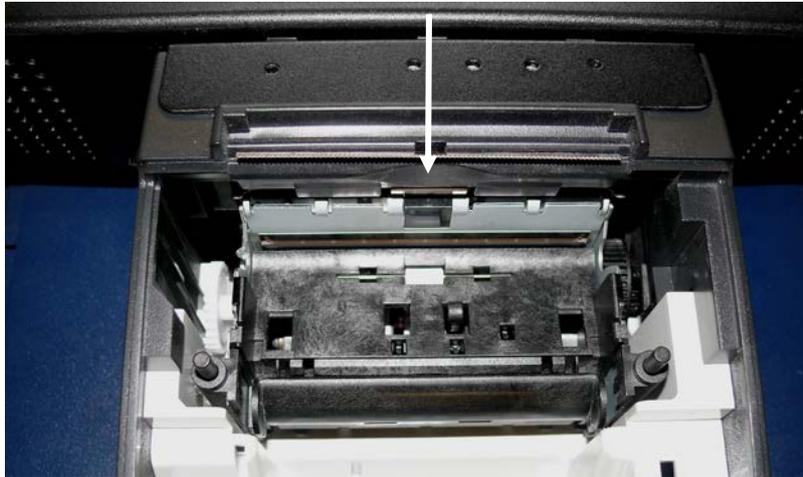


Let the print head cool down before cleaning it.



Clean print head and rubber roller with a soft lint-free cloth moistened with pure Isopropyl alcohol (e.g. ISOPADS which can be ordered from Wincor Nixdorf).

Visually inspect the print head. If you can still see dirt, the cleaning procedure must be repeated. You can identify the relevant and important thermal element zone by the thin line crossed by wires.



Pay attention not to damage the paper end sensor when cleaning the print head.



Do not touch the rubber roll with your fingers.

While cleaning turn the rubber roller by hand with the lateral gear wheel make sure that the entire roller will be cleaned.



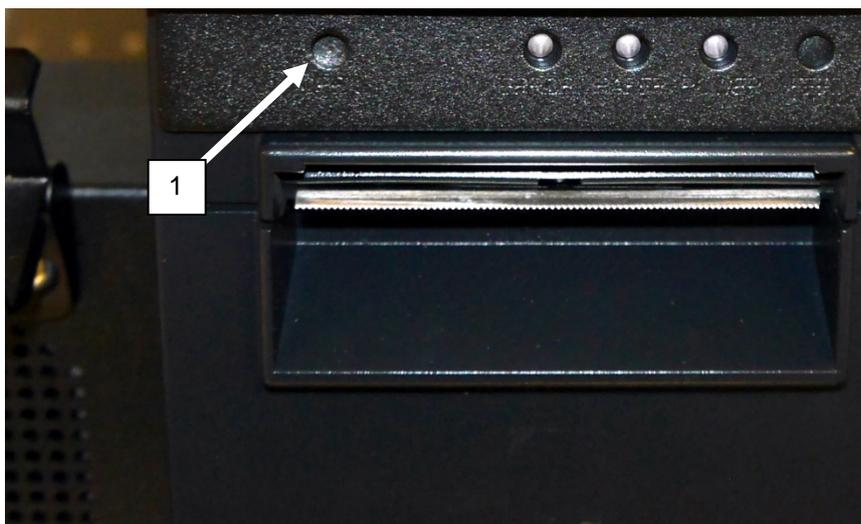
Cleaning the print head not properly may cause an early failure.  
Wait until the isopropyl alcohol has evaporated.

Insert the (new) paper-roll and close the cover. Print out a test ticket (see application handbook) and verify the printing quality (density, alignment and consistency).

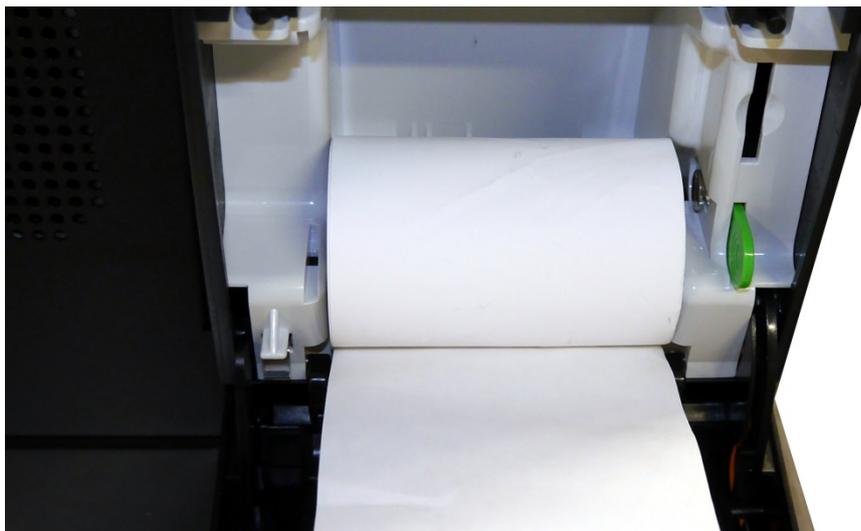
## Paper Roll Exchange

For a paper roll exchange follow the steps below:

- Open the BEETLE /iSCAN EASY (NON CASH only).
- Open the printer cover with a thin tool (1).
- Remove the (nearly) empty paper roll and any residual paper.
- If necessary clean the print head and the rubber roller.
- Unwind the outer layer (winding) of the paper roll.



