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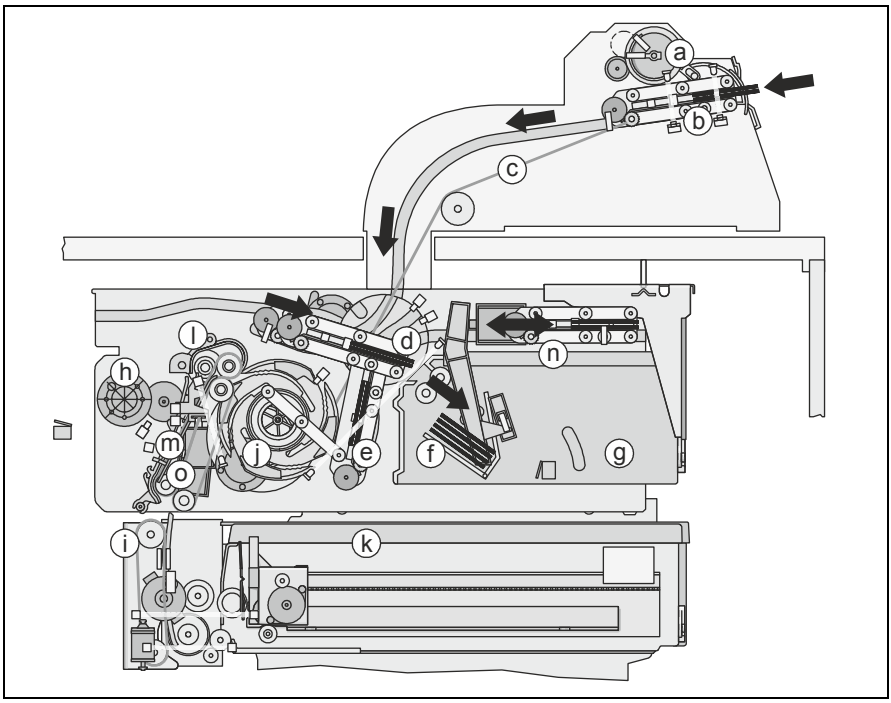
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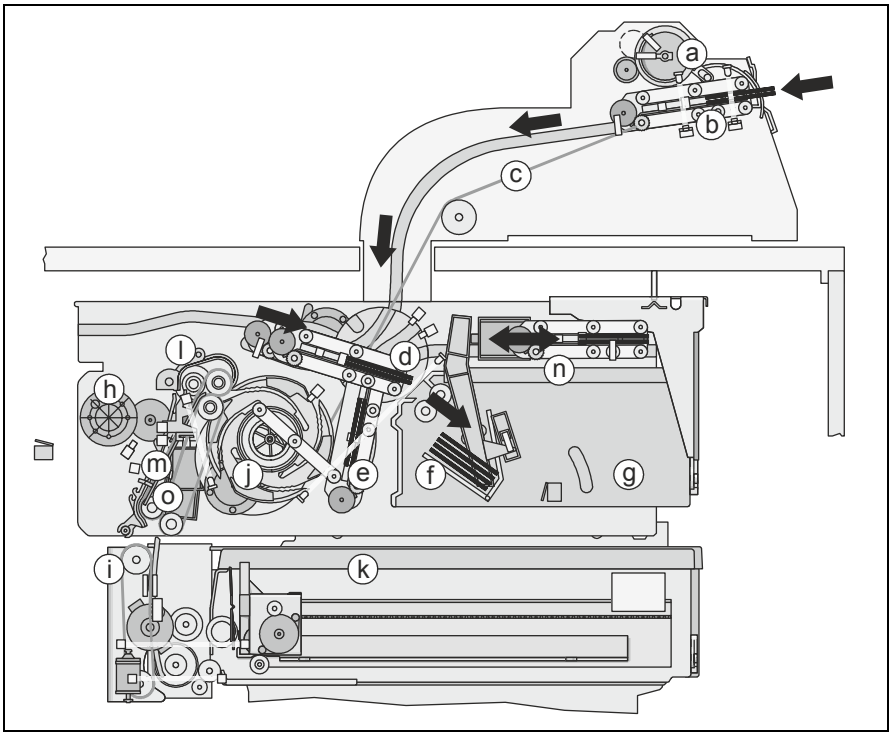
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# Bundle retract



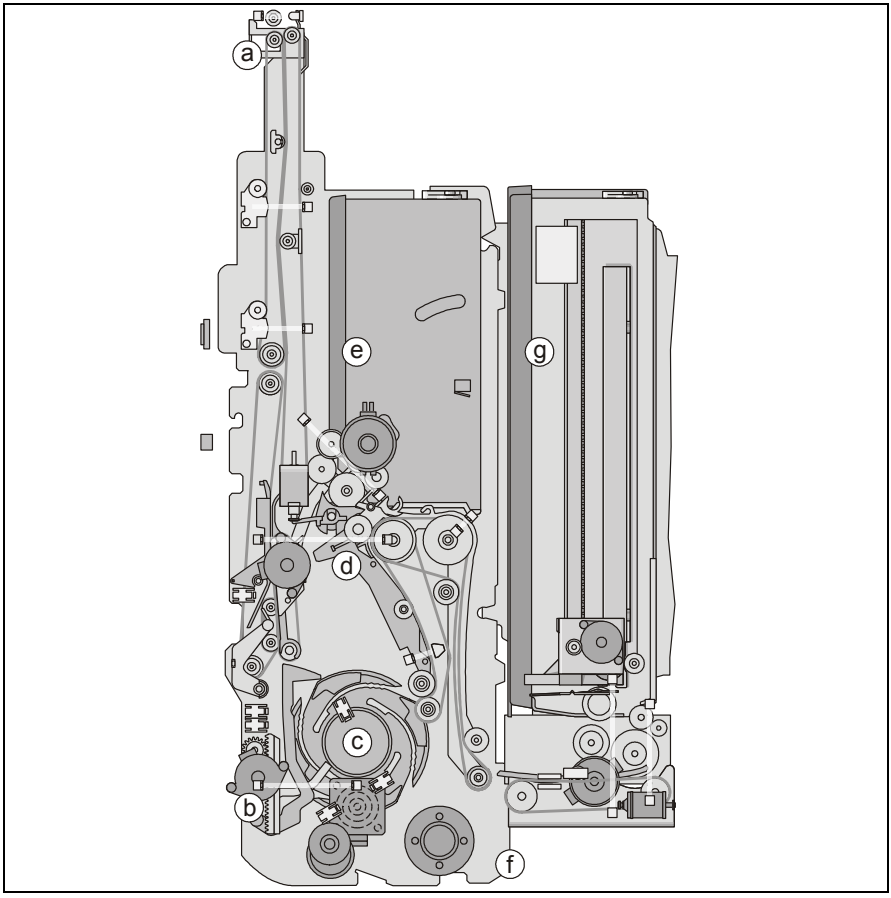

1. - 8. Processes as the dispensing in the direction of the customer (vertical Frontload)
9. Notes don't get removed in the defined waiting time!
10. Retract of the notes in the cash-out position (b)
11. The shutter closes
12. Clamps moves in the direction of the stacker (c)
13. Switching reject/retract box
14. Routing disk takes the horizontal dispensing position Frontload (d)
15. Clamp moves in the direction of the dispensing (horizontal Frontload) (n)
16. Routing disk moves to the reject/retract position (d)




17. Clamps moves in the reject/retract position
18. Routing disk moves to the reject/retract position "Block the route" (d)
19. Clamps moves in the reject/retract cassette as far as possible
20. Routing disks turns in the reject/retract position and moves the clamp to its reject/retract position by that
21. Transport of the bundle in the retract box of the reject/retract cassette (f)

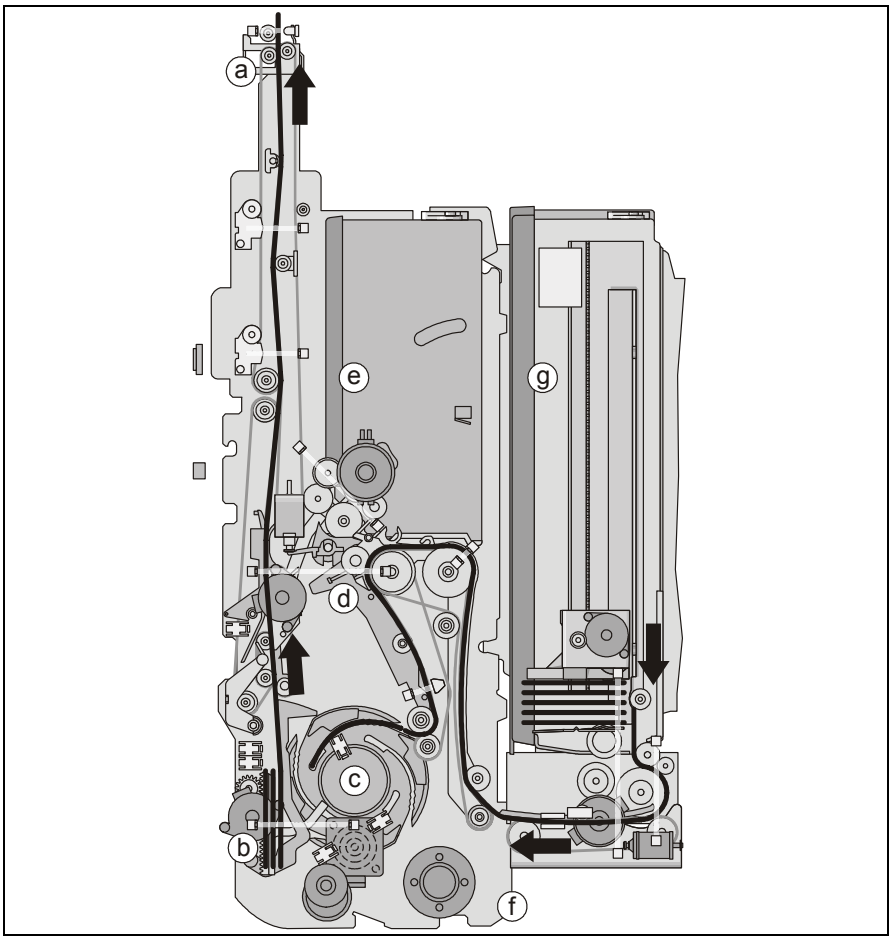
# Processes in the VCMD (schematic)

In the following, the most important processes in the VCMD are shown step-by-step and described.



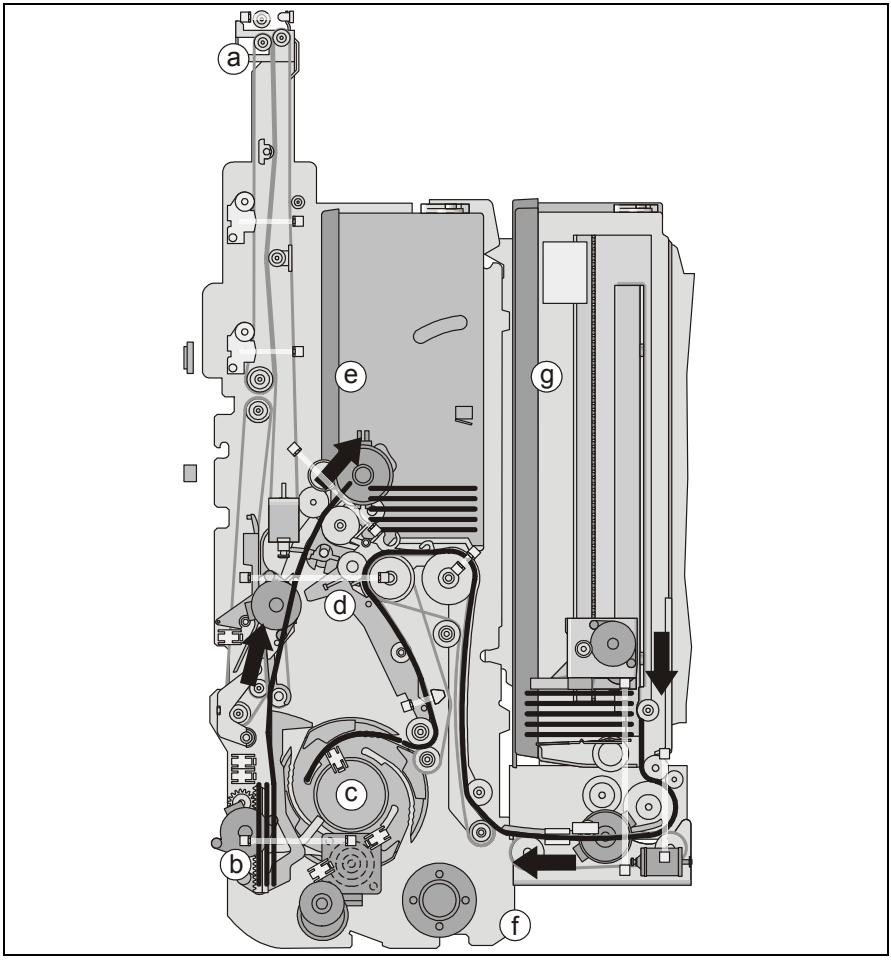

a Cash-out position
b Stacking position
c Stacker wheel
d Single reject switch
e Reject compartment of the reject cassette
f Multiple-note detection unit
g Cassette 1

# Withdrawal



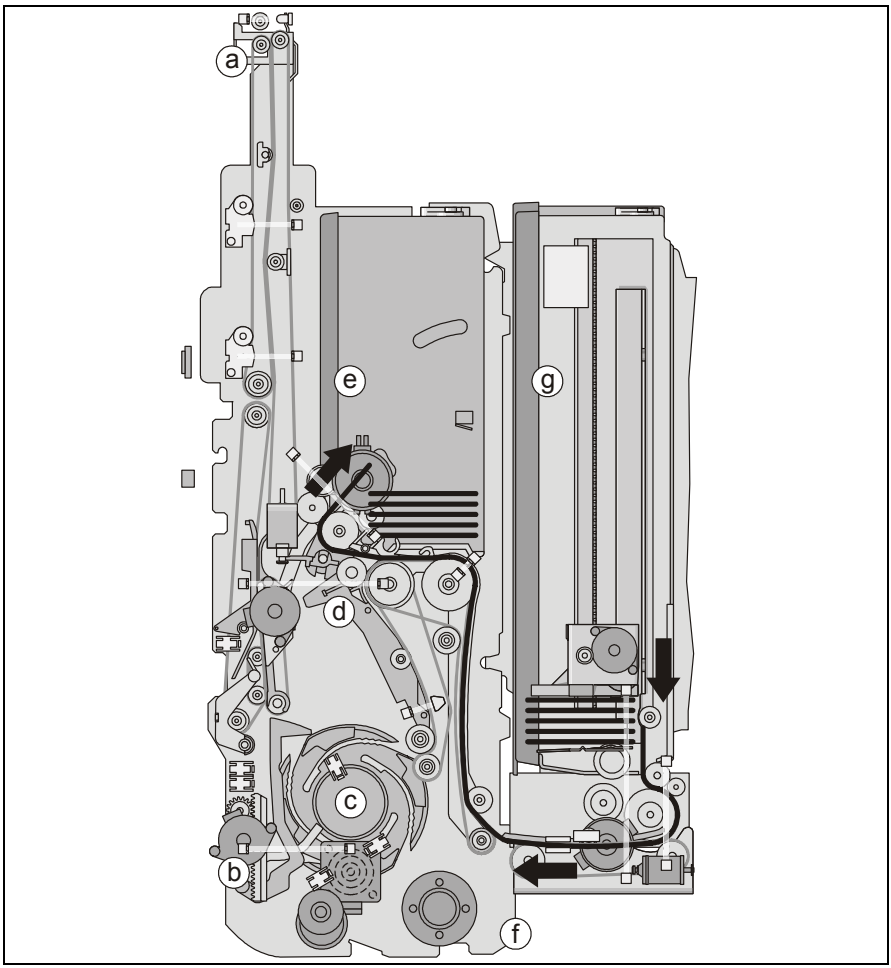

1. Dispensing of the requested banknote number one after another from every cassette (overall max. 60) (g)
2. Transport of the single notes to the multiple-note detection unit (f)
3. All 'good notes' are stored using the stacker wheel (c) in the stacking position (b)
4. Transport of the bundle to the cash-out position (a)
5. Note output by the customer

# Bundle reject




1. Dispensing of the requested banknote number one after another from every cassette (overall max. 60) (g)
2. Transport of the single notes to the multiple-note detection unit (f)
3. All 'good notes' are stored using the stacker wheel (c) in the stacking position (b)
4. Transport of the bundle in the reject compartment of the reject cassette (e)

# Single reject




1. Dispensing of the requested banknote number one after another from every cassette (overall max. 60) (g)
2. Transport of the single notes to the multiple-note detection unit (f)
3. If a 'bad note' gets recognized, it is controlled with the single reject switch (d) into the reject compartment of the reject cassette (e).

# Processes in the CMD-V4

## Start-up behavior

With Reset or after the power up, you can check whether the CMD-V4 is ready to operate, but this can only work if the command has been executed without errors!

After a device reset the CMD-V4 is in a defined state.

The performance of a command is aborted when the first error is detected. Error causes can be detected with the status display on the controller (see chapter "Troubleshooting").

### Controller test

During the reset the same routine runs as during the power up. But the controller test will not be performed. The controller test needs approx. six seconds and is ended with the status display <-->. In the event of an error, operation with the status code <10> (Controller defective) will be interrupted.

### Firmware test

The validity of the downloaded firmware is checked. If necessary, operation with the status code <11> (No firmware) will be interrupted.

### Memory reset

The internal markers are reset.

In addition to the general storage area, there are also program and parameter areas, which contains remains even if the supply voltage fails because of a support battery.

# Determination of the device type

With the help of the connected components on the controller board via the corresponding connectors, the device type gets automatically determined (quantity of dispensing units, shutter available (yes/no), output direction).

# Checking the cassettes

First type and quantity of the available cassettes are determined. The values of the cassette storage are compared to the internal data. If there are differences, the corresponding cassettes get marked as 'new.'

To operate correctly, the device requires a minimum of one ready cash-out cassette and the reject/retract cassette. If this minimum requirement is not met, this will be represented on the status display with the code <14>. The device is not ready for operation.

# Checking the photosensors

All photosensors are checked. The respective result is administrated internally.

The following status displays / warnings could occur in the event of error:

<70 ... 9A> Photosensors dirty.

# Checking device locks

Operation is interrupted when the device lock 'Customer retract without storage of bundle' is in effect (status display <13>) or the safety switch is 'Open' (status display <12>).

## Checking mechanical and electronic components

Individual components are checked. The following errors are possible:

<21> Multiple-note detection unit defective (DDU)
<23> Routing disk defective/blocked (SM 2 / SM 3)
<24> Reject/retract drive defective/blocked (MA 6)
<25> Dispensing motor defective (DCM 1)
<26> Stacker wheel drive defective / blocked (SM 9)

## Checking the transport paths

If there are or were bank notes in the customer access, at first a retract is performed.

If there is a bundle in the clamp during the reset, a bundle reset is performed.

After the output transport was emptied, the transport motor is switched on for approx. five seconds. All determined notes are transported to the reject cassette.

The following status displays could appear in the event of error:

<18> Banknote jam during dispensing
<19> Clamp transport defective/jammed

## Checking the shutter

If one is installed, the functioning of the shutter is checked by opening and closing of the flap. The processing is terminated with (Status display <28>) if the test cycle has not been completed correctly.

# Dispensing

## Checking the basic condition

A check is run to determine if:

- the transport paths are free.
- all requested cassette positions are ready and logged on.

The requested number of notes is subtracted from every cassette via the system interface. The dispensed notes are transported to the multiple-note detection unit.

All 'good notes' are stored in the stacking position of the clamp. If a 'bad note' is recognized during the dispensing, a bundle reject or a single reject is performed after that (depending on the configuration). The dispensing command gets repeated.

Dispensing ends when:

- the required number of notes has been achieved.
- a cassette empties during a dispense process.
- the requested number of notes cannot be presented in one minute.
- the note dispensing is not possible from a cassette.

## Multiple dispense/note dimensions outside the tolerance values

If the multiple-note detection unit detects double or overlapping notes, then a dispensing of multiple banknotes is involved. In such cases, the dispensing command is interrupted until all notes have reached the clamp. A bundle reject or a single reject takes place after that (depending on the configuration). The dispensing is then subsequently repeated.

Dispensing aborts with the status display <5x> (too many bad notes from cassette x) if five multiple dispenses have been detected during a dispense transaction from one cassette.

## Undefined notes

If more notes reach the stacking position of the clamp as were dispensed, a bundle reject is performed. Thereafter, the original command is repeated.

The command is aborted after three repetitions in sequence with the status display <3x> (too many bundle rejects from cassette x).

## Dispensing of notes not possible

If the CMD-V4 does not succeed in dispensing a note, the dispense transaction is initiated again.

The attempt to dispense is repeated a maximum of five times. After that, the command is terminated by the CMD-V4 with the status display <4> (no note dispensing possible from cassette x) (cassette is empty or note bundle is sticky).