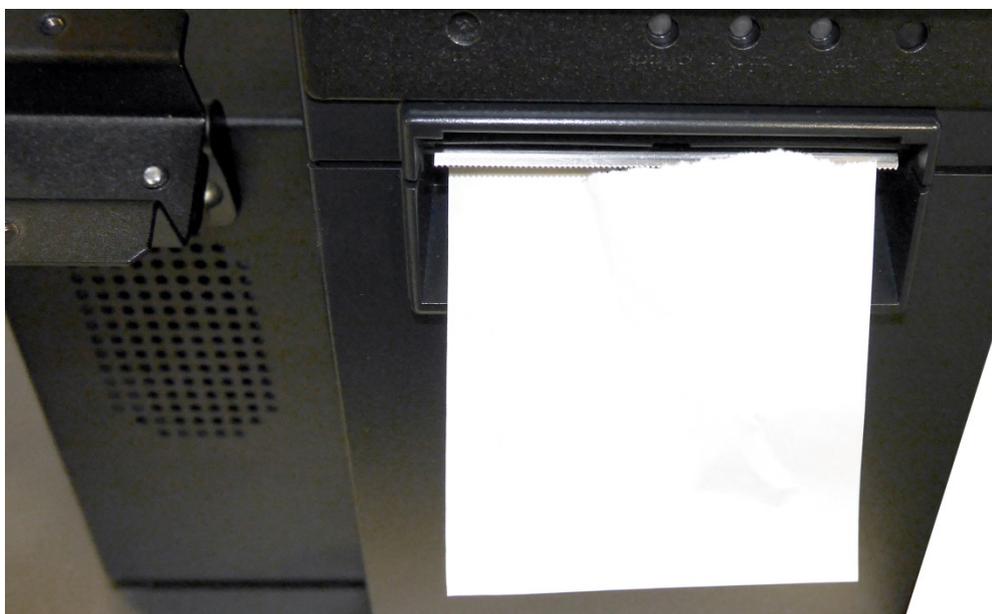
Insert the paper roll.



Lay the unwinded paper over the front edge of the printer and close the printer cover. Press on the middle of the cover until it audibly and distinctly locks into place.



Tear off residual paper at the tear-off edge.



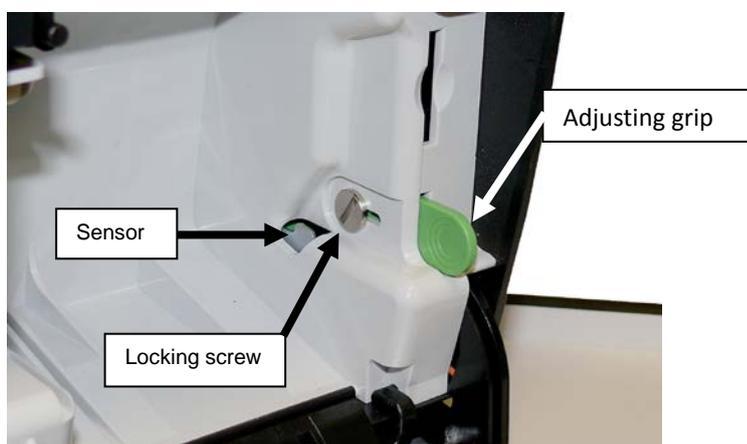
## Paper Near End Sensor Adjustment

The paper end premonition is a control function. It allows to adjust a predefined amount of remaining paper on the roll.

The paper end premonition depends on the core diameter and the paper thickness of the paper roll in use.

You can adjust the remaining amount of paper yourself follow the steps below:

- Open the printer cover.
- Remove the paper roll.
- Loosen the locking screw at the inner wall of the printer for instance with the aid of a coin (do not remove the screw).



Move the adjusting grip to determine the remaining paper amount. A lower distance mark (adjustment grip downwards) will cause a lower amount of remaining paper and vice versa:

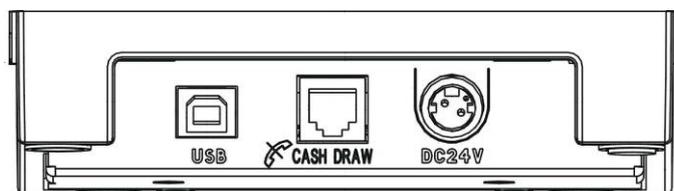
The scale reaches from 0.5mm to 12.5mm.

After determination of the distance mark:

- Tighten the locking screw
- Insert the paper roll
- Close the printer cover and lock it

## Connector Variants

USB/CASH DRAW/DC24V



## Energy-saving Mode

If the TH230+ is switched on but without a print job it stays in standby mode, which means, that all functions of the printer are powered with low voltage to be ready for operation.

In order to save more energy the printer changes into idle mode after an adjustable waiting time. Under idle condition the least amount of energy will be consumed. The mode will be indicated by flashing of the POWER LED.

If the printer receives print data it will change into full powered printing mode. Having done the print job the TH230 will turn to standby mode and then to idle mode again.

In the delivery status of the printer the function “idle mode” will be deactivated. The function and the according waiting time must be enabled in the configuration menu or via software.

## Technical Data

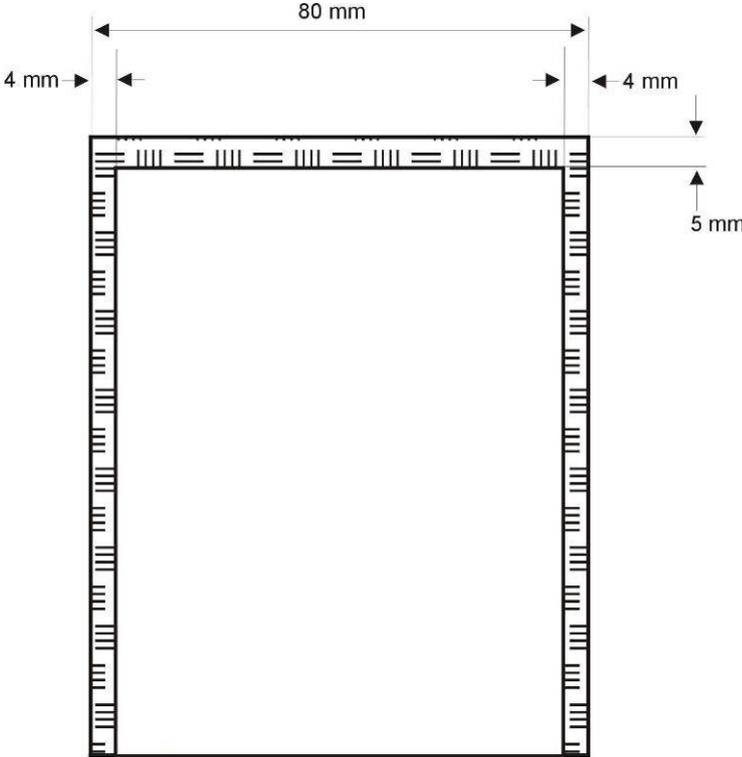
Technology	High-speed thermal print
Resolution	8 dots/mm (203 dpi)
Printing speed	One colour: 220 mm/s, Two colours: 110 mm/s TH230+ draft mode up to 300 mm/s (reduced density)
Cash Drawer Interface	6pin RJ12, 1A@24V max.
Interface Options	USB 2.0 full speed, PoweredUSB, RS232c, Ethernet
Cutter	Material: tempered steel Speed full cut: < 300ms
Paper Transport up to 12mm backwards	Forward; to use paper to full capacity after cutting: (approx. 3.5 lines at 7.52 lpi)
Control Functions	Print head temperature control with adjustment of print speed Paper near end control and paper end control Paper cutter error message Printer cover open/closed Self test with printout
Option	Paper width 57,5mm, Print width =51mm = 408 dot
Housing Colour	light grey or black
Power Supply	24 V DC Automatic and manual capacity control: 48 – 110 Watt
Dimensions	148 x 145 x 195mm (H x W x D)
Weight	approx. 2kg (w/o paper roll)
Features	Simple paper roll exchange: Optional two colour print with special paper (100mm/sec) Paper near end message: adjustable by user

Statistical Data	Total number of dots Total line feeds Total number of cuts Max. head temperature Paper jam counter Cutter error counter Thermistor error counter High voltage/low voltage error counter Number of firmware updates Power on time in hours Power on counter
Reliability	TH230+ 70 Mio 3 Mio 150 km
Graphic Feature	TH230+ is fully graphic-compliant