## Banknote jam

A banknote jam may occur during the dispense process. If a note jam occurs, power is applied to the transport motor for approx. another two seconds. This ensures that transportable notes reach the stacking position of the clamp.

After this a banknote is dispensed from the bottom cassette and transported to the stacking position of the clamp.

If the note reaches the stacking position of the clamp, the transport route is empty again. A bundle reject is performed. In a standard dispensing, the original command get repeated.

If the note does not reach the stacking position of the clamp, the procedure is repeated a maximum of two times. Afterwards, a non-removable banknote jam is clearly ascertained. There is no further device operation. The status display shows the status <18> (note jam during dispensing). The device is no longer ready for operation.

An inspection is mandatory, the note jam needs to be removed by hand. Troubleshooting must be completed with a reset.

# Transportation

With the transport function, dispensed notes can be output or stored in the reject/retract cassette.

The generic term 'transport' sums up the following functions:

- Transport in standby position
- Bundle reject
- Cash presentation (incl. waiting for the removal)
- Cash output
- Cash retract with storage
- Cash retract without storage
- Shutter test / open / closed

## Transport in standby position

This command is performed by the actual cash output. With it, the note bundle is transported from the stacking position of the clamp to the standby position. Which is right before the shutter.

## Bundle reject

This function is used to transport note bundels which were not yet in customer access, to the reject box.

## Single reject

This function is only available, if the systems was delivered in a country out of the European Union.

If a 'bad note' is recognized during the dispensing, this note gets rejected and a spare note gets dispensed. Max. two banknotes per transaction can be stored in the single reject box. After a completed transaction, the notes in the single reject box get transported in the reject/retract cassette.

# Cash presentation (incl. waiting for the removal), cash output

Before the transport, the shutter is opened (if available). After this, the notes which were in the parking position gets provided to the customer.

The further handling is controlled by the system.

- Cash out-put
  In this case, the note are provided for so long until all photosensors are free.
- Cash presentation
  The notes are transported until the bundle is in customer access. After this, it waits for the removal.

After the note output, the shutter gets closed and the clamp goes back to its stacking position. The function ends, if the shutter is completely closed and the clamp could reach its stacking position.

If single notes were parked in the single reject switch, they get transported by the clamp in the reject box of the reject/retract cassette.

# Cash retract with storage

The bundle is transported to the parking position at first with this function. The shutter is closed. After this the notes are stored in the retract box of the reject/retract cassette.

## Cash retract without storage

Function see section "Cash retract with storage"

After the closing of the shutter, the clamp moves back in the stacking position and flips open. The note bundle remains in the clamp, so that a assignment between customer and note bundle is possible. A device lock is activated.

i All dispensing and transport commands are refused when a device lock is set (status display <13>). In addition, activation of the function key has no effect in such cases.

The flag is also active during a power failure; it won't be reseted by a reset. So that after the disposal of the note bundle, the CMD-V4 can be still operated, the device lock needs to be unlocked.

# Serial Number Recognition

The control of the serial number detection is performed by the product-specific software. Power is supplied through the CMD-V4 controller. The two-sided recording of the bank note takes place shortly before entry into the stacker wheel. The reproduction of the recorded bank note is transmitted directly to the system unit (PC) per USB. The product-specific software provides the data for evaluating the serial numbers on the notes.

# Processes in the VCMD

## Start-up behavior

With Reset or after the power up, you can check whether the VCMD is ready to operate, but this can only work if the command has been executed without errors!

After a device reset the VCMD is in a defined state.

After the performance of a command, the detection of the first error is canceled. Error causes can be detected with the status display on the controller (see chapter "Troubleshooting").

### Controller test

During the reset the same routine runs as during the power up. But the controller test will not be performed. The controller test needs approx. six seconds and is ended with the status display <-->. In the event of an error, operation with the status code <10> (Controller defective) will be interrupted.

### Firmware test

The validity of the downloaded firmware is checked. If necessary, operation with the status code <11> (No firmware) will be interrupted.

### Memory reset

The internal markers are reset.

In addition to the general storage area, there are also program and parameter areas, which contains remains even if the supply voltage fails because of a support battery.

# Determination of the device type

With the help of the connected components on the controller board via the corresponding connectors, the device type gets automatically determined (quantity of dispensing units, shutter available (yes/no), output direction).

# Checking the cassettes

First type and quantity of the available cassettes are determined. The values of the cassette storage are compared to the internal data. If there are differences, the corresponding cassettes get marked as 'new.'

To operate correctly, the device requires a minimum of one ready cash-out cassette and the reject cassette. If this minimum requirement is not met, this will be represented on the status display with the code <14>. The device is not ready for operation.

# Checking the photosensors

All photosensors are checked. The respective result is administrated internally.

The following status displays / warnings could occur in the event of error:

<70 ... 9A> Photosensors dirty.

# Checking device locks

Operation is interrupted when the device lock 'Customer retract without storage of bundle' is in effect (status display <13>) or the safety switch is 'Open' (status display <12>).

## Checking mechanical and electronic components

Individual components are checked. The following errors are possible:

<21> Multiple-note detection unit defective (DDU)
<25> Dispensing motor defective (DCM 1)
<26> Stacker wheel drive defective / blocked (SM 9)

## Checking the transport paths

If there is a bundle in the stacking position during the reset, a bundle reject is performed.

After the output transport was emptied, the transport motor is switched on for approx. five seconds. All determined notes are transported to the reject cassette.

The following status displays could appear in the event of error:

<18> Banknote jam during dispensing
<19> Transport defective / blocked

# Dispensing

## Checking the basic condition

A check is run to determine if:

- the transport paths are free.
- all requested cassette positions are ready and logged on.

The requested number of notes is subtracted from every cassette via the system interface. The dispensed notes are transported to the multiple-note detection unit.

All 'good notes' are stored in the stacking position. If a 'bad note' is recognized during the dispensing, a single reject is performed. The respective note will be removed once more and transported to the stacking position. The dispensing command is resumed.

Dispensing ends when:

- the required number of notes has been achieved.
- a cassette empties during a dispense process.
- the requested number of notes cannot be presented in one minute.
- the note dispensing is not possible from a cassette.

## Multiple dispense/note dimensions outside the tolerance values

If the multiple-note detection unit detects double or overlapping notes, then a dispensing of multiple banknotes is involved. A single reject of the 'multiple dispense' takes place in such cases and the dispensing of the note is repeated. The dispensing is then subsequently resumed.

Dispensing aborts with the status display <5x> (too many bad notes from cassette x) if five multiple dispenses have been detected during a dispense transaction from one cassette.

## Undefined notes

If more notes reach the stacking position than were dispensed, a bundle reject is performed. Thereafter, the original command is repeated.

The command is aborted after three repetitions in sequence with the status display <3x> (too many bundle rejects from cassette x).

## Dispensing of notes not possible

If the VCMD does not succeed in dispensing a note, the dispense transaction is initiated again.

The attempt to dispense is repeated a maximum of 5 times. After that, the command is terminated by the VCMD with the status display <4x> (no note dispensing possible from cassette x) (cassette is empty or note bundle is sticky).

## Banknote jam

A note jam may occur during the dispense process. If a note jam occurs, power is applied to the transport motor for approx. another two seconds. This ensures that transportable notes reach the stacking position.

After this a banknote is dispensed from the bottom cassette and transported to the stacking position.

If the note reaches the stacking position, the transport route is empty again. A bundle reject is performed. In a standard dispensing, the original command get repeated.

If the note does not reach stacking position, this procedure is repeated a maximum of twice more. Afterwards, a non-removable note jam is clearly ascertained. There is no further device operation. The status display shows the status <18> (note jam during dispensing). The device is no longer ready for operation.

An inspection is mandatory, the note jam needs to be removed by hand. Troubleshooting must be completed with a reset.

# Transportation

With the transport function, dispensed notes can be output or stored in the reject cassette.

The generic term 'transport' sums up the following functions:

- Transport in standby position
- Bundle reject
- Cash presentation (incl. waiting for the removal)
- Cash output

## Transport in standby position

This command is performed by the actual cash output. With it, the note bundle is transported from the stacking position to the standby position.

## Bundle reject

This function is used to transport note bundels which were not yet in customer access, to the reject box.

## Single reject

If a 'bad note' is recognized during the dispensing, this note will be individually controlled into the reject cassette and a spare note will be dispensed.

# Cash presentation (incl. waiting for the removal), cash output

The notes are transported out of the stacking position into the cash-out position. After this, the notes which were in the standby position gets provided to the customer.

The further handling is controlled by the system.

- Cash out-put
  In this case, the note are provided for so long until all photosensors are free.
- Cash presentation
  The notes are transported until the bundle is in customer access. After this, it waits for the removal.

# Troubleshooting

Information regarding operation or troubleshooting are provided with the aid of the two-digit status display on the controller. During normal operation, this display is set to '00' at the start of each reset, transport or dispensing command.

i The displays apply equally to the CMD-V4 and the VCMD. Deviations are pointed out explicitly where they arise.

If a special state occurs during the processing of one of these commands, this is shown in the display and remains until the next device command is made.

Additional displays can occur during the initialization, after the switch on or after a reset.

It is also possible to check the operability of the CMD-V4 or VCMD with an internal test. More information on this can be found in the chapter "Device Overview and Operation", section "Function test."

i If a reset should be performed after an error elimination, move the clamp to its home position (stacking position of the clamp in the stacker).

# Displays at start-up

| No. | ERROR | Reaction |
|---|---|---|
| off | No power supply | Switch the device on. |
| .8<br>.8 | Controller defective | Replace the controller. |
| 0 bis 9 | Controller test after Power On (the displays flash and change continuously) | None |
| b<br>E | Warning Battery too weak | Replace battery (controller) |
| 1<br>0 | Controller defective | Replace the controller. |
| -<br>- | Firmware start-up (Reset)<br>Determination of the validity of the firmware<br>CMOS parameter check,<br>Mechanical components check<br>Clearing run | None<br>-> Error 11<br>-> Initialization of the photosensors<br>-> CMOS error PS xx, 22<br>-> Error 23 ... 28<br>-> Error 18,19, 71..9A |
| P X<br>S X | Error during initialization of the photosensors after configuration change or replacement of the controller (the display switches between 'PS' and the photosensor number 'XX'). | Check photosensor xx and clear it, try Reset once again, possibly replacing the module or the controller. |
| 0<br>0 | Start-up completed without error | |

# Displays in normal operation

| Error code | ERROR | Explanation/action |
|---|---|---|
| off | No power supply | Switch the device on. |
| - - | Start-up (after RESET or electronics self-test) | Wait for the system to finish booting up. |
| b u | Burn; program controller | - |
| c o | Compare; check controller | - |
| i o | Controller OK | - |
| 0 0 | No error | - |
| 0 1 | Software faulty | Switch the device off and on again. Read the hardware status (Stop-Info field), perform a download if necessary. |
| 0 5 | Communication problem with ChipCard controller | Check the lines to the ChipCard controller.<br>Check ChipCard controller, replacing it if necessary |
| 0 6 | Communication problem with ChipCard / or wrong ChipCard inserted (ChipCard number not '226-0PR') | Check the ChipCard on the controller, replacing it if necessary. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 09 | Locking handle open<br>CMD-V4 or VCMD is not in dispensing position | Push the CMD-V4 or VCMD as far as possible into the device using the green locking handle (CMD-V4 or VCMD must audibly click into place).<br>If this should not be possible, then the locking switch must be checked and possibly recalibrated or replaced. |
| 10 | Controller defective or | replace controller |
| 10 | Battery empty or battery jumper not connected: only with self-test commands for battery testing | Insert the battery jumper or replace the battery or replace the controller if the battery is permanently soldered in place. |
| 11 | No software (download) | Perform a software download. |
| 12 | Safety switch open | Insert CMD-V4 or VCMD. |
| 13 | Device lock waiting | A retract has been performed during which the bank notes that were not removed by the customer have been deposited in the SAT. All transport functions of the CMD-V4 or VCMD have been blocked afterwards by the software.<br>Remove the customer bank notes from the SAT, then use the product-specific software to reset the device lock (RESET inhibit flag). |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 14 | CMD-V4 or VCMD minimum configuration is missing | Cassette is defective or absent.<br>The CMD-V4 or VCMD requires at least one ready cash-out cassette and the reject/retract cassette (RR cassette) for operation. Insert the RR cassette and filled cash-out cassette(s) and register them using the product-specific software. |
| 15 | Cassette distributor board with invalid coding, not inserted or defective | Check the wiring to the cassette distributor board.<br>Check the cassette distributor board and replace it if necessary. |
| 16 | Output transport coding invalid | Perform coding on the output transport cable connector. |
| 17 | **CMD-V4:**<br>Belt drive of clamp defective ( M 3) or jam | Evaluate the error information in the device status.<br>Initiate corresponding measures: e.g.: Replace the output transport or the controller. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 18 | Banknote jam during dispensing | A note jam has been discovered in the dispensing areas or in the vertical transports of the dispensing units or in the stacker during the dispensing transaction (photosensors PSDx, DDU, PS1, PS18). Check the banknote path from the cassettes up to the stacking compartment or the reject compartment for jammed notes.<br>Check for correct seating of the plug connections on the CMD controller and/or on the elements of the photosensors.<br>Afterwards, bring the CMD-V4 or the VCMD back into the safe into dispensing position, whereby the safety switch is closed and the CMD-V4 or VCMD is started up again (Reset). If the status display continues to show '18' after this start-up, then the jam was not effectively eliminated and/or another jam has occurred.<br>Use the test program self-test command to check the 'Status of the photosensors'. If a photosensor (besides the 'cassette empty photosensor') is reported as being 'covered', determine the reason and eliminate the error.<br>If no error can be determined and if '18' continues to be displayed after the next start-up, then the stacker, the respective dispensing unit or the controller must be replaced. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 19 | **CMD-V4:**<br>Clamp transport defective/blocked.<br>**VCMD:**<br>Note jam in output transport | Clear the block and then perform a reset. Replace the stacker or the controller if necessary |
| 20 | Single reject switch (MA2/1, MA2/2, SM1) defective/blocked | Check the SAT in the area of the single reject switch for jammed notes/note residue and remove them if found. Check the mobility of the single reject switch by pressing and releasing the rotor in the lift magnet MA2.<br>Select Test function 2 (mechanical test) on the function button and watch the activation of the single reject switch. If the lift magnet MA2 does not move or if it does not move completely, the SAT or the controller must be replaced.<br>If the magnet moves with a full stroke, then the CMD-V4 or the VCMD can be put back into operation.<br>If the error occurs again after a short time, and if no reason can be determined following renewed inspection of the single reject switch, then the SAT or the controller must be replaced. |
| 21 | Faulty measuring station (DDU) | Check whether there is a jam in the area of the measurement station. Are the cables connected?<br>Replace dispensing unit with DDU or controller. |

| Error code | ERROR | Explanation/action |
|---|---|---|
|  | Photosensor amplifier faulty or photosensor initialization unsuccessful | Check all of the banknote paths from the cassettes to the stacking compartment, from the stacking compartment to the cash output and the input area of the RR cassette for jammed notes/note residues and remove these if found.<br>Afterwards, bring the CMD-V4 or the VCMD back into the safe into dispensing position, whereby the safety switch is closed and the CMD-V4 or VCMD is started up again (Reset). If the status control shows '22' again after this start-up, then the controller must be replaced. |
|  | **CMD-V4:**<br>Routing disk (SM2/SM3) defective/blocked<br>**VCMD:**<br>Note bundle reject switch defective/blocked SM6 | Clear block Move CMD-V4 or VCMD in the safe into dispensing position (safety switch closed) and select Test function 2 (mechanical test) on the function key after the start-up. If this test function ends once again with the status display '23', then the SAT or the controller must be replaced, otherwise the CMD-V4 or VCMD can be put back into operation. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 24 | **CMD-V4:** Reject/retract drive defective/blocked (MA 6) | The Reject/Retract chute selection in the RR cassette could not be set correctly. Remove the RR cassette and check the mobility of the retract box in the RR cassette. Check the connectors on the CMD controller and on the lift magnet MA6 for correct seating. Check the photosensor on the changeover lever for fixed seating. Move the CMD-V4 in the safe into dispensing position (safety switch closed). Re-insert the RR cassette and select Test function 2 (mechanical test) on the function key and monitor the movement of the RR drive (MA6). If the lift magnet does not move or if the end positions of the lever are not reached (status display '24' once again), then the output transport of the controller must be replaced. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 25 | Dispensing drive (DCM 1) defective / blocked | The main motor (DCM 1) could no longer be brought up to its minimum rotational speed after a short start-up time. Select 1 (Reset) on the function key.<br>The motor attempts to start up, but only labored operating noises are to be heard: check the bank note paths of the CMD-V4 or VCMD for a massive note jam. Check the input into the RR cassette to see if notes are jammed there.<br>Move the CMD-V4 or the VCMD in the safe into dispensing position (safety switch closed) and select Text function 2 (mechanical test) on the function key after the start-up of the CMD-V4 or VCMD: Observe the operating noises and transport function of the main motor.<br>If the main motor does not rotate or if this test function ends again with the status display '25', the output transport or the controller must be replaced, otherwise the CMD-V4 or VCMD can be put back into operation. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 26 | **CMD-V4:**<br>Stacker wheel drive (SM 9) defective/blocked<br>**VCMD:**<br>comb-type lifting bar defective/blocked SM5 Dispensing / Transport changeover switch defective/blocked M3 | Check the SAT in the area of the stacking compartment for jammed notes/note residue and remove them if found. Move the CMD-V4 or the VCMD in the safe into dispensing position (safety switch closed) and select Text function 2 (mechanical test) on the function key after the start-up of the CMD-V4 or VCMD: If this test function ends once again with the status display '26', then the SAT or the controller must be replaced. |
| 28 | **CMD-V4:**<br>Shutter error | Check the output area of the CMD-V4 and of the shutter for foreign objects that prevent the movement of the shutter label.<br>Move the CMD-V4 into dispensing position (safety switch closed).<br>Select Test function 2 (mechanical test) on the function key and monitor the movement of the shutter. Troubleshooting can be performed on the shutter without danger even during ongoing test functions - afterwards, perform Test function 2 once again without operator intervention into the shutter movement. If this test ends once again with the status display '28', then the shutter or the controller must be replaced. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 29 | Output photosensor covered (manipulation) | Check the cash output of the SAT and the shutter for foreign objects that interfere with the function of the output photosensor.<br>Check the connector on the CMD-V4 or VCMD for correct seating.<br>Resetting the error code:<br>Firmware version <=16.80:<br>Move the CMD-V4 or VCMD in the safe into dispensing position (safety switch closed) and select '1' (Reset) with the function key.<br>If the status display reports '29' once again after the start-up of the CMD-V4 or VCMD, then the shutter, the SAT or the controller must be replaced.<br><br>FW version >=16.80:<br>Pull out the CMD-V4 or the VCMD and then slide it back in again (safety switch opened/closed) and then wait for the subsequent RESET.<br>If the status display reports '29' once again after the start-up of the CMD-V4 or VCMD, then the shutter, the SAT or the controller must be replaced. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 3<br>X | Too many problems dispensing from cassette x (x = 1 - 6) | Bundle rejects can be caused by extremely skewed banknotes or banknotes that are extracted in an uncontrolled way or by problems with the photosensors.<br>This error can be ignored the first time it occurs (warning). If the error has however already occurred, then please proceed as follows:<br>1. Remove cassette from the dispensing unit 'x' and check the bank note input: Are the front notes deformed on one side? Uniform pressure of the front notes on the right-hand and left-hand sides?<br>2. With the cassette removed, check the dispensing area in the dispensing unit for jammed bank note residue. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 3<br>X | Too many problems dispensing from cassette x (x = 1 - 6) | 3. Check the transport path from cassette 'x' to the stacking compartment for jammed notes/note residue. Has a transport belt run off the rollers?<br>4. Check the connectors on the CMD controller or VCMD and on the individual elements of the photosensors for correct seating.<br>5. Check the stroke of the magnet for the retaining shaft for sluggish movement by pressing the rotor (or check the movement of the magnet with Test function 2 (mechanical test)).<br><br>If these tests reveal no errors and if the status '3x' continues to appear, then the respective dispensing unit or the controller must be replaced. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 4<br>X | No note dispensing possible or possibly faulty note contact pressure when deploying a new cassette (x = 1 - 6) | A) No note could be extracted from cassette 'x' or<br>B) The required contact pressure could not be built up when the cassettes were pushed inside.<br>Procedure in Case A):<br>1. Remove cassette 'x' and check the note input: The notes must be standing vertically in the cassette. Are the front banknotes extremely deformed? If notes are curved, then the outward curve must face the pressure carriage! Are the front notes sticky or hooked into one another with kinks?<br>2. With the cassette removed, check the dispensing area in the dispensing unit for jammed notes/bank note residue.<br>3. Check the connectors on the CMD controller or VCMD and and on the coupling of the dispensing unit 'x' for correct seating. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 4<br>X | No note dispensing possible or possibly faulty note contact pressure when deploying a new cassette (x = 1 - 6) | 4. Afterwards, place filled cassette in dispensing unit 'x' and select '3' (Trial dispensing process) on the function button with the safety switch closed. If this test ends once again with the error code '4x', select Trial dispensing process once again, checking the function of the coupling and retaining shaft while doing so. If the coupling or the retaining magnet is not actuated, the dispensing unit or the controller must be replaced. |
| 4<br>X | No note dispensing possible or possibly faulty note contact pressure when deploying a new cassette (x = 1 - 6) | Procedure in Case B):<br>1. Remove cassette 'x' and check the note input: The notes must be standing vertically in the cassette. Are the front banknotes extremely deformed? If notes are curved, then the outward curve must face the pressure carriage! If necessary, place notes from the rear part of the cassette towards the front. If the stack of notes rubs heavily against the side note guides (laterally protruding notes kinked to the rear) then the stack of notes needs to be aligned better. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 4<br>X | No note dispensing possible or possibly faulty note contact pressure when deploying a new cassette (x = 1 - 6) | 2. Reinsert the cassette. Does the pressure carriage move forward audibly when doing so?<br>- If there is no noise to be heard, check the connectors on the CMD controller and the connectors on the cassette for correct seating. Carry out a test with a different cassette. If the motor still continues not to operate, then the controller is defective.<br>- If the motor noise is audible, but the error message '4x' occurs again after a few seconds (together with a three-signal sound), then remove the cassette and check the stroke of the dispensing shaft manually for sluggish movement. Remove the cassette, open it, move it by hand into dispensing position. Check the movement of the return bar for sluggish movement. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 4<br>X | No note dispensing possible or possibly faulty note contact pressure when deploying a new cassette (x = 1 - 6) | 3. If no reason can be discerned and if this error also occurs with a different cassette in this dispensing unit, then the quality of the pressure sensor must be checked with test program and self-test command 'Query status cassette contact pressure' (DYQ) - If an error is present, then the dispensing unit or the controller must be replaced. |
| 5<br>X | Too many bad banknotes from cassette x (x = 1 - 6) | Too many double or excessively wide or excessively narrow notes were detected during a dispense transaction from cassette 'x'. Remove cassette 'x' and check whether the correct note type was placed in it. Check the notes for deformations or stickiness.<br>Reinsert the cassette and restart the application. If many 'good' notes are controlled out by Single Reject, or if the error '4x' reoccurs after a short time, then a new reference value determination should be carried out for this note type. If the error cannot be eliminated, then the dispensing unit or the controller must be replaced. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 6<br>X | Cassette x defective<br>(x = 1 - 6) | The note data stored in cassette 'x' could not be read and/or rewritten (writing error in the cassette EEPROM).<br>Check the connectors on the CMD controller and the connectors on the cassette for correct seating. If the error also occurs with a different cassette in this dispensing unit, then the controller must be replaced. |