### Paper Specification

Paper width	79.5mm - 80mm optionally 57.0 - 57,5mm
Paper weight	55g/m <sup>2</sup> ± 5 g/m <sup>2</sup>
Paper thickness	0.055mm – 0.08mm
Thermo-Coat	Outside of paper roll
Paper roll outer diameter	90mm max.
Paper roll width	80.3mm max.
Paper length	~100m
Core size	Core diameter: 10mm +2mm Wall thickness of the core: 2mm ± 0.3mm; Paper end not glued to core. Length of paper fold over at core: max 35mm

**Print Area**

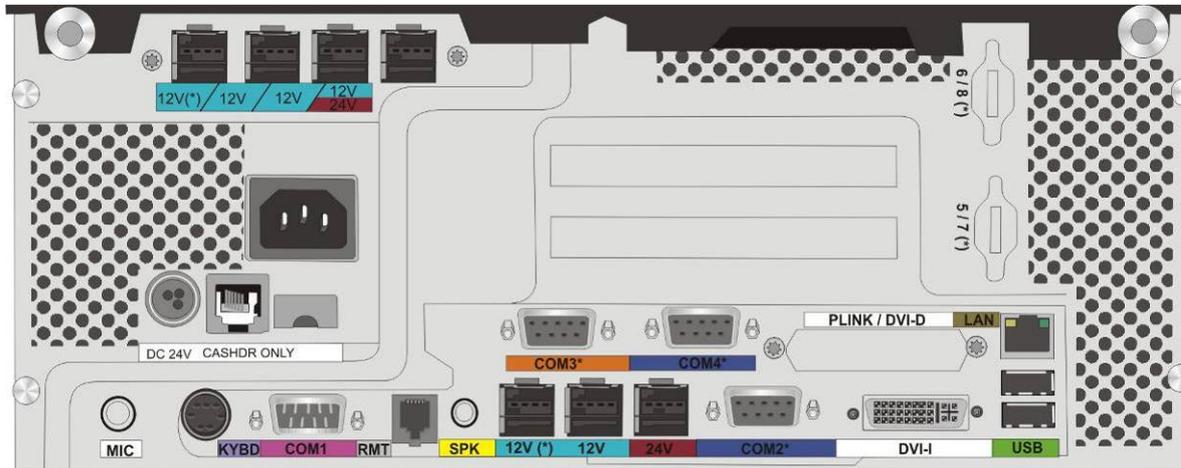


For optional paper width 57,5mm,  
print width =51mm = 408 dot

## BEETLE /M-II plus (G41 Motherboard)

The BEETLE /M-II plus controls several devices in the BEETLE /iSCAN EASY, such as printer and scanner.

### Interfaces BEETLE /M-II

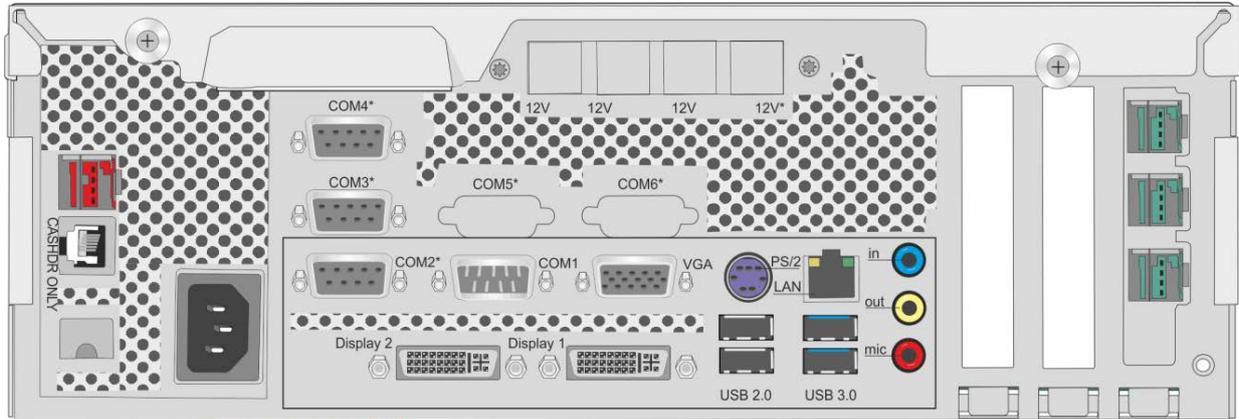


**i** Find more information about BEETLE /M-II on the Wincor Nixdorf Internet.

## BEETLE M-III

The BEETLE M-III controls several devices in the BEETLE /iSCAN EASY, such as printer and scanner.

### Interfaces BEETLE M-III



Find more information about BEETLE /M-III on the Wincor Nixdorf Internet.

## Scanner

### Cleaning the Bin

**i** Clean up the scanner bin as needed.

If liquid runs into the device, the bin under the scanner will absorb it. To clean it up, remove the bin as shown in the following pictures.

Tilt the display to a position shown in the picture below to remove the scanner cover.



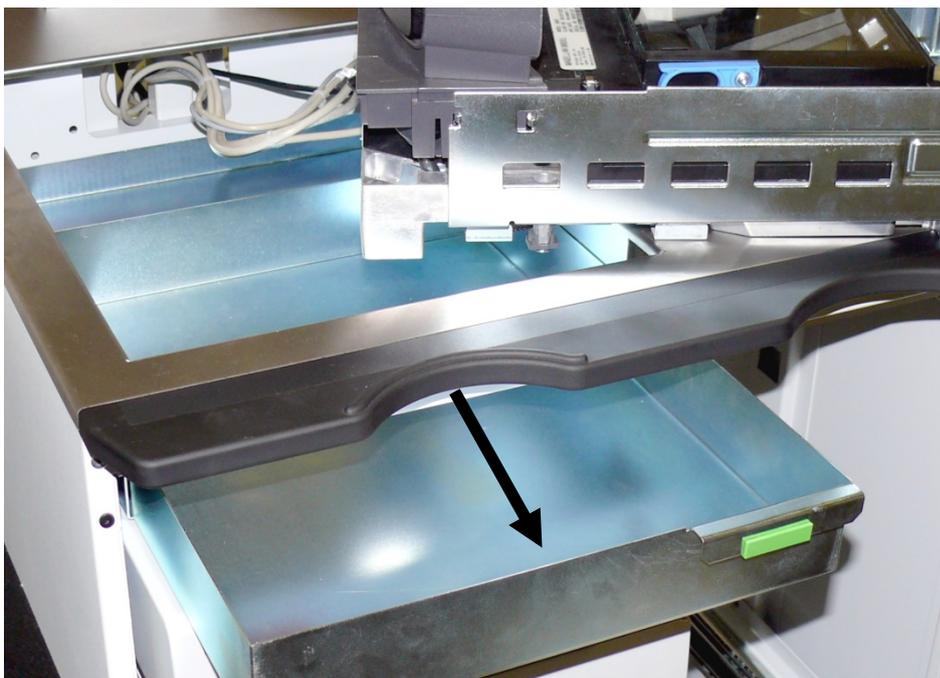
Grasp the cover at the lever and remove it.



Grasp the lever at the scanner and lift it out of the housing. Take care of the cables.



Open the front door and remove the bin forwards.



Clean it up and mount the device in reverse order.

## **Scanner Maintenance**

Keep scanner window clean. This will improve productivity and reduce rescans.

## **Scanning Items**

To scan items, slide or push them through the scan zone. The scanner will work equally well with either a left-to-right or right-to-left motion through the scan zone.

## **Proper Scanning Technique**

The scanner was designed to provide the ultimate in ergonomic enhancements for Point-Of-Sale (POS) scanning. To take advantage of these advancements.

Practice the techniques below to improve scanning efficiency:

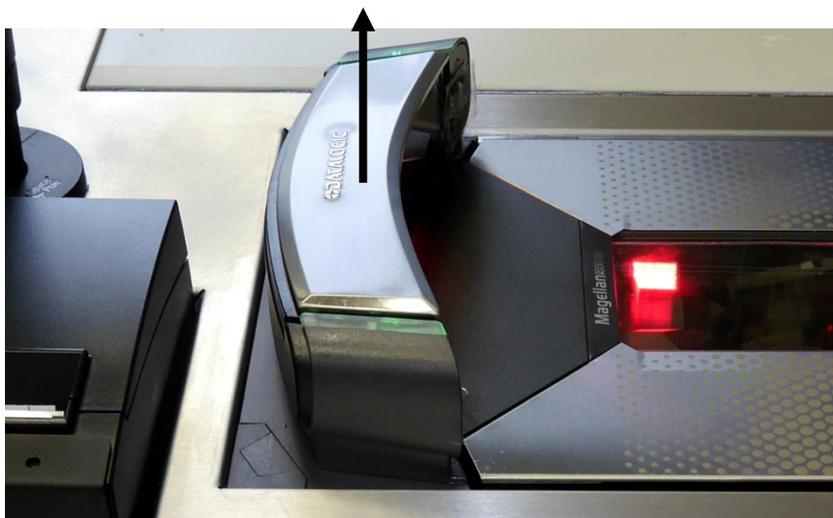
- Move the product with the barcode side across the window.
- Develop efficient scanning motions, not necessarily faster hand movements.