# Dirty photosensors/sensors

| Error code | ERROR | Explanation/action |
|---|---|---|
| 30 | Banknote measurement point (DDU) not ready | Check whether there is a jam in the area of the measurement station. Is the measurement station dirty or are the cables plugged in?<br>Replace dispensing unit with DDU or controller. |
| 3X | Dispensing sensor dirty or pressure sensor faulty (x = 1 - 6) | A) If a cassette can be installed in cassette position 'x' without error (one-time signal tone), then the error message indicates an extremely soiled photosensor 'dispensing sensor' in the dispensing unit 'x' (PSDx) that must be cleaned. Afterwards, execute a reset (move CMD-V4 or VCMD into dispensing position).<br><br>**Note:**<br>After the first time this error has occurred, the CMD-V4 or VCMD can still continue working until the operation is automatically shut down with further increasing soiling.<br><br>B) If it is not possible to deploy a cassette at cassette position 'x' (no signal tone, even after several seconds), then the dispensing unit or the controller must be replaced after checking the controllers on the CMD controller and on the pressure sensors (PSDx). |

| | | |
|---|---|---|
| 8<br>X | Cassette empty sensor dirty (x = 1 - 6) | Clean photosensor 'PSEx' in the respective dispensing unit and the associated prism in the pressure carriage of the cassette. Afterwards, execute a reset (move CMD-V4 or VCMD into dispensing position). Check the degree of soiling of all photosensors in KDIAG with the test program via self-test command 'DYK' (Query status photosensors, photosensor amplifiers): Photosensors that exhibit status '3' or higher should be cleaned. Status improvement can be queried after reset.<br><br>**Note:**<br>After the first time this error has occurred, the CMD-V4 or VCMD can still continue working until the operation is automatically shut down with further increasing soiling. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 90 | SAT: Photosensor PS1 (P) dirty; stacker wheel input | Clean the transmission and reception diodes between the stacker wheels carefully with a brush. Return the CMD-V4 to dispensing position. If the status display continues to show the error code '90' after startup (Reset), remove the stacker and clean the surfaces of the prism from below, between the stacker wheels, return the CMD-V4 to dispensing position. If the status display continues to show the error code '90' after startup (Reset), then the stacker must be replaced.<br>Check the degree of soiling of all photosensors in KDIAG with the test program via self-test command 'DYK' (Query status photosensors, photosensor amplifiers). Photosensors that exhibit status '3' or higher must be cleaned. Status improvement can be queried after the reset.<br><br>**Note:**<br>After the first time this error has occurred, the CMD-V4 or VCMD can still continue working until the operation is automatically shut down with further increasing soiling. |

| Error code | ERROR | Explanation/action |
|---|---|---|
| 91 | Photosensor dirty<br>Tray monitoring:<br>Photosensor PS18 | Photosensor '9x' is soiled and urgently requires cleaning. Remove dust deposits on the surfaces of the respective transmitter/receiver (elements with clear or violet-colored plastic housing) and if necessary from the associated prism (P) (two crystal-clear surfaces opposite the transmitter/receiver) with a brush or compressed air. After cleaning, return the CMD-V4 or VCMD to home position and await start-up or select '1' (Reset) on the function button.<br>Check the degree of soiling of all photosensors in KDIAG with the test program via self-test command 'DYK' (Query status photosensors, photosensor amplifiers): Photosensors that exhibit status '3' or higher must be cleaned. Status improvement can be queried after the reset. Remark: After the first occurrence of the error code '9x', the CMD-V4 or VCMD can still continue working until the operation is automatically shut down with further increasing soiling (the status display '9' will also be displayed in such cases). |
| 93 | **CMD-V4:**<br>'Compartment empty' (Single reject) PS2<br>**VCMD:**<br>Monitoring of entrance reject box PS21 | |
| 95 | Removal photosensor<br>**CMD-V4:** PS27 (P)<br>**VCMD:** PS26 | |
| 98 | **CMD-V4:**<br>Bundle rear edge control,<br>Shutter photosensor PS 28 | |

# Checking the banknote paths

Before checking the banknote paths, you should perform the following steps:

- Activate the product-specific software (refer to the operating manual of the basic ProCash device, chapter "Basic Operation", section "Calling the product-specific software").
- Open the safe door (see the operating manual of the base device).
- Pull the CMD-V4 as far as possible out of the safe by the green release lever or pull the VCMD as far as possible out of the safe by the rod marked in green, respectively (see chapter "Removal/Installation of Components", section "Pulling out/pushing in the CMD-V4" or "Pulling out/pushing in the VCMD", respectively).

**i** If the release lever jams with the CMD-V4, you must check the current position of the clamp. If possible, push the clamp carefully back to its home position. Perform a reset using the function button. Now check whether the CMD-V4 can be pulled out (see also section "Locking handle blocked").

# CMD-V4

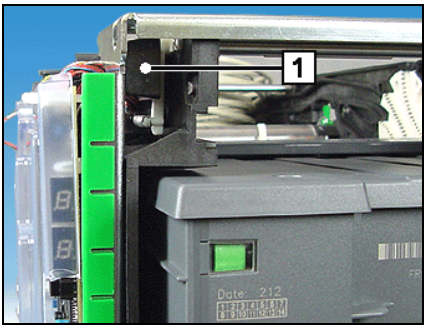
## Locking handle blocked

If the locking handle is blocked by the routing disk as soon as the disk moves from its home position.

If you cannot use the locking handle, a reason could be that the banknote clamp is not in the stacking position or there is a error on the routing disk.

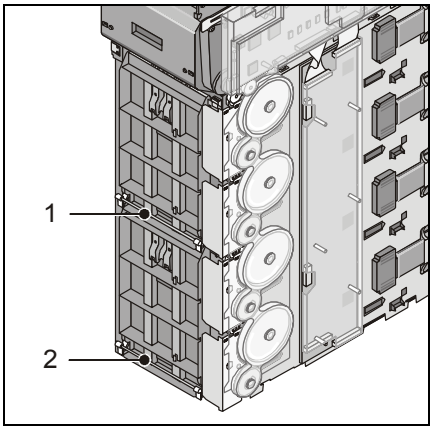
i Make sure that the banknote clamp is in the stacking position, because if it is not, the clamp could fall down during the pulling out and the ribbon cable could be damaged.

- Remove the reject/retract cassette (see chapter "Device Overview and Operation", section "Removing the cassette") and check in which position the banknote clamp is.
- If the banknote clamp is not in the stacking position, try to move the clamp carefully downwards in the stacking position.

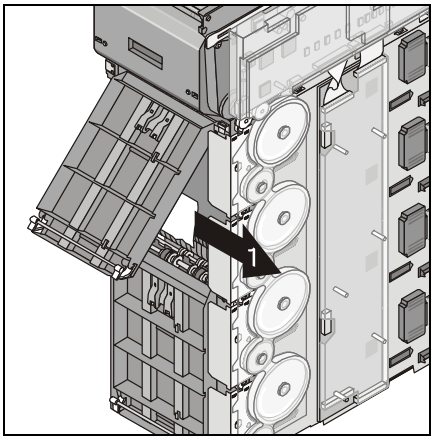



If the banknote clamp is down, you can use the emergency release (1) on the CMD-V4 and pull out the CMD-V4.

## Checking the vertical transport




Raise the release handle (1) or (2) of the dispensing unit and move the cover forward.




Check the upper and/or lower area of the vertical transport and if necessary remove any notes (1).

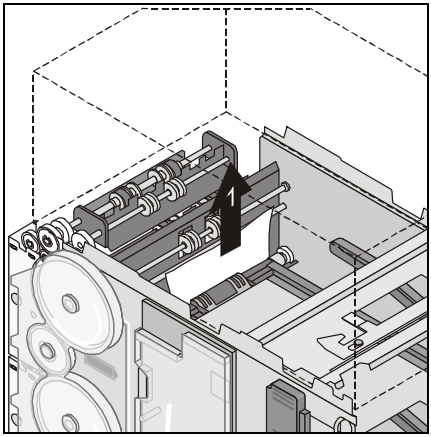
Now move the cover back until it snaps into place.

**i** Make sure that the cover lies flush with the surface and that the two sides of the locking handle are locked in position.

## Checking the dispensing areas

i In the dispensing units the vertical transport (at the rear) and the dispensing area (inside the device) must be checked.

The dispensing areas can only be checked when the cassettes have been removed from the dispensing units (see chapter "Device Overview and Operation", section "Removing the cassette").



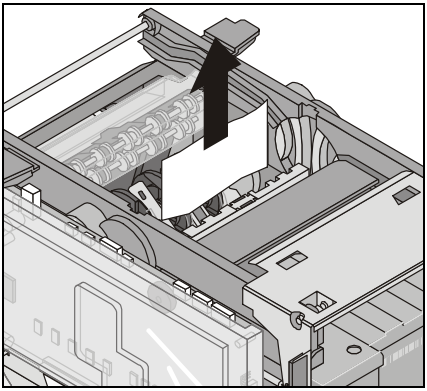

Check the dispensing area of each dispensing unit for banknotes and if necessary remove the banknotes (see arrow).

- Re-insert all cassettes which were removed (see chapter "Device Overview and Operation", section "Inserting the cassette").
- Log on the cassettes using the product-specific software (see the operating manual of the basic device).

## Checking the stacker and output transport

i Do **not** try to open the clamp by force; you could damage it.

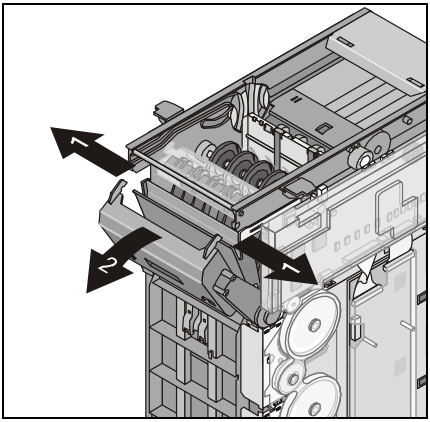
### Stacker wheel area



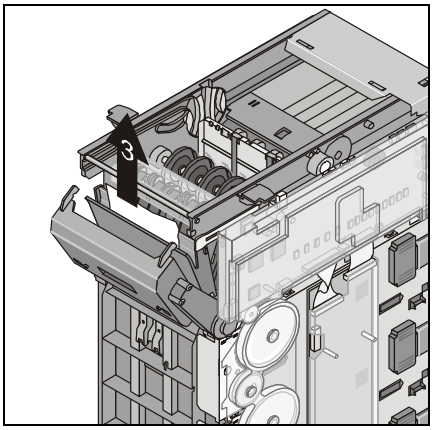
Check the area round the stacker wheel and remove any notes if necessary.

### Single reject area

i The function of the single reject depends on the individual configuration.



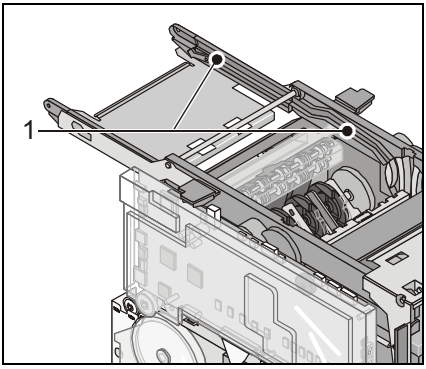

Press the green release levers (1) outwards and pull the flap (2) forwards.




Check the area and if necessary remove the banknotes (3).

### Gear tracks of the stacker and output transport

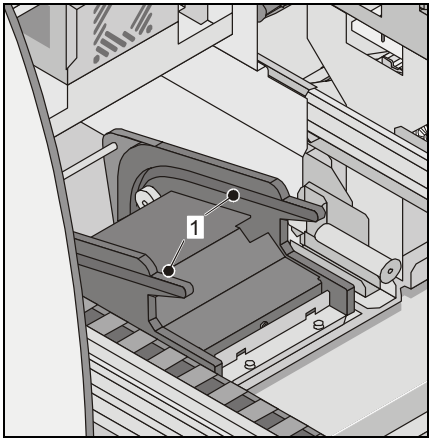
#### Horizontal output



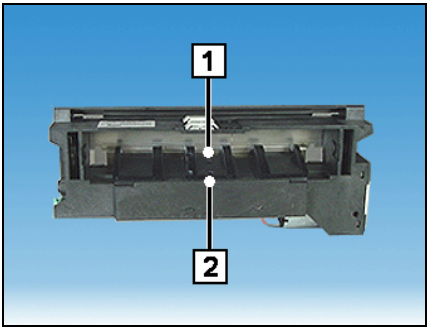

If the clamp has come to a standstill at a position outside the stacking position, you may need to check and clean the gear tracks (1).

### Gear tracks of the output transport

#### Vertical output




If the clamp has come to a standstill at a position outside the stacking position, you may need to check and clean the gear tracks (1).




Check the photosensors (1) and (2) in the shutter area.

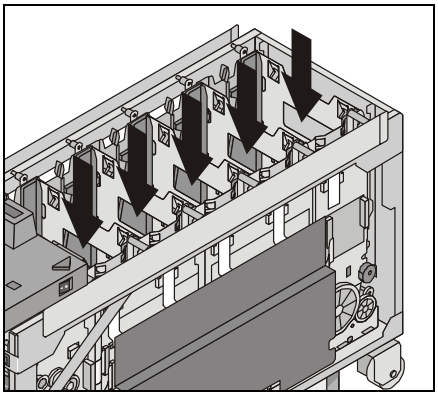
After checking the banknote paths, proceed as follows:

- After checking the cash paths push the CMD-V4 by the green release lever back into the safe as far as possible (see the operating manual of the basic device).
- Close the safe door (see the description in the basic device operating manual).

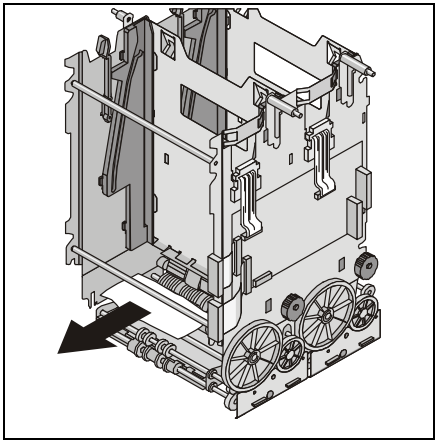
# VCMD

## Checking the dispenser module

- Remove all cassettes from the VCMD (see chapter "Device Overview and Operation", section "Removing the cassette").



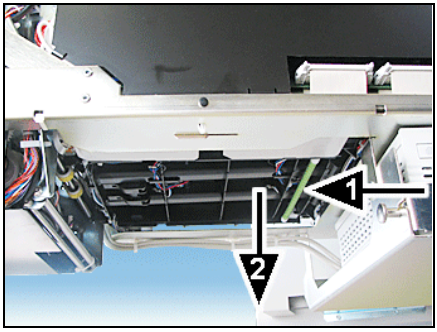
Check the dispensing area of each dispensing module for available banknotes ...



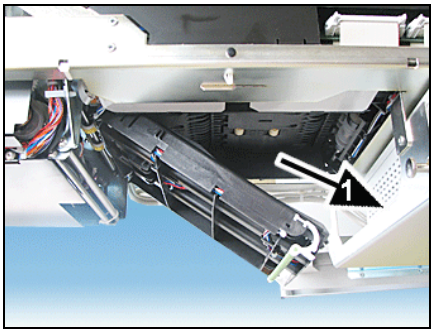
... and remove the any notes that may be available (see arrow).

### Checking the horizontal feed

i It is not possible to check the horizontal feed except underneath the cash-out cassettes 1 and 2!



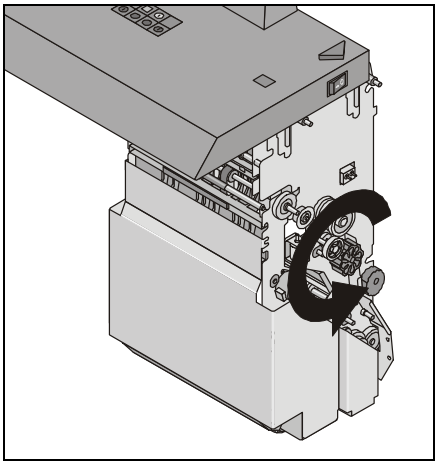

Press the locking handle (1) of the dispensing unit marked in green in the arrow direction and swing the cover downward (2).




Check the area of the horizontal feed and remove any banknotes that may be there (1).

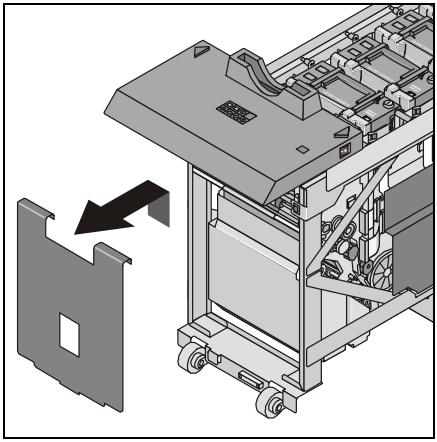
Now move the cover back until it snaps into place.

i Make sure that the cover lies flush with the surface and that the two sides of the locking handle are locked in position.

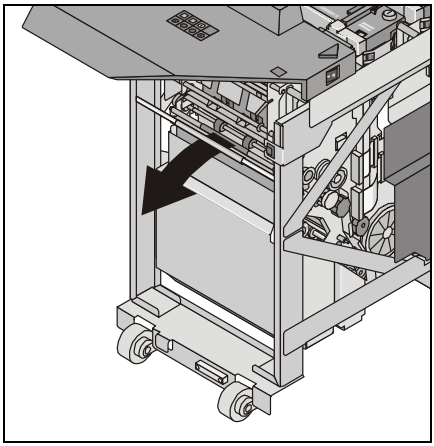


Turn the green handwheel in the direction of the arrow in order to transport inaccessible jammed notes into the stacking compartment.

- Re-insert all cassettes which were removed (see chapter "Device Overview and Operation", section "Inserting the cassette").