## Scanner (BEETLE /iSCAN EASY Hybrid)

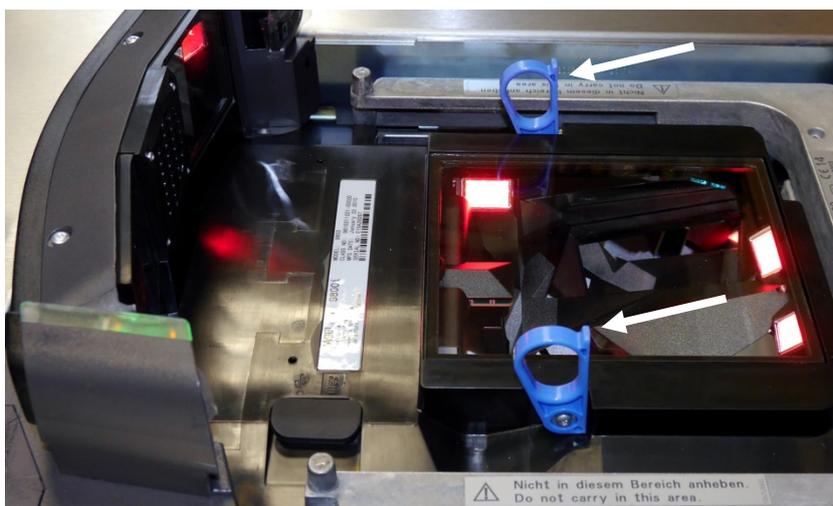
### Cleaning the Bin

**i** Clean up the scanner bin as needed.

Grasp the cover at the lever and remove it.



Lift up the scanner at the blue levers and place it on the BEETLE /iSCAN EASY housing.



Clean the bin.

Mount the device in reverse order.

## BA92/93 (with resistive Touch Screen)

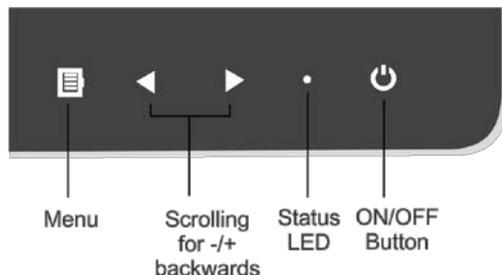
### General

The resistive TFT Touch Screen is constructed of a hard-coated polyester top sheet that is overlaid on a conductively coated glass layer.

Voltage is applied to the top sheet. As the user touches the screen, the top sheet compresses into contact with the glass layer, and current flows to the four corners in proportion to the distance from the edge. The controller then calculates the position of the finger or stylus, based on the current flow. Because the controller derives both the "X" and "Y" touch coordinates from the stable glass layer, the accuracy and operation of the touch screen is unaffected by damage to the top sheet caused by extended use or neglect.



## Operator Panel



## USB Interface

A Plug and Play interface (type A) for connecting peripherals during operation, e.g. USB sticks or a keyboard.

## On Screen Display (OSD)

### Menu

Via the menu you can set the loudness, brightness, contrast and colour.

### Scrolling

The arrows serve for scrolling forwards or backwards in the menu items.

### LED

dark	Power off
green	Power on
orange (not flashing)	Power save mode the LED lights in the standby mode
red	Out of Range

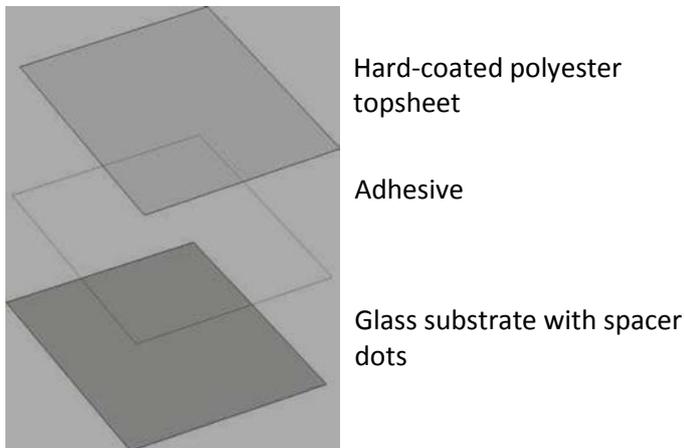
## ON/OFF Button

With this button you can switch the display on or off.

The optional devices supported by the USB HUB are electric powered. Only the data transfer is separated.

When the BA92/BA93/BA93W is connected to a BEETLE- system, the button also switches the system on or off, provided that the system supports the feature.

## Construction of the resistive Touch Screen



## How to Operate

Touching the touch screen has the same effect as clicking the left mouse button. You only need to apply a little pressure with the fingertip. In this resistive process not only fingertip contact is recognized. The screen does react in any way if touched, for example, with a stylus. The recommended material for a stylus is polyacetal. The stylus should have a minimum spherical radius of 0.8 mm and contain no sharp edges or burrs that may cause damage to the top sheet.

## Cleaning Instructions

Always turn off the system before cleaning. The surface of your Touch Screen should be cleaned with a water-based solvent or a non-abrasive cleaner.