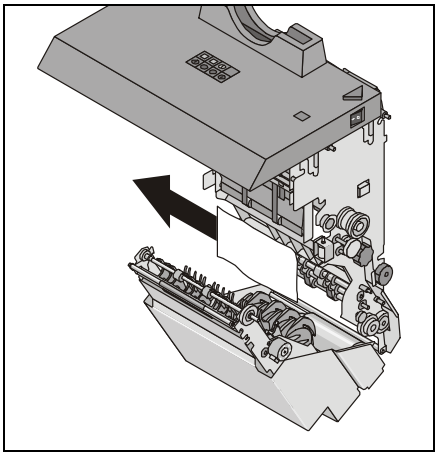


Lift the safety cover slightly and remove it from its mounting in the direction of the arrow.

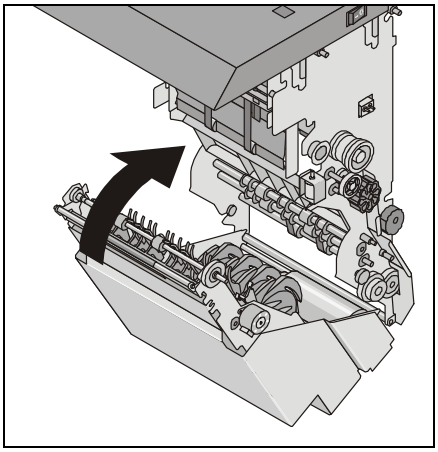


Swing open the stacker and output transport on the green release handle up into the final position.

Risk of crushing!

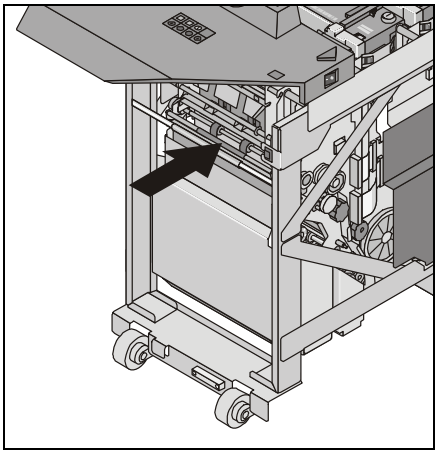


Remove the jammed bank notes from the stacking compartment (see arrow).



Swing the stacker and output transport back on the green release handle (see arrow).

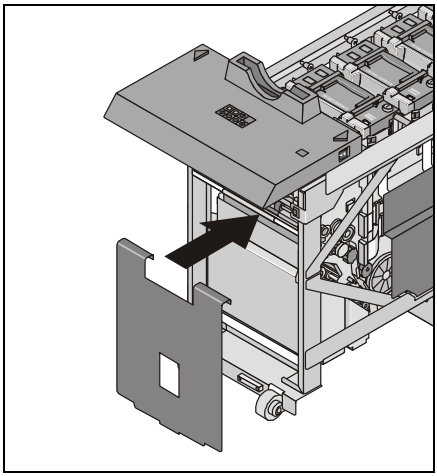
Risk of crushing!



Press the stacker and output transport at the green locking grip edge in the arrow direction until the stacker and output transport engages.

Take care to ensure that the Stacker and output transport does not become tilted, but engages smoothly on both the left-hand and right-hand sides.

- Push the VCMD into the safe (see chapter "Removal/Installation of Components", section "Pulling out/pushing in the VCMD").

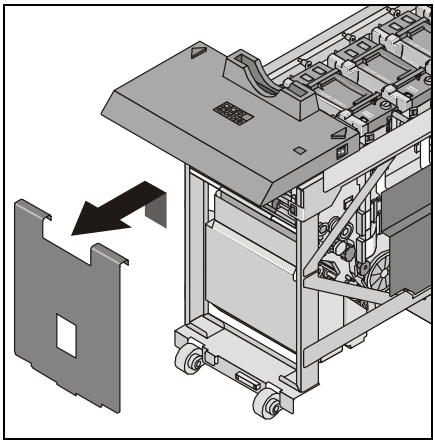


Reinstall the safety shield (see arrow).

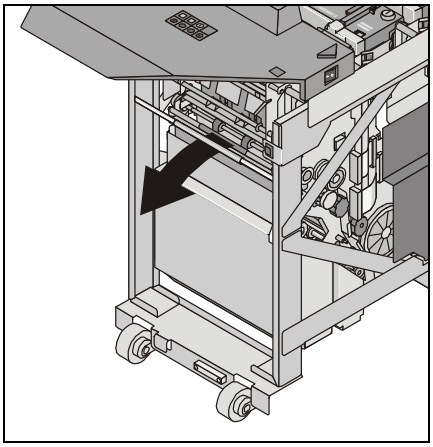
i It is not possible to operate the VCMD without the safety shield!

- Log on the cassettes using the product-specific software (see chapter "Basic Operation", section "Calling the product-specific software" in the operating manual for the basic device).
- Wait for the VCMD to power up.
- Close the safe door (see the description in the basic device operating manual).
- Exit the product-specific software (refer to the operating manual of the basic ProCash device, chapter "Basic Operation", section "Calling the product-specific software").

## Checking the rear output transport

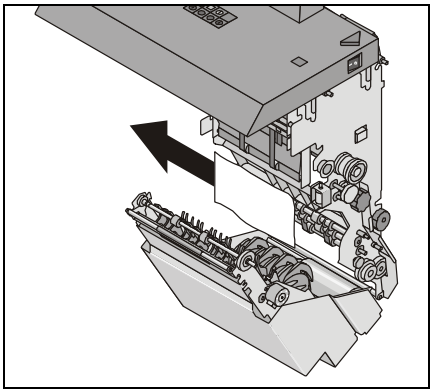


Lift the safety cover slightly and remove it from its mounting in the direction of the arrow.

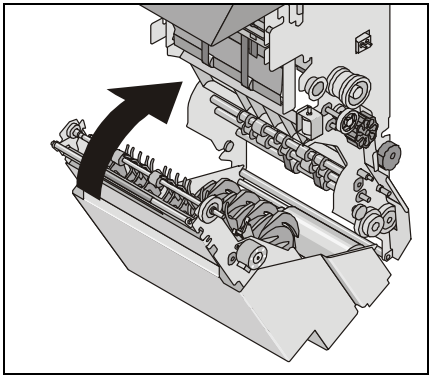


Swing open the stacker and output transport on the green release handle up into the final position.

Risk of crushing!

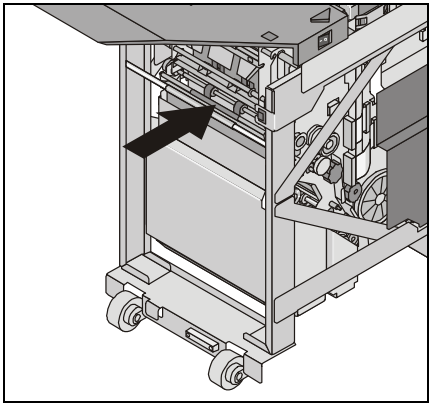


Remove the jammed bank notes from the stacking compartment (see arrow).



Swing the stacker and output transport back on the green release handle (see arrow).

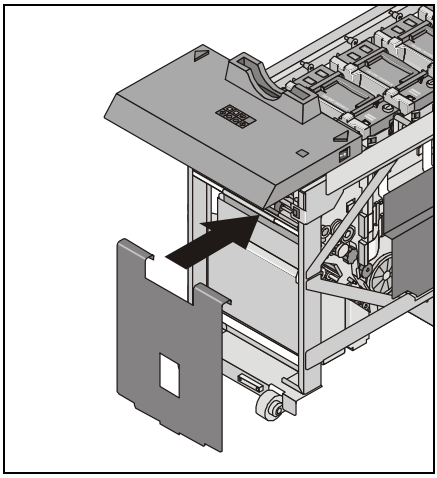
Risk of crushing!



Press the stacker and output transport at the green locking grip edge in the arrow direction until the stacker and output transport engages.

**i** Take care to ensure that the Stacker and output transport does not become tilted, but engages smoothly on both the left-hand and right-hand sides.

- Push the VCMD into the safe (see chapter "Removal/Installation of Components", section "Pulling out/pushing in the VCMD").

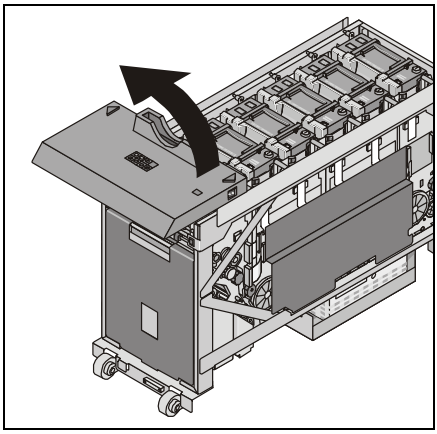


Reinstall the safety shield (see arrow).

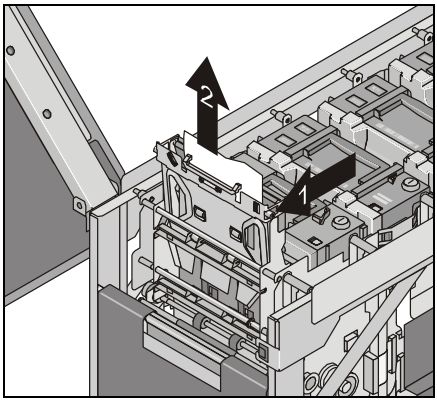
i It is not possible to operate the VCMD without the safety shield!

- Wait for the VCMD to power up.
- Close the safe door (see the description in the basic device operating manual).
- Exit the product-specific software (refer to the operating manual of the basic ProCash device, chapter "Basic Operation", section "Calling the product-specific software").

## Checking the front output area



Swing the operating unit door upwards in the arrow direction.




Press the shaft in the arrow direction (1), hold it firmly there and remove the available bank notes in arrow direction (2). Release the shaft, it will be returned automatically to its starting position.

- Push the VCMD into the safe (see chapter "Removal/Installation of Components", section "Pulling out/pushing in the VCMD").
- Close the safe door (see the description in the basic device operating manual).
- Exit the product-specific software (refer to the operating manual of the basic ProCash device, chapter "Basic Operation", section "Calling the product-specific software").

# Serial Number Recognition

There is no status display for the serial number detection. In the event of a malfunction, the message ensues through the product-specific software.

If the detection rate becomes worse, then the scanning rails must be cleaned.

- Activate the product-specific software (refer to the operating manual of the basic ProCash device, chapter "Basic Operation", section "Calling the product-specific software").
- Open the safe door (see the operating manual of the base device).
- Pull the CMD-V4 as far as possible out of the safe by the green release lever (see chapter "Removal/Installation of Components", section "Pulling out/pushing in the CMD-V4").

  **i** If the release lever jams with the CMD-V4, you must check the current position of the clamp. If possible, push the clamp carefully back to its home position. Perform a reset using the function button. Now check whether the CMD-V4 can be pulled out (see also section "Locking handle blocked").

- Remove the two scanning rails (see chapter "Removal/Installation of Components", section "Removing/installing scanning rails").
- Clean the two scanning rails.
- Reinstall the two scanning rails (see chapter "Removal/Installation of Components", section "Removing/installing scanning rails").
- Push the CMD-V4 by the green release lever back into the safe as far as possible (see the operating manual of the basic device).
- Close the safe door (see the description in the basic device operating manual).

# Removal/Installation of Components



This chapter describes the removal and installation of components of the Cash Media Dispenser (CMD-V4) without respect to the basic device.

Any differences that may exist between the CMD-V4 and the VCMD (Vertical Cash Media Dispensers) will be specifically addressed.

The device-specific removals and installations are included in the respective service manuals.



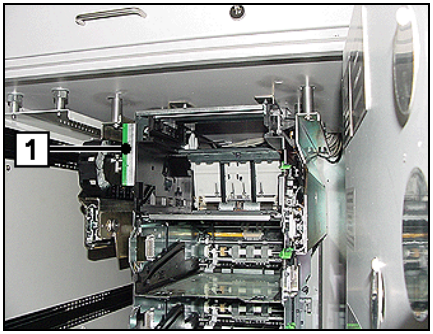
Note that the device should always be turned off during replacements of components.



After the replacement of components, the CMD-V4 or VCMD must be initialized once again (see chapter "Start-up", section "Start-up after component replacement").

# Pulling out/pushing in the CMD-V4

- Open the safe door (refer to the operating manual of the basic device).




**Pulling out:**
Pull the CMD-V4 out of the safe by the green release lever (1).

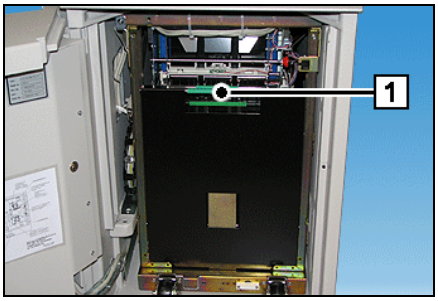
i If the release lever jams and you cannot pull out the CMD-V4, it is imperative that you consult the chapter "Troubleshooting", section "Release lever blocked".

**Pushing in:**
Use the green release lever to push the CMD-V4 into the device as far as it goes (the CMD-V4 must audibly latch into place).

# Pulling out/pushing in the VCMD

**Pulling out the VCMD up to level 1 (removing cassettes)**

- Open the device and safe door (refer to the operating manual of the basic device).




**Pulling out:**
Pull the VCMD out of the safe by the green rod (1) as far as possible.

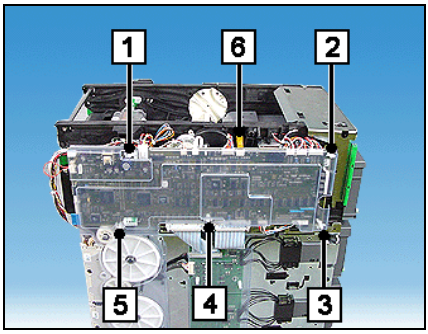
**Pushing in:**
Slide the VCMD into the device as far as possible using the rod marked in green.

# CMD controller

## CMD-V4

- Open the safe door (see operating manual of the basic device) and pull the CMD-V4 out of the device (see section "Pulling out/pushing in the CMD-V4").

The CMD controller is dissembled including the protective cover.




To remove the CMD controller, remove at first all connectors on the controller.

Detach the CMD controller carefully from the threaded pins (1) to (5).

Apply the jumper settings.

i The EEPROM (6) always has to stay on the stacker.

### Installation

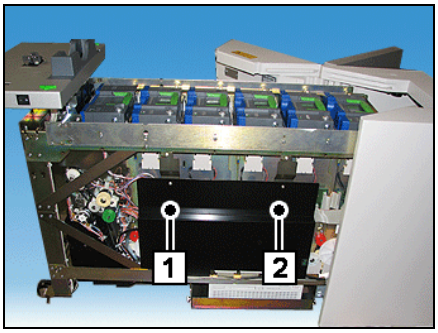
The controller is put on the threaded pins during installation. The controller must audibly lock into position while doing so.

i After the replacement of the CMD controller, the photosensors and the pressure sensor need to be initiated and the reference value need to be determined again (see chapter "Start-up").

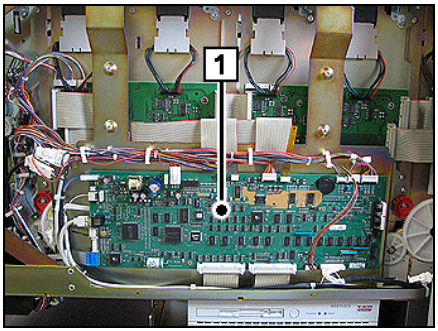
# VCMD

- Open the safe door (see operating manual of the basic device) and pull the VCMD out of the safe (see section "Pulling out/pushing in the VCMD").
- Remove the cover plate (see chapter "Removal/Installation of Components", section "Opening the device" in the service manual for the ProCash 5100).

The CMD controller is dissembled including the protective cover.

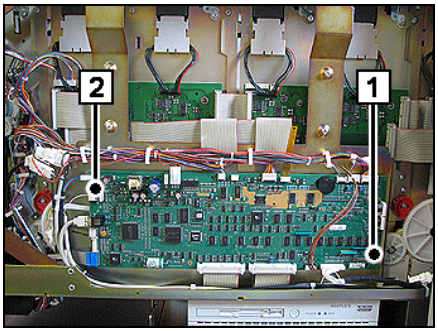



Loosen the screws (1) and (2) and remove the panel.




To remove the CMD controller (1), remove at first all connectors on the controller.

Detach the CMD controller carefully from the threaded pins.




Reinstall it by following the same steps in reverse order. The controller must audibly lock into position on the securing bolts while doing so.

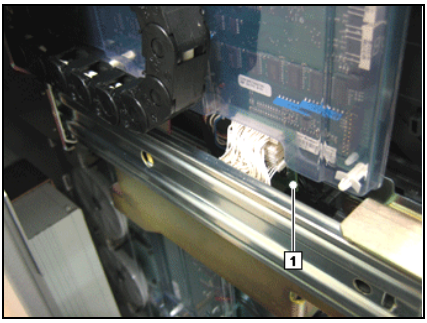
Apply the jumper settings (1)!

i The connector (2) for the door monitor is jumpered.

i After the replacement of the CMD controller, the photosensors and the pressure sensor need to be initiated and the reference value need to be determined again (see chapter "Start-up").

# Extension board ProCash 5000 (mini)

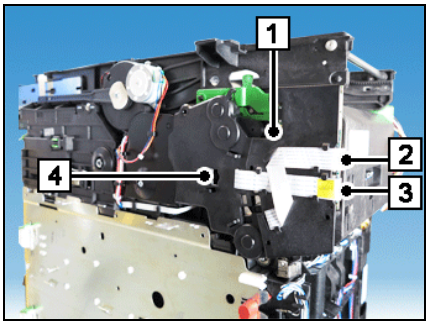
- Open the safe door and pull the CMD-V4 out of the device (see operating manual of the basic device).



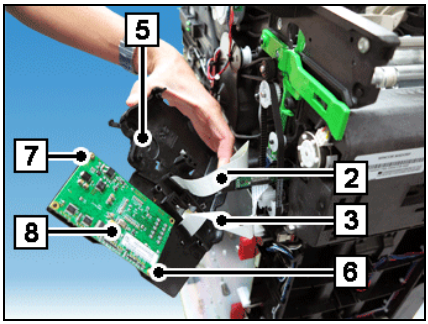

Remove all connectors from the extension board (1) and remove the board.

# Serial Number Recognition

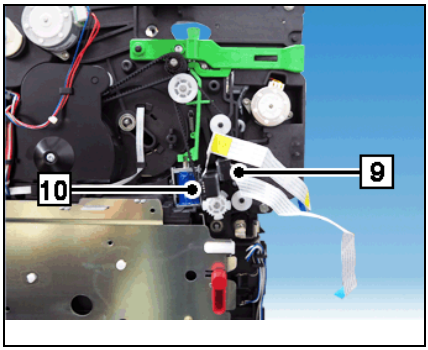
- Open the safe door (see operating manual of the basic device) and pull the CMD-V4 out of the device (see section "Pulling out/pushing in the CMD-V4").




Disconnect the cables (1) to (3). Remove the cables from the holding devices. Remove screw (4) and carefully pull off ...




… the cover (5). Pull the two cables (2) and (3) carefully out of the cover. Remove screws (6) und (7) and take out the control electronics (8).




Pull out the scanning rails (9) and (10). Observe the alignment and the color coding when you do so.

i Correct alignment of the scanning rails is imperative for the function. The scanning rail marked with yellow must be installed on the left and the scanning rail marked with blue on the right.

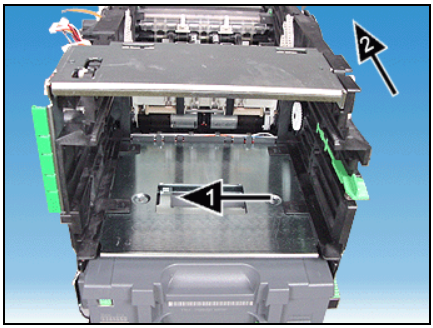
i The replacement always takes place as a module unit.

- Reinstall it by following the same steps in reverse order.

# Stacker

## CMD-V4

- Remove the CMD controller (see section "CMD controller").
- Remove the reject/retract cassette (see chapter "Device overview and operation", section "Removing the cassette").
- Remove the serial number detection device if present (see section "Serial number detection").




Slide the locking/release lever to the left (see arrow 1) until it locks into place.

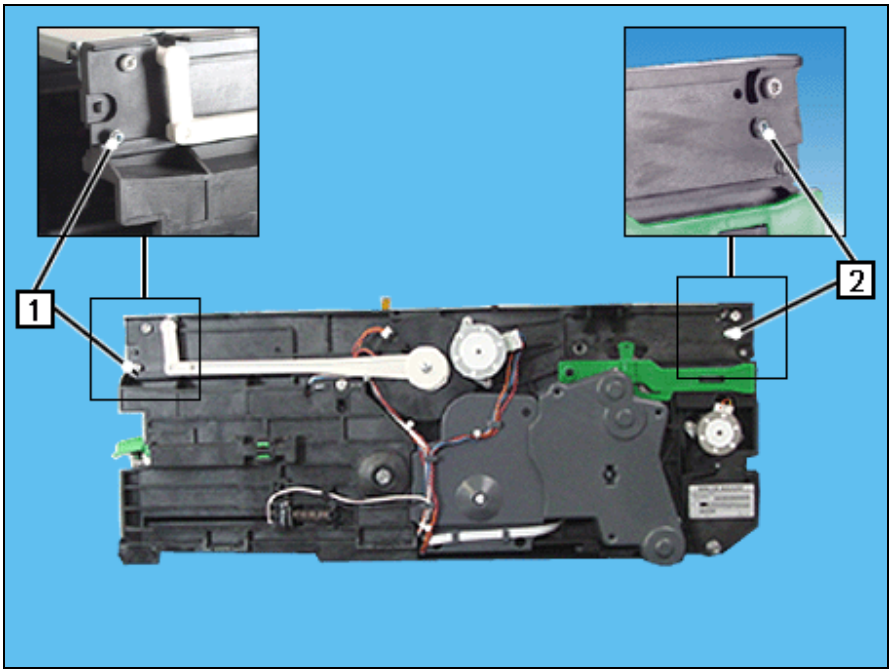
Push the stacker to the rear (arrow 2) and remove it upwards.

i The limit screws from the old stacker must be applied to the new stacker. The limit screws depend on the model. They are intended to to prevent it from falling out when it the clamp malfunctions. Only screws of the same type (length, diameter, type of thread) may be used.

Reinstall it by following the same steps in reverse order.

i The photosensors must be initiated after the stacker has been replaced.

The following illustration shows the position of the limit screws on the stacker.




1 Left-hand limit screw

2 Right-hand limit screw

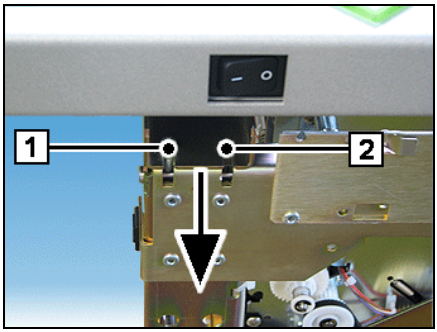
The following table contains an overview of the limit screws that must be present, depending on the system.

| **Limit screws, left** | **Limit screws, right** |
|---|---|
| ProCash 1500xe / USB Rearload | - |
| - | ProCash 1500xe / USB Frontload |
| ProCash 2000xe / USB Frontload/Rearload | ProCash 2000xe / USB Frontload/Rearload |
| ProCash 8000 Frontload/Rearload | ProCash 8000 Frontload/Rearload |
| CINEO C2060 Frontload/Rearload | CINEO C2060 Frontload/Rearload |
| ProCash 2050xe / USB | - |
| ProCash 8050 | - |
| CINEO C2550 | - |
| ProCash 2054xe | - |

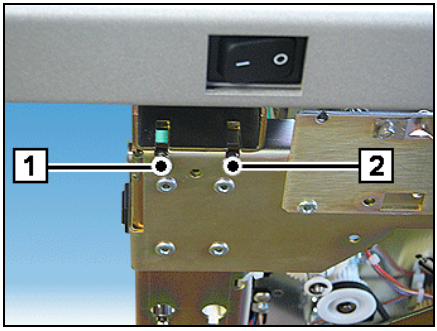
| **Limit screws, left** | **Limit screws, right** |
|---|---|
| ProCash 2100xe / USB Frontload/Rearload | ProCash 2100xe / USB Frontload/Rearload |
| ProCash 8100 Frontload/Rearload | ProCash 8100 Frontload/Rearload |
| CINEO C2070 Frontload/Rearload | CINEO C2070 Frontload/Rearload |
| ProCash 2150xe / USB | - |
| ProCash 8150 | - |
| CINEO C2560 | - |
| CINEO C2080 Frontload/Rearload | CINEO C2080 Frontload/Rearload |
| ProCash 2250xe / USB | - |
| CINEO C2560 DU | - |
| - | ProCash 2350xe / USB |
| - | CINEO C2590 |

# VCMD

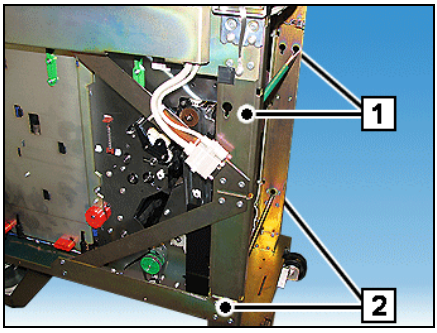
- Open the safe door (see operating manual of the basic device) and pull the VCMD out of the safe (see section "Pulling out/pushing in the VCMD").



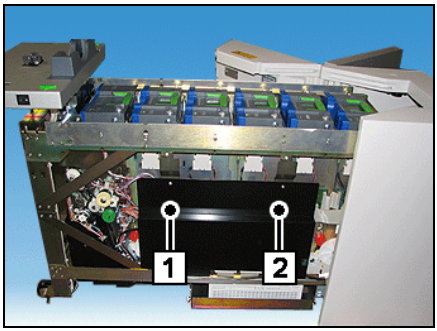

Undo screws (1) and (2) and swing the bracket down in the direction shown by the arrow.



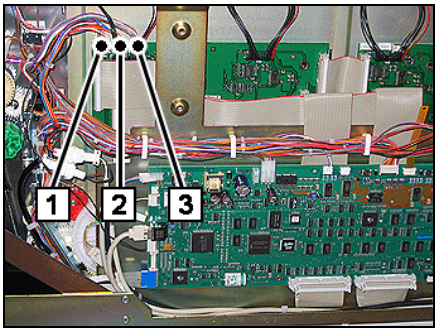

The operating panel can be lifted upwards when the screws (1) and (2) are folded up.



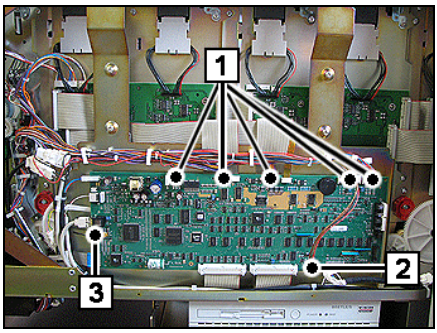

On the right-hand and left-hand sides, loosen the screws of the traverses (1) and (2) and remove the traverses.



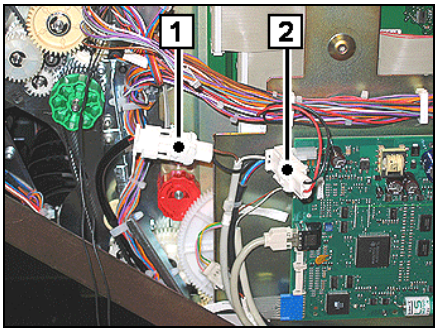

Loosen the screws (1) and (2) and remove the panel.




Detach the connectors (1) to (3) from the distributor board of the dispensing unit with multiple-note detection unit.




Open the retaining clips of the cable harness and pull off all of the connectors from the upper side of the CMD controller (1) and the connectors (2) and (3).

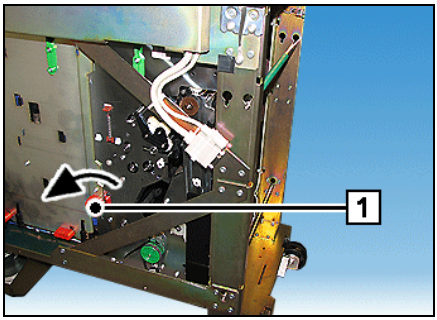



Disconnect the plug connections (1) and (2) to the main drive motor.




Press the locking lever of the reject cassette to the rear.

Pull the reject cassette out of the device.

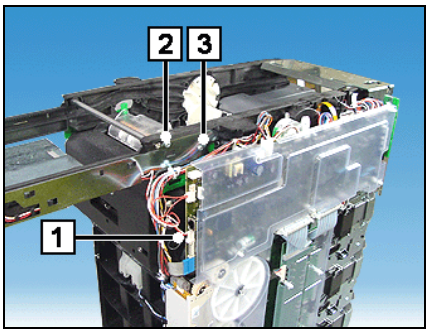



Rotate the locking knob of the stacker (1) counterclockwise by 180°.

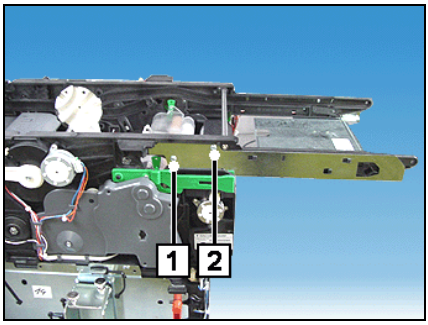
Remove the stacker to the front from the device (pull it out somewhat at the bottom and then unhinge it towards the top).

Reinstall it by following the same steps in reverse order.

# Horizontal output transport




On the left-hand side of the CMD-V4, detach the connector (1) and remove the two screws (2) and (3).




Remove the two screws on the right side (1) and (2).

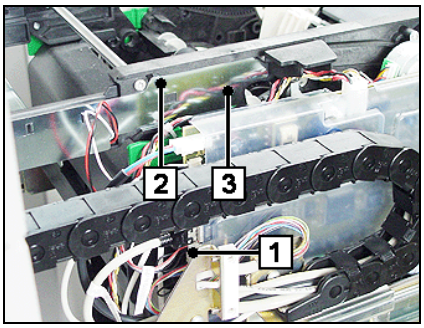
Pull the output transport slightly apart to the right and left and detach it.

Reinstall it by following the same steps in reverse order.

i Take care to ensure during installation that the same screw type is used.

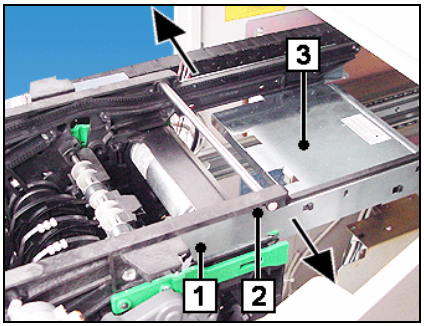
# Output transport ProCash 2050xe/USB / ProCash 8050 / CINEO C2550

- Open the safe door and pull the Cash Media Dispenser out of the device (consult the operating or the service manual of the basic device).




Detach connector (1) from the CMD controller.

Remove the screws (2) and (3).




Remove the screws (1) and (2) on the opposite side.

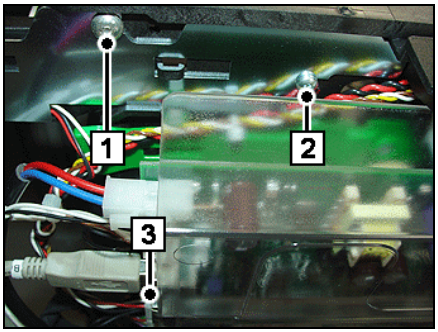
Press the two side panels outwards a little (see arrows) and remove the output transport (3) upwards.

Reinstall it by following the same steps in reverse order.

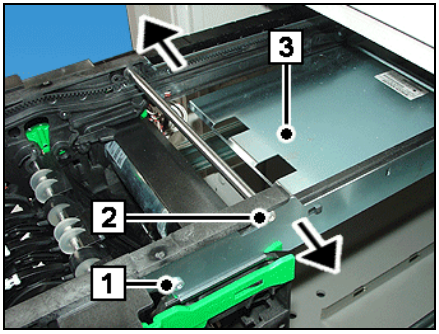
i For installing the new output transport, you may only use the screws previously removed or screws of the same type.

# Output transport ProCash 2054xe

- Open the safe door and pull the Cash Media Dispenser out of the device (consult the operating or the service manual of the basic device).




Remove screws (1) and (2) and detach connector (3) on the CMD controller.




Remove the screws (1) and (2) on the opposite side.

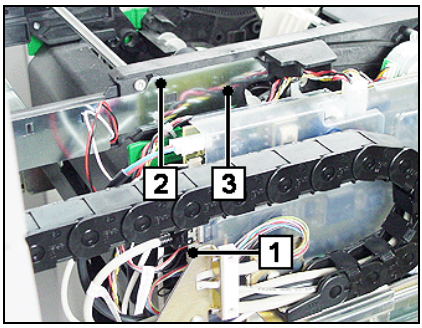
Press the two side panels outwards a little (see arrows) and remove the output transport (3) upwards.

Reinstall it by following the same steps in reverse order.

i For installing the new output transport, you may only use the screws previously removed or screws of the same type.

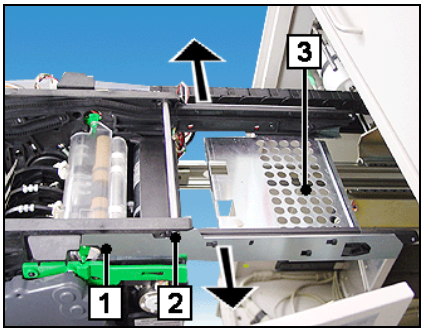
# Output transport ProCash 2150xe/USB / ProCash 8150 / CINEO C2560

- Open the safe door and pull the Cash Media Dispenser out of the device (consult the operating or the service manual of the basic device).




Detach connector (1) from the CMD controller.

Remove the screws (2) and (3).




Remove the screws (1) and (2) on the opposite side.

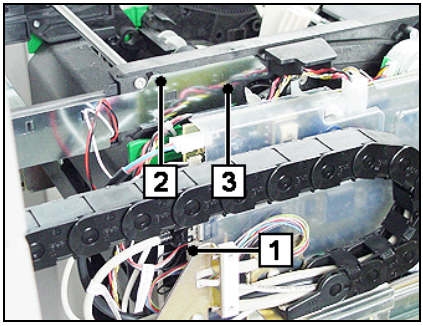
Press the two side panels outwards a little (see arrows) and remove the output transport (3) upwards.

Reinstall it by following the same steps in reverse order.

i For installing the new output transport, you may only use the screws previously removed or screws of the same type.

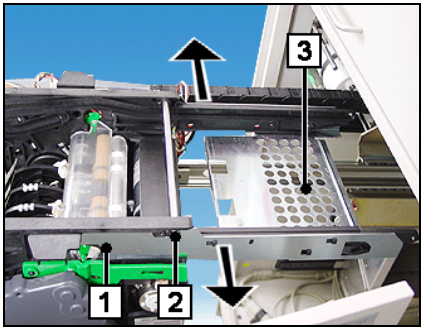
# Output transport ProCash 2250xe/USB / CINEO C2560 DU

- Open the safe door and pull the Cash Media Dispenser out of the device (consult the operating or the service manual of the basic device).




Detach connector (1) from the CMD controller.

Remove the screws (2) and (3).




Remove the screws (1) and (2) on the opposite side.

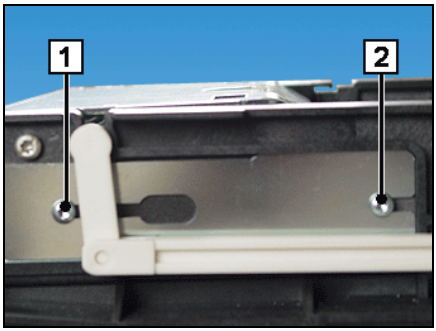
Press the two side panels outwards a little (see arrows) and remove the output transport (3) upwards.

Reinstall it by following the same steps in reverse order.

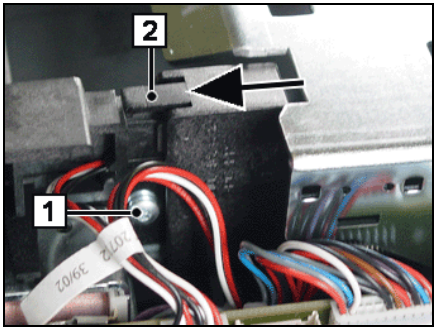
i For installing the new output transport, you may only use the screws previously removed or screws of the same type.

# Output transport ProCash 2350xe/USB / CINEO C2590

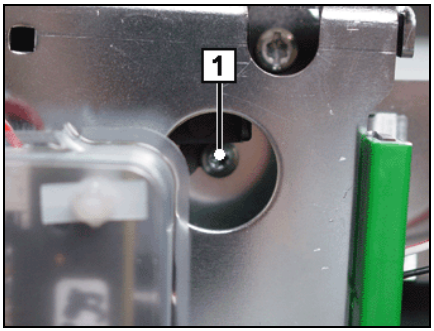
- Open the right-hand safe door and pull the Cash Media Dispenser out of the device as far as possible (consult the operating manual of the basic device).



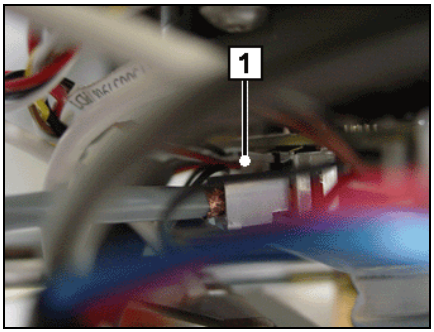

Remove screws (1) and (2).



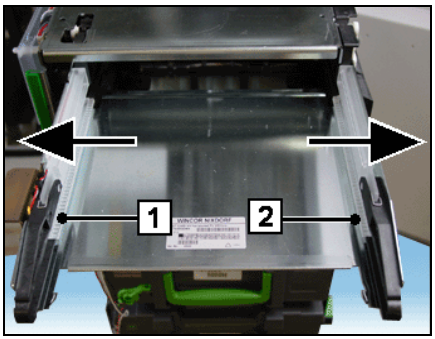

Remove the screw (1), lift the catch (2) of the emergency release a little bit and push the emergency release as far as possible in the direction of the arrow.




Remove the screw (1).




Disconnect the connector (1).

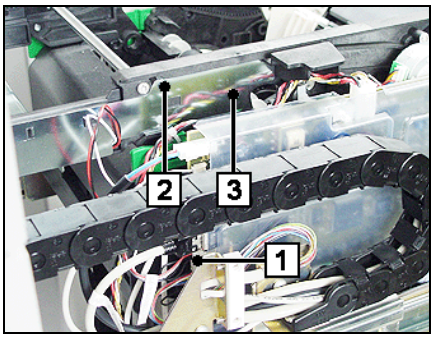



Press the panels (1) and (2) slightly outwards (see arrows) and pull the output transport to the front out of the device.

i Make sure during the installation that the emergency release is reinserted in its previous position. Reinstall it by following the same steps in reverse order. For installing the new output transport, you may only use the screws previously removed or screws of the same type.

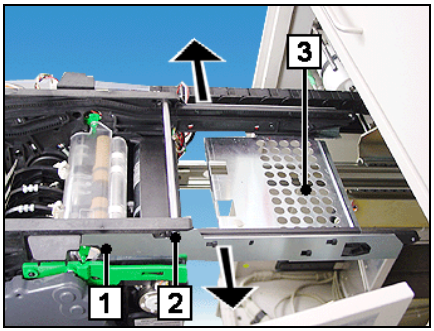
# Output transport ProCash 5000 (mini)

- Open the safe door and pull the Cash Media Dispenser out of the device as far as possible (consult the operating or the service manual of the ProCash 5000 (mini)).




Detach connector (1) from the CMD controller.

Remove the screws (2) and (3).




Remove the screws (1) and (2) on the opposite side.

Press the two side panels outwards a little (see arrows) and remove the output transport (3) upwards.

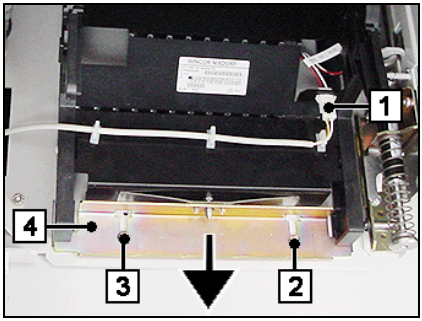
Reinstall it by following the same steps in reverse order.

i For installing the new output transport, you may only use the screws previously removed or screws of the same type.

# Vertical output transport

## Output transport ProCash 2000xe/USB RL

- Pull the operating panel out of the device (see operating manual or service manual for the ProCash 2000xe / 2000xe USB).




Disconnect the connector (1) and free the cable from the clamps.

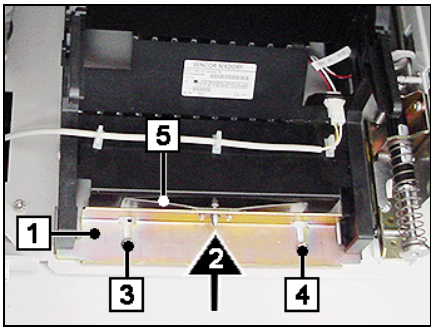
Loosen the screws (2) and (3), and pull the plate (4) out of the device a little (see arrow).

Pull the output transport a little in the direction of the arrow and remove it upwards.

Reinstall it by following the same steps in reverse order.

i When replacing the output transport make sure that it fits properly in the guides of the stacker. Pull the cash media dispenser out of the device, if necessary, and then push it back in.