Do not use solvents containing acetic acid or methylene chloride. Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.

## Cleaning Instructions

- Always **turn off the system** before cleaning.
- The glass surface of your **Touch Screen** and the **scanner window** should be cleaned with a mild, abrasive-free, commercially available glass cleaning product.
- All pH neutral materials (pH 6 to 8) are good for cleaning. Cleaners with pH values 9 to 10 are **not** recommended. Cleaning with water and isopropyl alcohol is possible as well.
- Do **not** use solvents containing acetic acid.
- Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen and the scanner window.
- Clean the **housing** of the K-one with a vacuum cleaner or soft cloth.



Wrong maintenance may cause damages to the screen, which are not covered by warranty.

## Approved Cleaning Materials

The items listed below can be ordered from Wincor Nixdorf branch office or your Wincor Nixdorf sales partner.

Product Name	Order Number	Explanations
Wincor Cleaning wipes	01750097332	For all plastic and metal surfaces, not for TFT screens, dispenser box with 100 wet cloths
Wincor TFT,Screen Clean wipes	01750097334	For TFT/LCD Screens, does not contain alcohol, non-flammable, 50 cloths wet and 50 cloths dry
Wincor Air Duster 400g	01750108425	Non-flammable
Cleaning cloth with Isopropyl	01750104065	100 cloths with isopropyl
WN Cleaning Card for Hybrid Card reader	01750016388	Wet cleaning card for all chip- and hybrid card readers

Please note the manufacturer's specifications on the packaging and on the information sheet included in the packaging. The product may be damaged or soiled if materials are used that are not approved or if they are used improperly.

## Appendix

### Technical Data

#### General

Dimensions (H x W x D) in mm

- 1,793 x 750 x 760 (with status light)

Weight

- Approx. 150 kg (depending on configuration)

#### Currencies

- Euro, US Dollar, GB Pound
- Further currencies on request

#### Payment Functionalities

##### iCASH 10 - Note Recycling

- Recycling of up to 3 denominations
- 3 stationary drums
- 1 compact cassette
- Maximum capacity per drum module: approx. 220 notes
- Maximum filling height cassette: 78 mm (standard cassette)
- Input of bundles of up to 30 notes
- Output of bundles of up to 30 notes
- Picking rate of up to 4 notes per second for deposits/withdrawals
- Maximum/Minimum note size in mm: 170 X 55/120 X 60
- Note validation in compliance with ECB framework

**iCASH 15e - Coin Recycling**

- Recycling of up to 8 denominations
- Euro capacity
  - 220 x 2 euro
  - 250 x 1euro
  - 220 x 50 cent
  - 290 x 20 cent
  - 360x 10 cent
  - 360x 5 cent
  - 540 x2 cent
  - 540 x 1cent
- 1 Overflowbox with a capacity of up to 150 coins
- Bulk deposit of up to approx. 50 coins
- Refill cassette (optional)
- Dispensing of up to approx. 50 coins
- Processing rate:
  - Deposits: approx.3 coins per sec.
  - Dispensing: approx.6 coins per sec.
- Cash authentication module
- Foreign object detection

**Cashless Payments**

- Adaptation of various EFT terminals
- Signatore pad/fingerprint scanner (optional)
- NFC terminals (optional) Alternative Payments
- Coupons/vouchers (optional)
- Deposit receipts (optional)
- Magnetic swipe card reader (optional)

**Scanning/Printing Functionalities**

Integration of various scanners

Integrated fruit scale (optional)

Handheld scanner (optional)

Printer (receipt, MF, coupon)

**Customer interaction**

15" TnLCD touch; wide screen and

2nd customer display (optional) Speaker integrated

Proximity sensor (optional) Illumination for input and output slots

**System unit**

System

- BEETLE /M-III

Software

- Windows, Linux, WNLPOS, POSReady
- Standard interface to POS applications
- Graphical user interface

**Chassis**

Customer-specific color scheme (optional)

Compliant with ADA II

**Security****Security scale**

- Maximum load:
  - 1bag scale: 30kg @ 2 grams resolution
  - 2bag scale: 60kg @ 2 grams resolution
  - DIY scale: 180kg @ 5 grams resolution
- Flexible bag holder concept
- Specific DIY scale concept
- Self-learning weight database

**Three Security Layers**

- First: access to system housing
- Second: access to cash cassettes
- Third: access to cash

**Attendant Logon**

- Via dallas key or barcode
- Alternatives possible

**Status Lights**

EAS deactivation (optional)