**Adjustment**

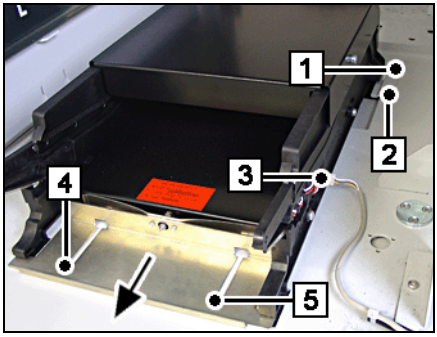



Push the plate (1) up against the output transport (2) with the cash media dispenser pushed in.

Then push the plate approx. 3 (0.12") to 5 mm (0.2") back and secure it with screws (3) and (4).

When the plate is secured, the spring (5) must still exert noticeable pressure on the output transport.

# Output transport ProCash 8000 / CINEO C2060




Remove screws (1) and (2) and remove the mounting plate.

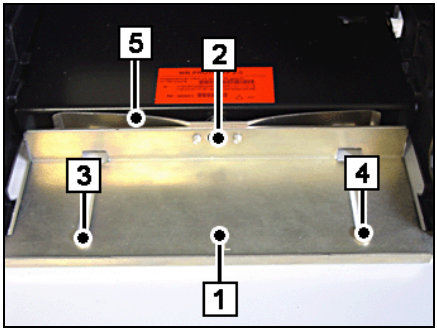
Disconnect the connector (3).

Loosen screws (4) and (5) and pull the plate a little out of the device (see arrow). Pull the presenter a little in the direction of the arrow and lift it up and out.

Reinstall it by following the same steps in reverse order.

i When replacing the output transport make sure that it fits properly in the guides of the stacker. Pull the cash media dispenser out of the device, if necessary, and then push it back in.

**Adjustment**



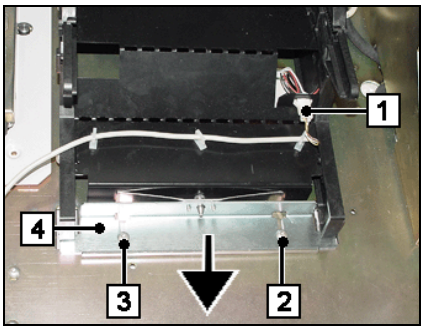

Push the plate (1) up against the output transport (2) with the cash media dispenser pushed in.

Then push the plate approx. 3 (0.12") to 5 mm (0.2") back and secure it with screws (3) and (4).

When the plate is secured, the spring (5) must still exert noticeable pressure on the output transport.

# Output transport ProCash 2100xe/USB RL

- Open the door of the operating panel and pull the operating panel out of the device (see operating manual or service manual for the ProCash 2100xe / 2100xe USB).




Disconnect the connector (1) and free the cable from the clamps.

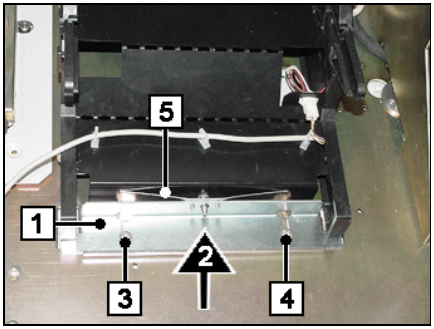
Loosen the screws (2) and (3), and pull the plate (4) out of the device a little (see arrow).

Pull the output transport a little in the direction of the arrow and remove it upwards.

Reinstall it by following the same steps in reverse order.

i When replacing the output transport make sure that it fits properly in the guides of the stacker. Pull the cash media dispenser out of the device, if necessary, and then push it back in.

**Adjustment**

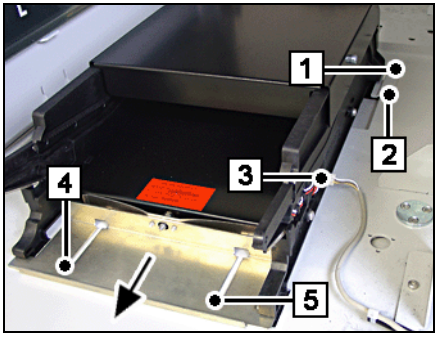



Push the plate (1) up against the output transport (2) with the cash media dispenser pushed in.

Then push the plate approx. 3 (0.12") to 5 mm (0.2") back and secure it with screws (3) and (4).

When the plate is secured, the spring (5) must still exert noticeable pressure on the output transport.

# Output transport ProCash 8100 / CINEO C2070




Remove screws (1) and (2) and remove the mounting plate.

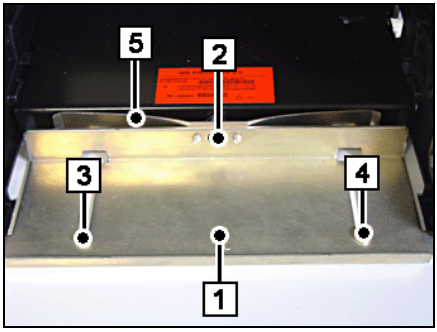
Disconnect the connector (3).

Loosen screws (4) and (5) and pull the plate a little out of the device (see arrow). Pull the presenter a little in the direction of the arrow and lift it up and out.

Reinstall it by following the same steps in reverse order.

i When replacing the output transport make sure that it fits properly in the guides of the stacker. Pull the cash media dispenser out of the device, if necessary, and then push it back in.

**Adjustment**

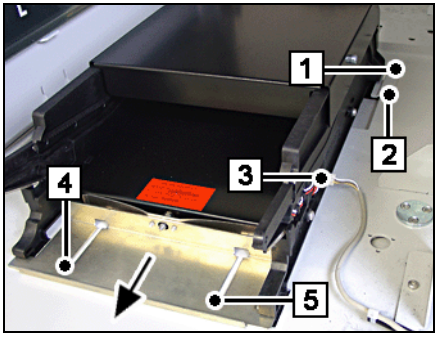



Push the plate (1) up against the output transport (2) with the cash media dispenser pushed in.

Then push the plate approx. 3 (0.12") to 5 mm (0.2") back and secure it with screws (3) and (4).

When the plate is secured, the spring (5) must still exert noticeable pressure on the output transport.

# Output transport CINEO C2080




Remove screws (1) and (2) and remove the mounting plate.

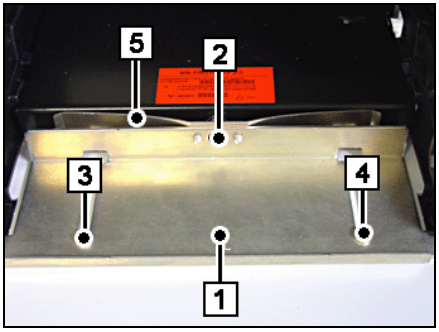
Disconnect the connector (3).

Loosen screws (4) and (5) and pull the plate a little out of the device (see arrow). Pull the presenter a little in the direction of the arrow and lift it up and out.

Reinstall it by following the same steps in reverse order.

When replacing the output transport make sure that it fits properly in the guides of the stacker. Pull the cash media dispenser out of the device, if necessary, and then push it back in.

### Adjustment



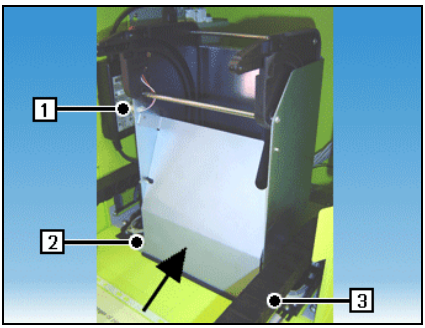

Push the plate (1) up against the output transport (2) with the cash media dispenser pushed in.

Then push the plate approx. 3 (0.12") to 5 mm (0.2") back and secure it with screws (3) and (4).

When the plate is secured, the spring (5) must still exert noticeable pressure on the output transport.

# Output transport Beetle/iSCAN

- Open the safe door (see operating manual or service manual).




Disconnect the connector (1) and free the cable from the clamps.

Remove the four screws (2) and (3), two screws on each side.

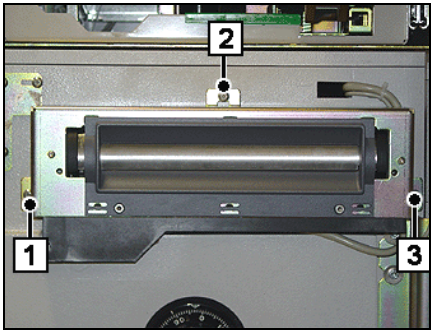
Slide the output transport in the direction shown by the arrow and remove it upwards.

Reinstall it by following the same steps in reverse order.

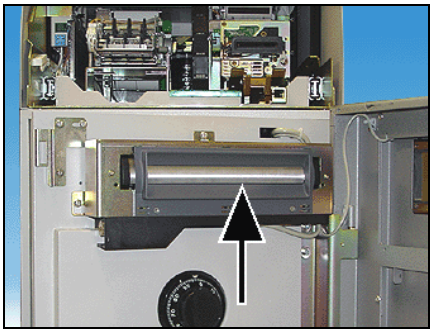
i When replacing the output transport make sure that it fits properly in the guides of the stacker. Pull the cash media dispenser out of the device, if necessary, and then push it back in.

# Shutter ProCash 1500xe / USB

- Open the front door (see operating manual or service manual for the ProCash 1500xe / 1500xe USB).

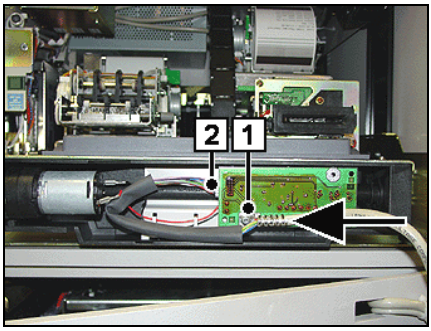



Loosen screws (1) to (3).



Open the safe door (Frontload) or pull out the CMD-V4 a little (Rearload) and remove the shutter upwards in the direction shown by the arrow.

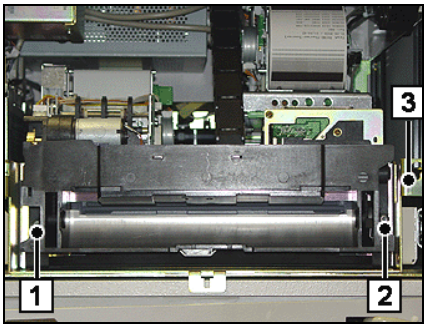
Set the shutter down on the safe.




Loosen screw (1) and push the ground connection to the left in the direction shown by the arrow.

Detach connector (2).

Turn the shutter around.




Remove screws (1) and (2) and remove the shutter support with the shutter plate (3). It will be needed when it is reinstalled.

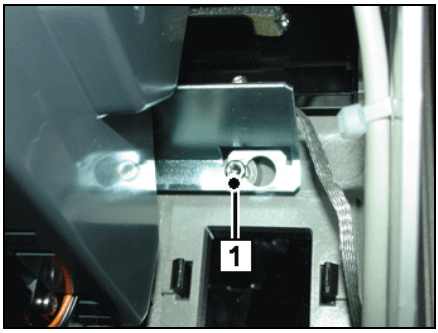
Reinstall it by following the same steps in reverse order.

i When installing the shutter be sure to push it down as far as possible.

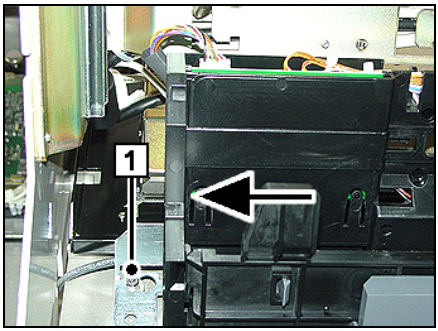
i After adjusting the shutter, complete a test dispense and output of a banknote.

# Shutter ProCash 2000xe / USB FL/RL

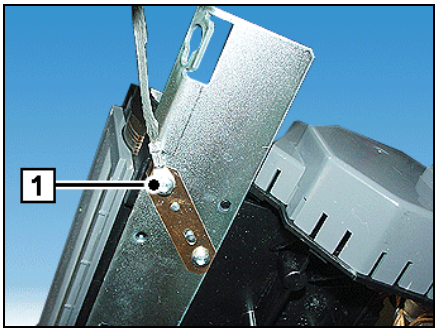
- Pull the operating panel out of the device (see operating manual or service manual for the ProCash 2000xe / 2000xe USB).



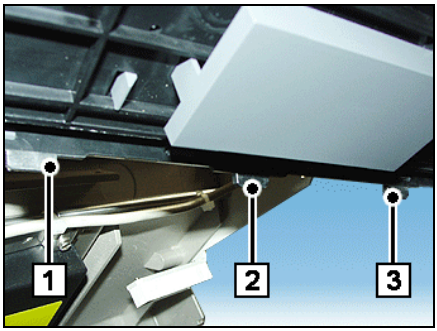

Disengage the screw (1).



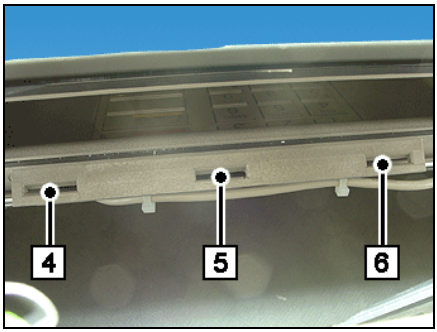

Loosen the screw (1), slide the shutter slightly in the direction of the arrow and remove it to the rear.



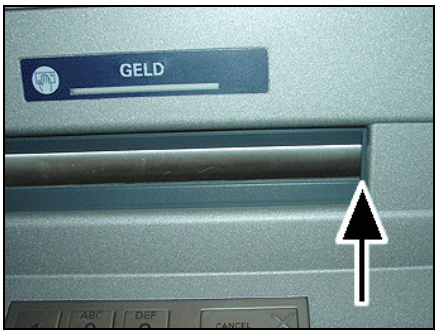

Remove the screw (1) and remove the shutter from the device.




When you install the scanner, note that tabs (1) to (3) ...




... must be inserted into the respective mountings (4) to (6).



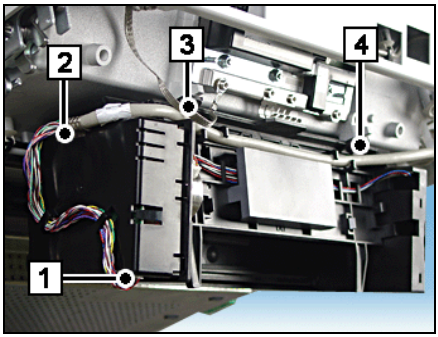

Adjust the shutter in such a way that the shutter opening is flush with the opening in the operating panel on the left-hand side as seen from the shutter (see arrow).

Continue with the installation by following the same steps in reverse order.

The shutter must have a ground connection. If it does not have one, it must be retrofitted.

# Shutter ProCash 8000 / CINEO C2060

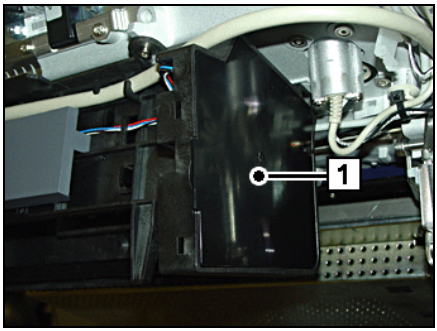
- Open the operating panel (see operating manual of the ProCash 8000 / CINEO C2060).



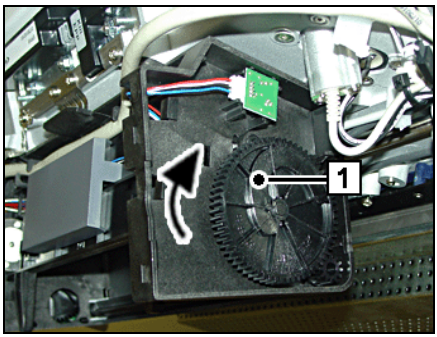

Disconnect the connector (1).

Remove the screw of the ground strap (2) and detach the cable from all mountings.

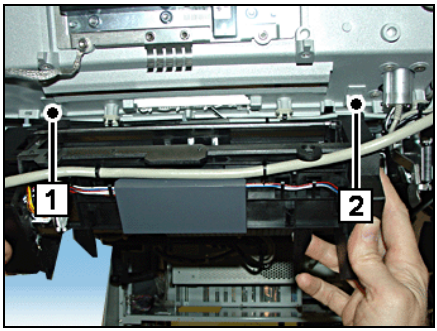
Remove screws (3) and (4).




Remove the cover (1) on the right side.



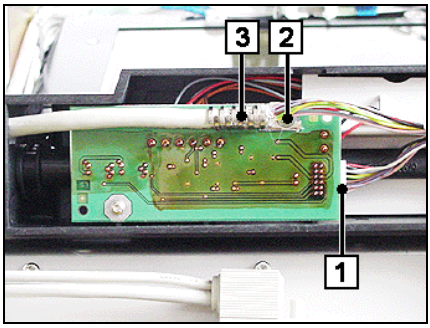

Turn the wheel (1) in the direction of the arrow far enough as to enable release and removal of the shutter.




During the installation, make sure that the catches (1) and (2) hook in the corresponding mountings.

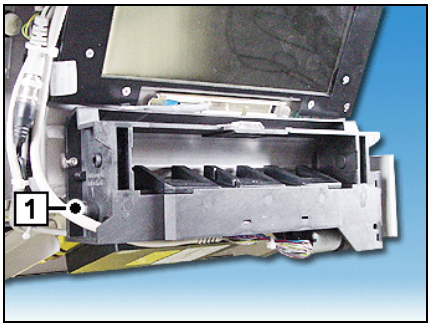
# Shutter ProCash 2050xe / USB

- Pull the operating panel out of the device (see operating manual or service manual for the ProCash 2050xe / 2050xe USB).

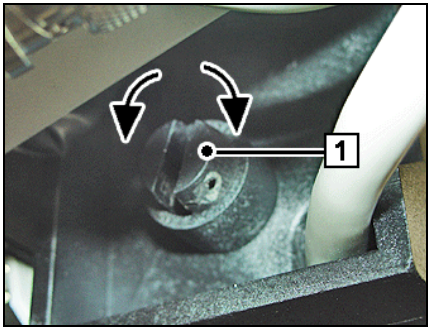



Disconnect the connector (1).

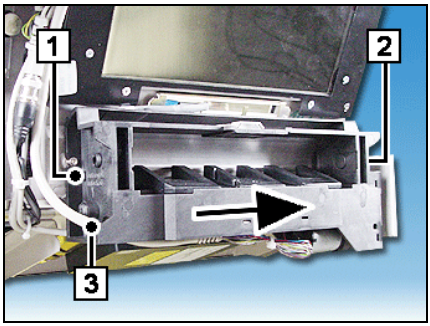
Loosen screw (2) and unhook the ground strap (3).




Open the shutter manually (1). See the following illustration as well.




Open the shutter flap of the shutter by rotating on the shaft (1).




Undo screws (1) and (2).

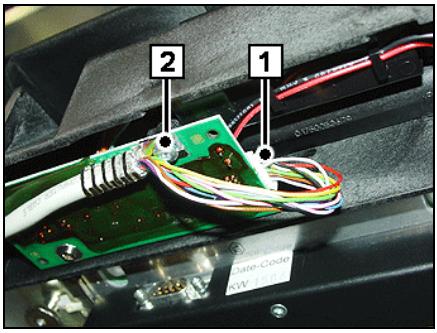
Push the shutter a little in the direction of the arrow and remove it.

Pull out the cable (3).

Reinstall it by following the same steps in reverse order.

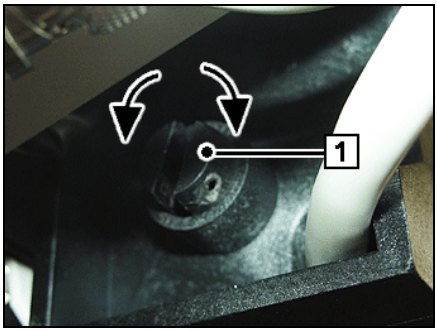
# Shutter ProCash 2054xe

- Pull the operating panel out of the device (see operating manual or service manual for the ProCash 2054xe).

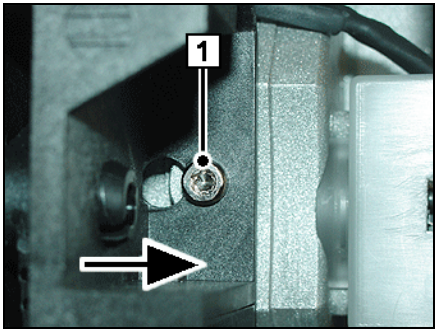



Disconnect the connector (1).

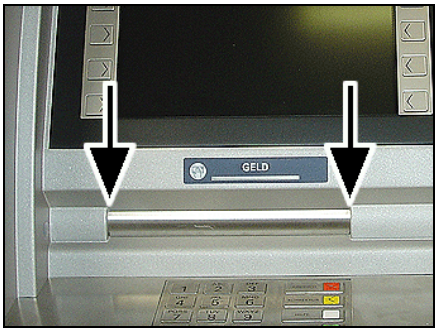
Loosen the screw (2) on the underside of the shutter and remove the connection cable from the holder.




Rotate the adjusting screw (1) to the right or to the left until the shutter flap is opened.




Loosen the screw (1) and the corresponding screw on the opposite side. Push the shutter a little in the direction of the arrow and remove it to the rear.

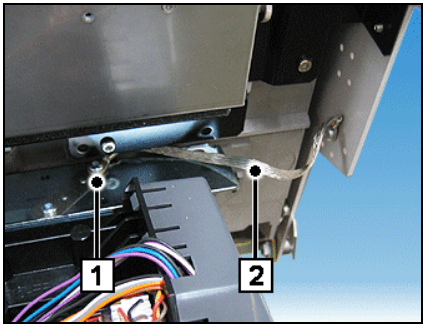



During installation, take care to ensure that the shutter flap is centered (see arrows).

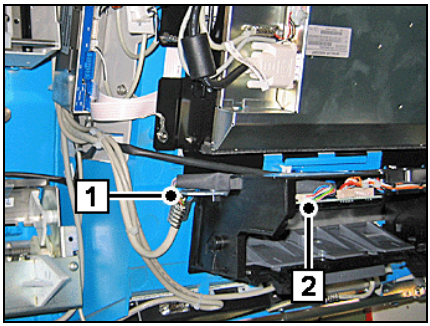
Reinstall it by following the same steps in reverse order.

# Shutter ProCash 2100xe / USB FL/RL

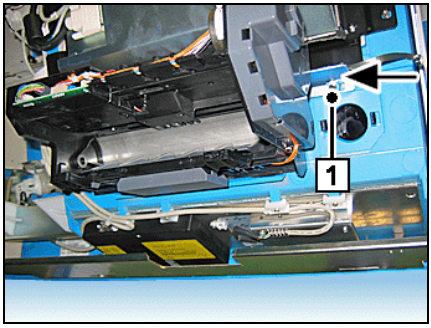
- Open the door of the operating panel and pull the operating panel out of the device (see operating manual or service manual for the ProCash 2100xe / 2100xe USB).



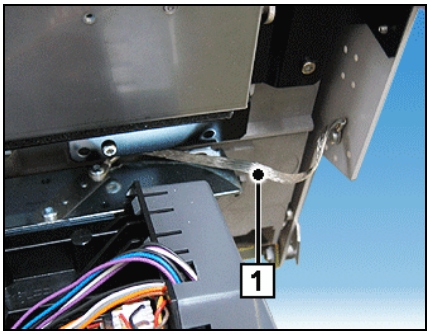

Remove the screw (1) and slide the ground strap (2) to the side.




Remove screw (1) and detach the connector (2).




Loosen the screw (1), slide the shutter slightly in the direction of the arrow and remove it to the front.

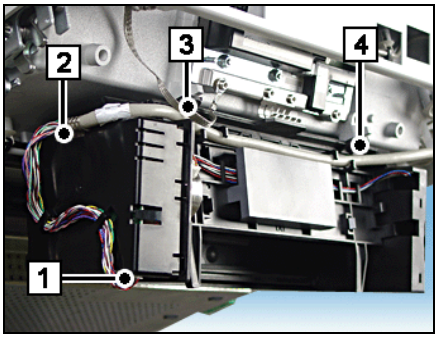



i There must be a ground strap (1) between the shutter and the operating panel.
If it does not have one, it must be retrofitted.

Continue with the installation by following the same steps in reverse order.

# Shutter ProCash 8100 / CINEO C2070

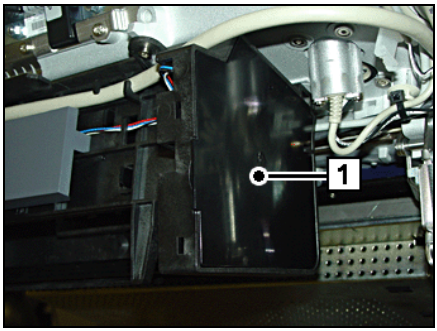
- Open the operating panel (see operating manual of the ProCash 8100 / CINEO C2070).



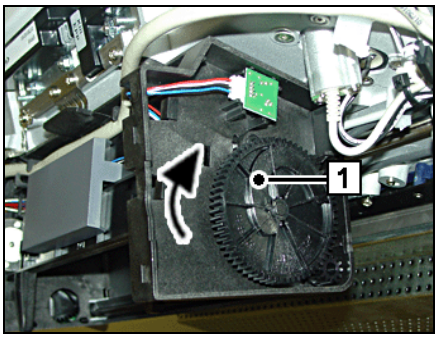

Disconnect the connector (1).

Remove the screw of the ground strap (2) and detach the cable from all mountings.

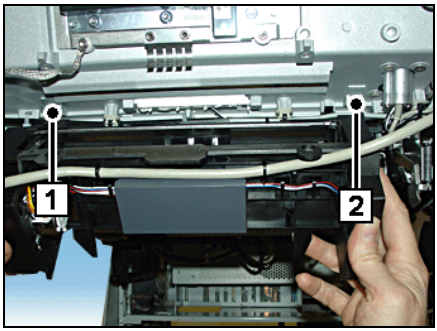
Remove screws (3) and (4).




Remove the cover (1) on the right side.



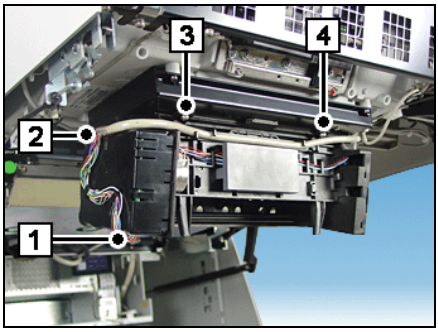

Turn the wheel (1) in the direction of the arrow far enough as to enable release and removal of the shutter.




During the installation, make sure that the catches (1) and (2) hook in the corresponding mountings.

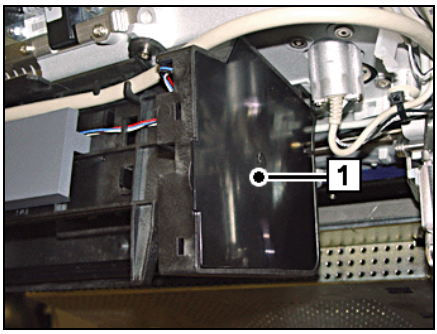
# Shutter ProCash 8100 / CINEO C2070

- Raise the operating panel (see the operating manual of the CINEO C2080).

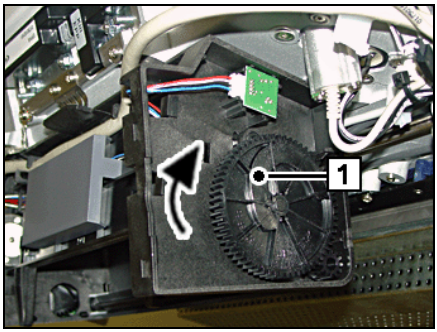



Disconnect the connector (1).
Remove the screw of the ground strap (2) and detach the cable from all mountings.

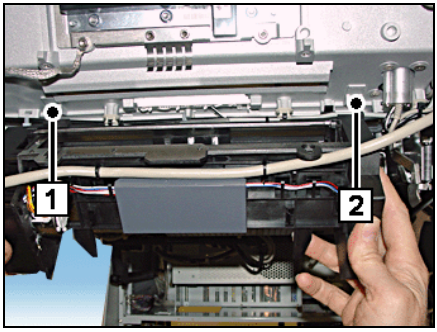
Remove the screws (3) and (4).




Remove the cover (1) on the right side.




Turn the wheel (1) in the direction of the arrow far enough as to enable release and removal of the shutter.



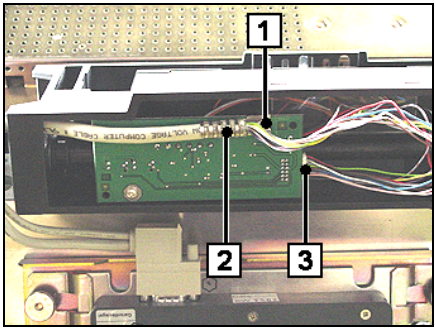

During the installation, make sure that the catches (1) and (2) hook in the corresponding mountings.

Continue with the installation by following the same steps in reverse order.

# Shutter ProCash 2150xe / USB

## Pre-series level

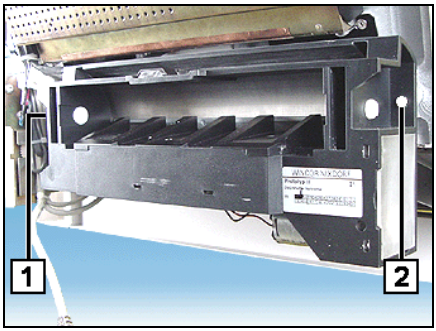
- Pull the operating panel out of the device (see operating manual or service manual for the ProCash 2150xe / 2150xe USB).




Loosen the screw (1) on the underside of the shutter.

Slide the cable (2) slightly to the right, unhook it on the left-hand side and remove it to the left.

Disconnect the connector (3).



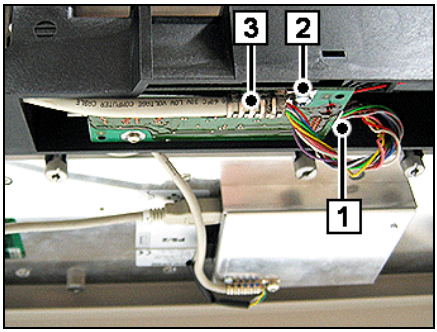

Remove screws (1) and (2) and remove the shutter upwards.

Reinstall it by following the same steps in reverse order.

The shutter must have a ground connection. If it does not have one, it must be retrofitted.

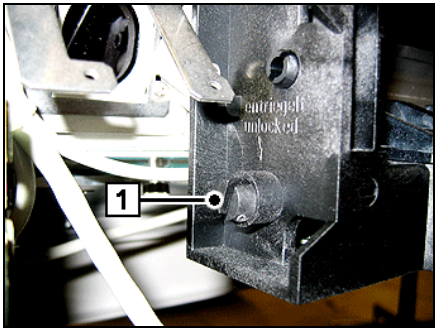
# Series version

- Pull the operating panel out of the device (see operating manual or service manual for the ProCash 2150xe / 2150xe USB).

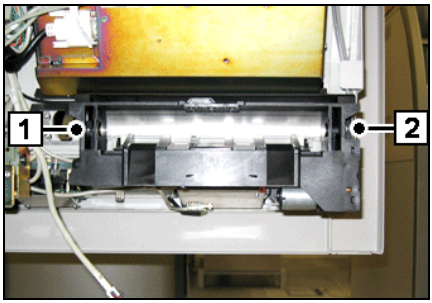



On the underside of the shutter detach connector (1).

Loosen screw (2) and remove the ground strap (3).




Before removing the shutter, open its shutter flap by rotating the button (1).



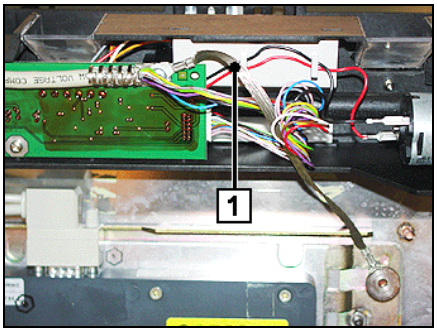

Remove screws (1) and (2) and remove the shutter upwards.

- Before installing the new shutter, open its shutter flap by rotating the button (1) (see illustration above).

Continue with the installation by following the same steps in reverse order.



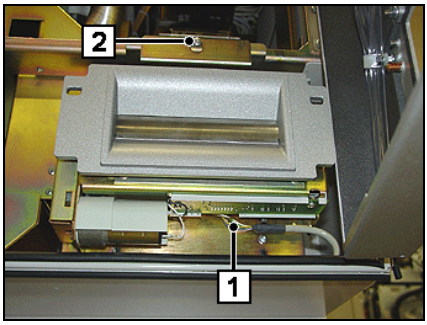

Adjust the shutter so that the flap is in the center (see arrows).




During installation of the shutter, do not fail to ensure that the ground strap (1) from the keyboard to the shutter is connected once again to the electronic board of the shutter!

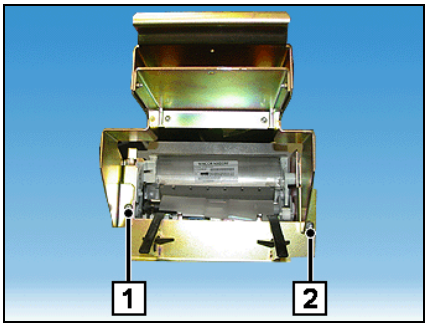
# Shutter ProCash 2250xe / USB Drive Up

- Open the operating panel door (see operating manual or service manual for the ProCash 2250xe / 2250xe USB Drive Up).

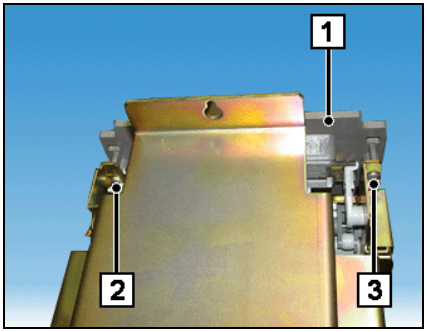



Detach the cable (1).

Loosen the screw (2), slide the shutter slightly upwards and remove it to the front.




Turn the shutter and remove the screws (1) and (2).



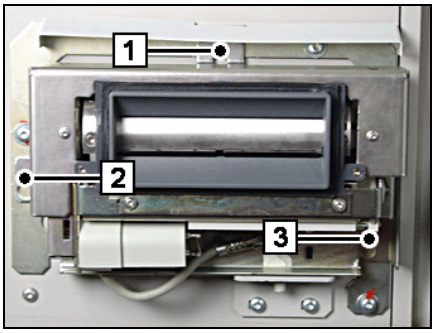

Remove the shutter faceplate (1) by removing the screws (2) and (3).

Reinstall it by following the same steps in reverse order.

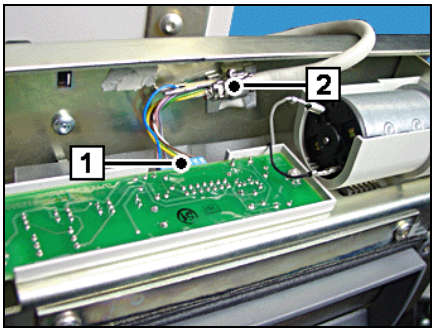
i The shutter flaceplate is needed again for the installation of the new shutter.

# Shutter ProCash 2350xe / USB

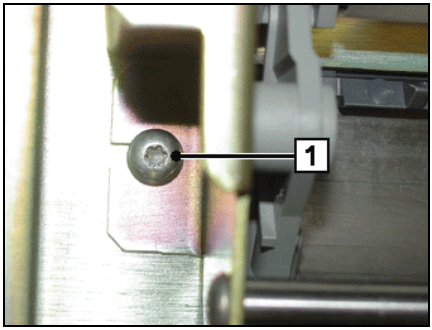
- Open the operating panel (see operating manual or service manual for the ProCash 2350xe / 2350xe USB).



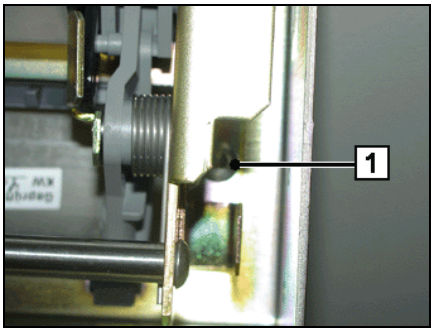

Remove the screw (1) and loosen the screws (2) and (3). Push the shutter slightly upwards, detach it and turn it around.




Detach the connector (1) and remove the ground connection (2).




Remove the screw (1).



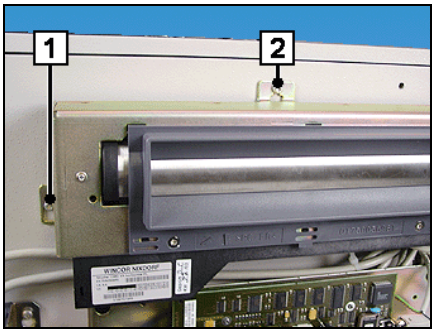

Remove the screw (1). Open the shutter manually so you can remove it upwards.

Install the new shutter on the old mounting plate.

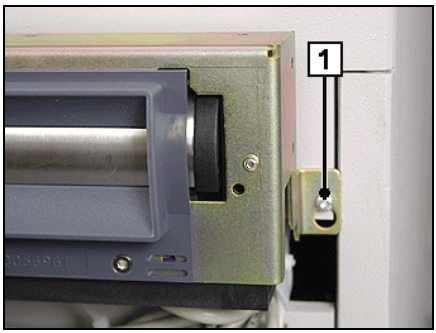
Continue with the installation by following the same steps in reverse order.

# Shutter ProCash 5000 (mini)

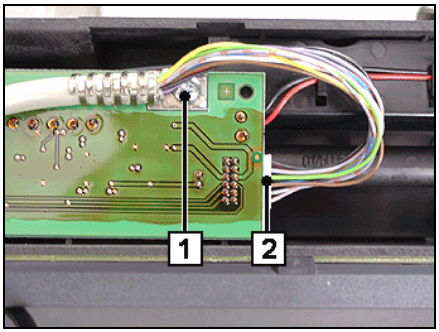
- Remove the safe door covering (see operating manual or service manual for the ProCash 5000 (mini)).




Undo screws (1) and (2).




Loosen the screw (1). Remove the shutter upwards and put it aside.




Disengage the ground connection (1), disconnect the plug (2) and remove the shutter.

Reinstall it by following the same steps in reverse order.

# Adjusting the shutters



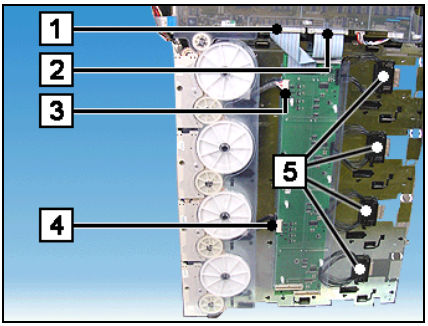

Adjust the shutter so that the flap is in the center (see arrows).

# Distributor board

## CMD-V4

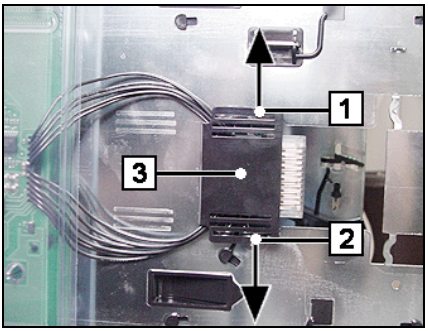
### Quadruple rack

- Remove all cassettes from the CMD-V4 (see chapter "Device overview and operation", section "Removing the cassette").

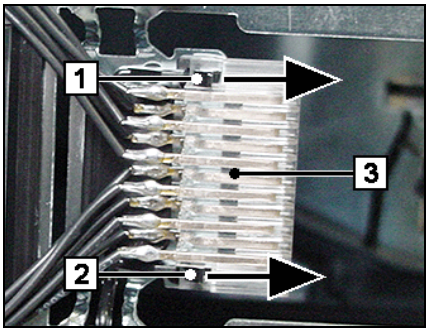



Detach the tab connectors (1) and (2) from the controller and the connectors (3) and (4) from the distributor board.

The removal of the connectors (5) is described in the following.

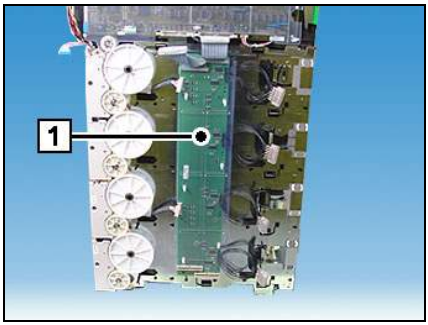



To do so, press catches (1) and (2) in the direction of the arrows and open the hinged cover (3). Carry out this procedure with the other three covers as well.




Press the catches (1) and (2) in the direction of the arrows while pulling off connector (3) towards the front.

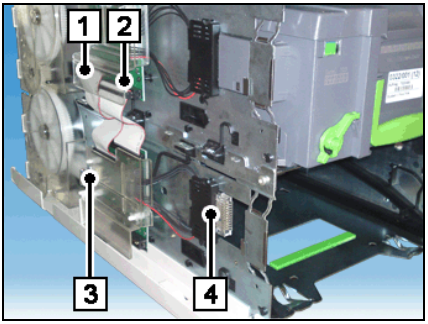
Proceed exactly the same way with the other three connectors.




Carefully pull the distributor board (1) with the protection cover from the fastening bolts.