**Operating Conditions**

Power supply

- Supply voltage range: 110 -120V; 220 - 240 V
- Nominal frequency: 50/60 Hz

## Environmental Requirements

<b>Operating Temperature</b>	
Ambient Temperature:	5 °C – 35 °C
Humidity:	5% r.h. (1 g/m <sup>3</sup> ) – 85% r.h. (25 g/m <sup>3</sup> )
Temperature change:	0.5 K/min (max. 7.5K/30 min)
<b>Storage Conditions</b>	
Ambient temperature:	5 °C – 40 °C
Humidity:	5% r.h. (1 g/m <sup>3</sup> ) – 85% r.h. (25 g/m <sup>3</sup> ) 0.5 K/min
Temperature change:	0.5 K/min (max. 7.5K/30 min)
<b>Transport Conditions</b>	
Ambient Temperature:	-25 °C – 60 °C
Humidity:	15% r.h. (1 g/m <sup>3</sup> ) – 98% r.h. (32 g/m <sup>3</sup> )
Temperature change:	-25 °C to 25 °C

## Cleaning Instructions

- Always **turn off the system** before cleaning.
- The glass surface of your touch screen and the scanner should be cleaned with a mild, abrasive free, commercially available glass cleaning product.
- All pH neutral materials (pH 6 to 8) are good for cleaning. Cleaners with pH values 9 to 10 are not recommended. Cleaning with water and isopropyl alcohol is possible as well.
- Do **not use** solvents containing acetic acid.
- Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.
- Clean the housing with a vacuum cleaner or cloth.

A wrong maintenance may cause damages to the screen, which are not covered by guarantee or warranty.

## Maintenance and Service

When carrying out work on the components and modules that carry an electrical charge, this equipment must first be disconnected from the power supply.

## Cleaning Materials: Order Numbers

The items listed below can be ordered from Wincor Nixdorf branch office or your Wincor Nixdorf sales partner.

Product Name	Order Number	Explanation
Cleaning set for EDP devices: 125ml plastic cleaner w/o alcohol 125ml TFT/LCD/screen cleaner 35 dust cloths 3 keyboard swabs for places difficult to reach 1 keyboard sponge	01750097335	For cleaning and maintaining keyboards and varnished and plastic-coated housings
Damp cleaning cloths Dispenser box with 100 cloths	01750097332	For cleaning and maintaining delicate EDP devices, keyboards and housings
Damp cleaning cloths Antistatic and fluff free Dispenser box 60 cloths	01750097334	For cleaning display panes
Compressed air spray PRESSAIR 400ml bottle w/o valve, 70cm hose	01750097331	Cleaned compressed air, CFC-free, for removing loose dust and dirt particles
Cloth with ISOPROPYL 1000 pieces	01750104065	Pure isopropyl alcohol for cleaning coin validators, displays etc.
Cleaning card	01750016388	For cleaning magnetic heads and chip contacts in ID card readers

Please note the **manufacturer's specifications** on the packaging and on the information sheet included in the packaging. The product may be damaged or soiled if materials are used that are not approved or if used improperly.

## Certificates

### CE Marking



This device complies with the requirements of EEC directive 2004/108/EEC with regard to "Electromagnetic Compatibility" and 2006/95/EEC, "Low Voltage Directive" and RoHS directive 2011/65/EU.

Therefore, you will find the CE mark on the device or on its packaging.

**Important:** Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

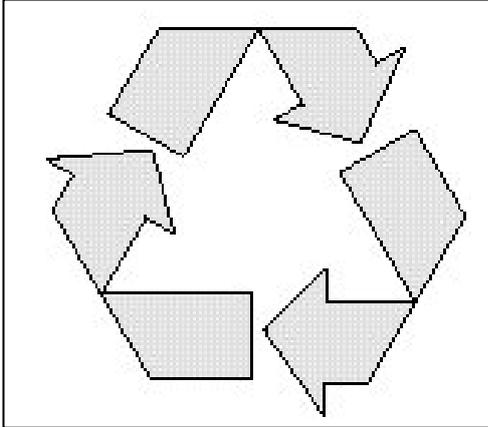
### FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications not authorized by the manufacturer may void users authority to operate this device. This class A digital apparatus complies with Canadian ICES-003.

*Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.*

## Recycling the BEETLE /iSCAN EASY



BEETLE /iSCAN EASY was designed according to the Wincor Nixdorf standard "Environmentally Conscious Product Design and Development".

BEETLE /iSCAN EASY is manufactured without the use of CFCs and CCHs and is manufactured to a great extent out of materials and components which are recyclable.

For recycling purposes do not attach any additional adhesive labels to the device.

Wincor Nixdorf disposes of old devices in an environmentally responsible manner at a recycling center that is ISO 9001 and ISO 14001 certified, as is the entire company.

Follow your local regulations on the disposal of toxic waste.

Your Wincor Nixdorf vendor will answer any questions you have concerning returns, recycling and disposal of our products.

Wincor Nixdorf International GmbH  
D-33094 Paderborn

**Order No.: 01750276430A**