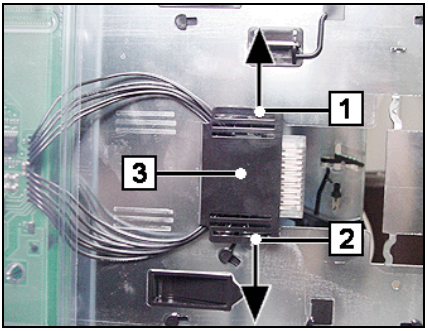
## 1-cassette housing

- Remove all cassettes from the CMD-V4 (see chapter "Device overview and operation", section "Removing the cassette").

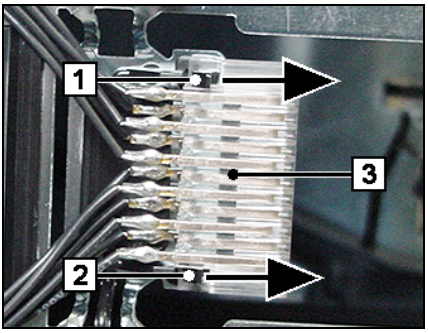



Detach the tab connectors (1) and (2) and the connector (3) from the distributor board.

The removal of the connectors (4) is described in the following.

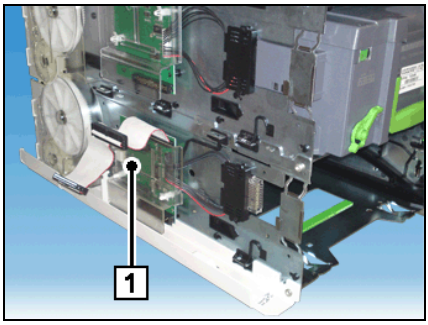



To do so, press catches (1) and (2) in the direction of the arrows and open the hinged cover (3). Carry out this procedure with the other three covers as well.




Press the catches (1) and (2) in the direction of the arrows while pulling off connector (3) towards the front.

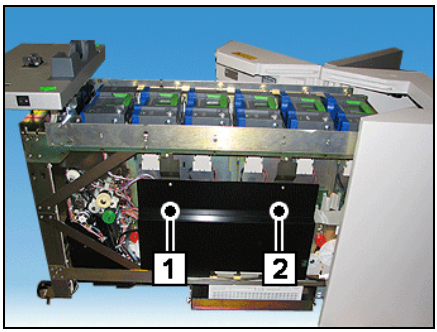
Proceed exactly the same way with the other three connectors.



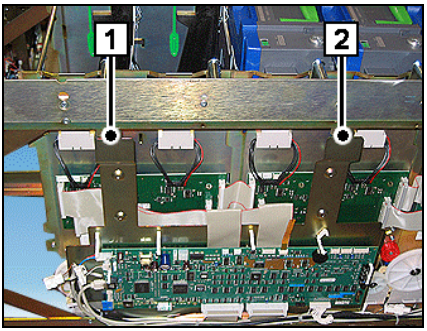

Carefully pull the distributor board (1) with the protection cover from the fastening bolts.

# VCMD

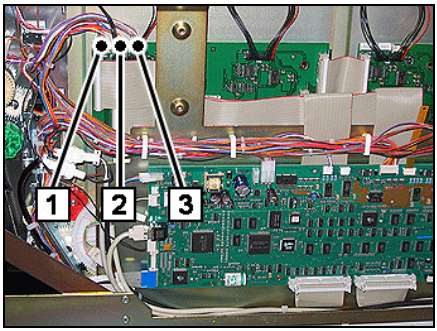
- Open the safe door (see operating manual of the basic device) and pull the VCMD out of the safe (see section "Pulling out/pushing in the VCMD").
- Remove the cover plate (see chapter "Removal/Installation of Components", section "Opening the device" in the service manual for the ProCash 5100).



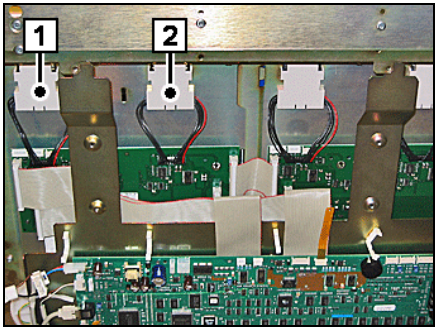

Loosen the screws (1) and (2) and remove the panel.



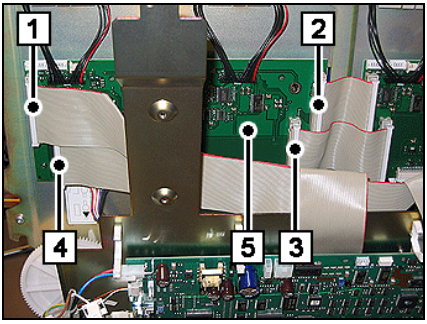

Undo screws (1) and (2).
Pull the mounting of the CMD controller somewhat to the right and swing the mounting down.




Detach the connectors (1) to (3) from the distributor board of the dispensing unit with multiple-note detection unit.

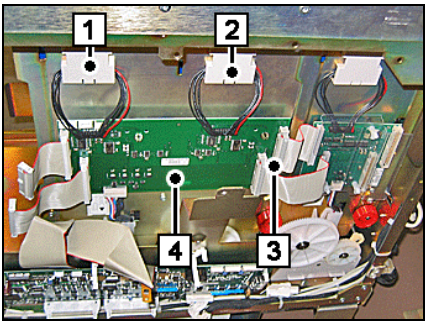



Detach connectors (1) and (2).




Detach the plugs (1) to (4) from the distributor board.

Detach the distributor board (5) from the fastening bolts.




Detach connectors (1) and (2).

Detach the two connectors (3) from the right-hand side of the distributor board.

Carefully detach the distributor board (4) from the fastening bolts.

# Dispensing units

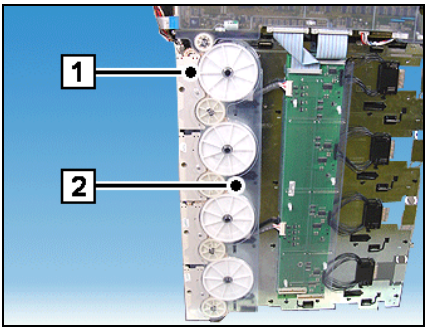
## CMD-V4

### Double dispensing unit

Two double dispensing units can be deployed in the quadruple rack. The top dispensing unit always contains the multiple-note detection unit.

Remove the cassettes before you remove the dispensing unit!

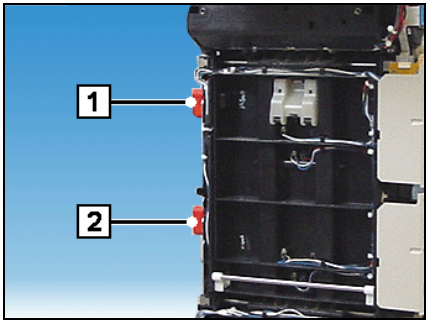
The two dispensing units should not be swapped.




Remove the screw (1).

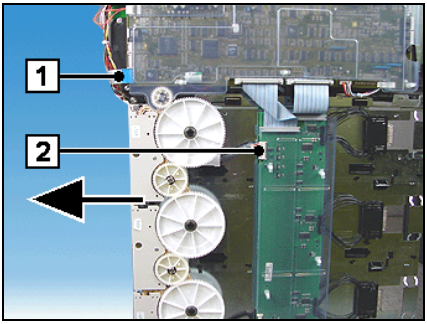
Unclip the protective cover (2) from the holders and remove the protective cover.

### Upper dispensing unit with multiple-note detection unit




**Dismantling:**

Release the upper dispensing unit by turning the locking/release levers (1) and (2) each 90° counterclockwise.

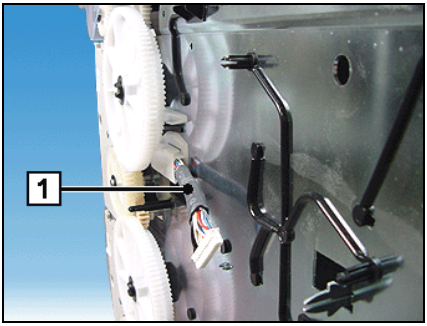



The multiple-note detection unit that is connected by cable with the CMD controller is located in the upper dispensing unit. This cable must be disconnected (1).

Disconnect the plug (2) from the distributor board.

Remove the dispensing unit in the direction shown by the arrow.

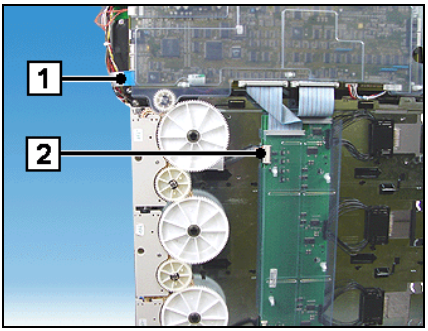
- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").




**Installation:**

Guide the connector cable (1) carefully between the gearwheels and the device wall.

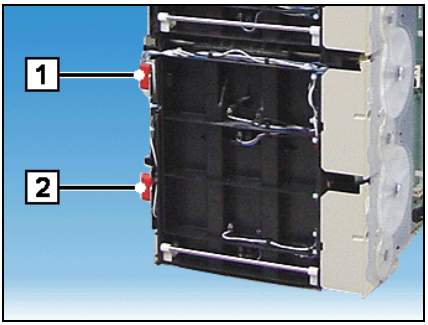
- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.
- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position.




Connect the cable to the CMD controller (1) and to the distributor board (2).

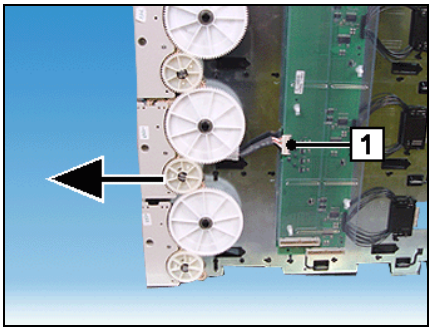
- Install the protection cover.

### Lower dispensing unit




**Dismantling:**

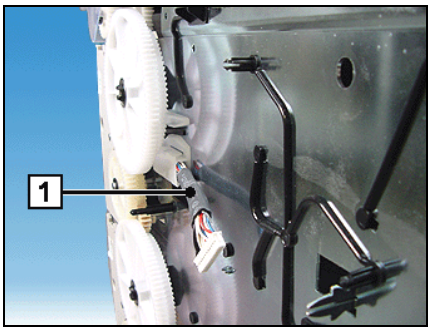
Turn the locking/release levers (1) and (2) on the left side of the dispensing unit each 90 degrees counterclockwise.




Disconnect the plug (1) from the distributor board.

Remove the lower dispensing unit in the direction shown by the arrow.

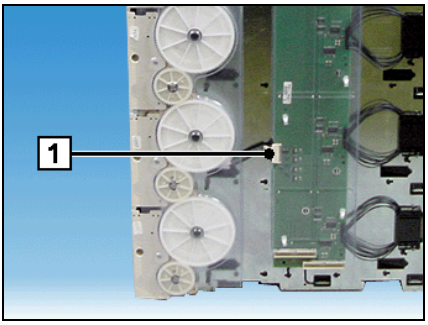
- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").




**Installation:**

Guide the connector cable (1) carefully between the gearwheels and the device wall.

- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.
- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position.

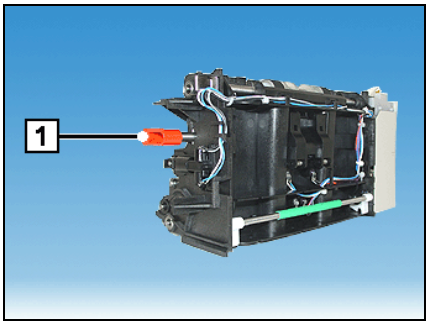



Connect the cable to the distributor board (1).

- Install the protection cover.

## Single dispensing unit with multiple-note detection unit

The cassette must be removed before the single dispensing unit!




**Dismantling**

Release the dispensing unit by turning the locking/release lever (1) 90° counterclockwise.

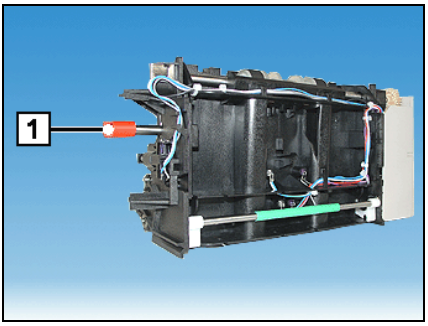
- The multiple-note detection unit is located in the upper dispensing unit and is connected by cable with the CMD controller. This cable must be disconnected.
- Disconnect the plug from the distributor board.
- Remove the dispensing unit.

**Installation**

- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").
- Guide the connector cable carefully between the gearwheels and the device wall (see also the section "Double dispensing unit").
- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.
- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position (see also section "Double dispensing unit").
- Connect the cable to the CMD controller and to the distributor board.
- Install the protection cover on the CMD controller.

## Single dispensing unit without multiple-note detection unit

The cassette must be removed before the single dispensing unit!




**Dismantling:**

Turn the locking/release levers (1) on the left side of the dispensing unit each 90 degrees counterclockwise.

- Disconnect the plug from the distributor board.
- Remove the dispensing unit.

### Installation

- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").
- Guide the connector cable carefully between the gearwheels and the device wall (see also the section "Double dispensing unit").
- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.
- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position (see also section "Double dispensing unit").
- Connect the cable to the distributor board.
- Install the protection cover.

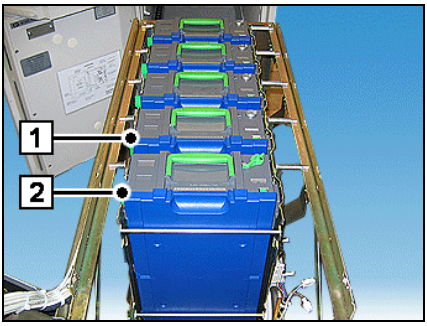
# VCMD

## Front double dispensing unit with multiple-note detection unit

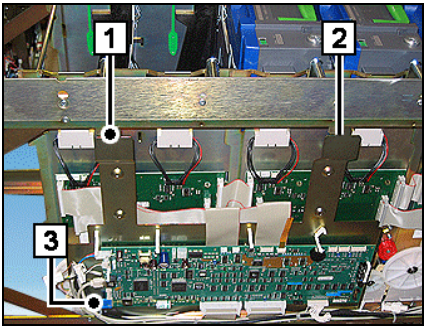
### Dismantling

- Remove the VCMD stacker (see section "Stacker").

Remove the cassettes before you remove the dispensing unit!



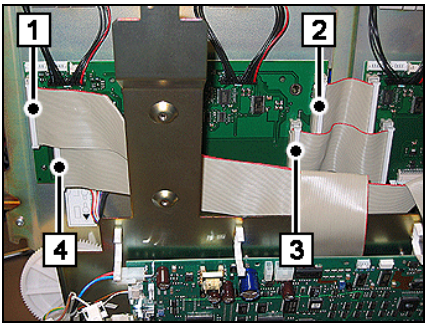

Press the locking levers (1) and (2) to the rear and pull the cash-out cassettes 1 and 2 out of the device.



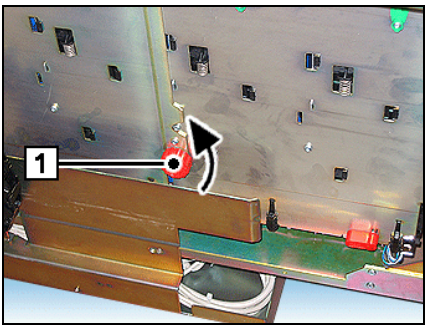

Undo screws (1) and (2).

Pull the mounting of the CMD controller somewhat to the right and swing the mounting down.

Detach connector (3) from the CMD controller.




Disconnect the plugs (1) to (4) from the distributor board of the dispensing unit with multiple-note detection unit.




Rotate the locking knob of the housing (1) counterclockwise by 180°.

Disengage the housing by tilting it back somewhat at the front side (round rod) and remove the housing with the dispensing unit out of of the device.

Illustration is missing yet!

Release the front dispensing unit by turning the locking/release levers (1) and (2) each 90° counterclockwise.

Disconnect the plug (3) from the distributor board.

Remove the dispensing unit (4) in the direction shown by the arrow.

### Installation

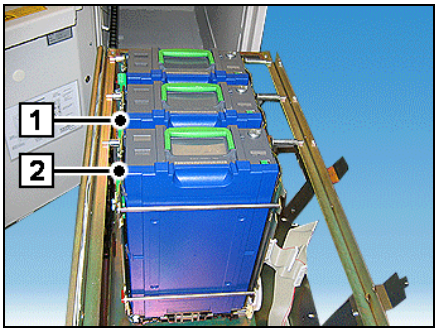
- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").
- Guide the connector cable carefully between the gearwheels and the device wall.
- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.
- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position.
- Connect the cable to the distributor board.

## Rear double dispensing unit without multiple-note detection unit

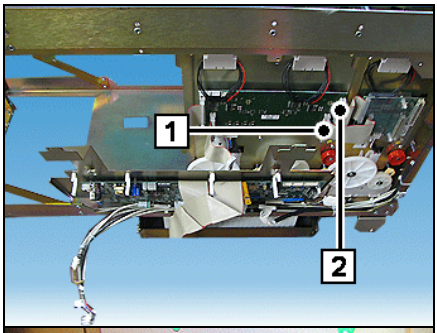
### Dismantling

- Remove the front housing (if this has not already been done).

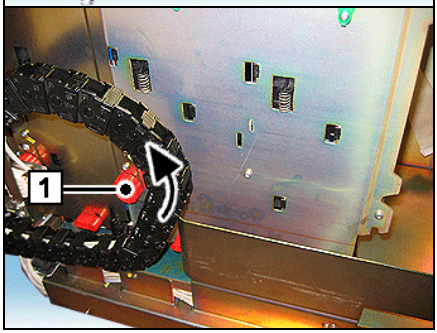
Remove the cassettes before you remove the dispensing unit!




Press the locking levers (1) and (2) to the rear and pull the cash-out cassettes 3 and 4 out of the device.




Detach connectors (1) and (2) from the board.




Rotate the locking knob of the housing (1) counterclockwise by 180° and remove the housing with the dispensing unit from the device.

Illustration is missing yet!

Release the front dispensing unit by turning the locking/release levers (1) and (2) each 90° counterclockwise.

Disconnect the plug (3) from the distributor board.

Remove the dispensing unit (4) in the direction shown by the arrow.

**Installation**

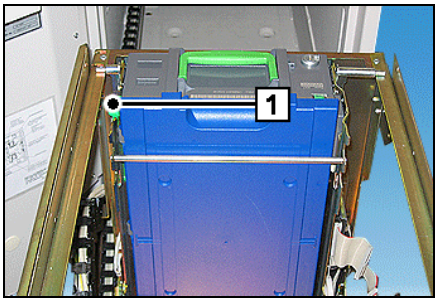
- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").
- Guide the connector cable carefully between the gearwheels and the device wall.
- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.

- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position.
- Connect the cable to the distributor board.

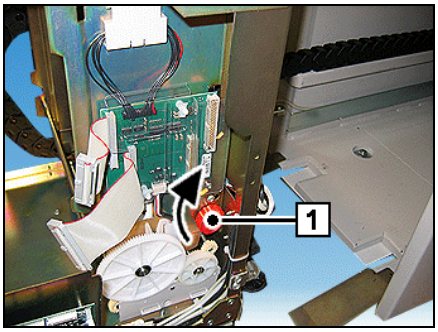
## Single dispensing unit without multiple-note detection unit

- Remove the rear dispensing unit without multiple-note detection unit (see section "Double dispensing unit").

The cassette must be removed before the single dispensing unit!

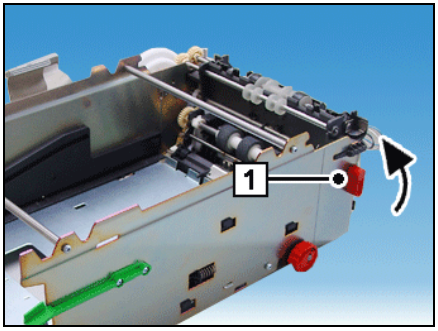



Press the locking lever (1) to the rear and pull the cash-out cassette 5 out of the device.

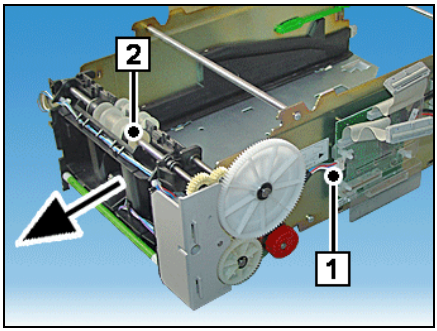



Rotate the locking knob of the extension module (1) clockwise by 180° and remove the extension module from the device.

Rotate the locking knob of the housing (1) counterclockwise by 180° and remove the housing with the extension module from the device.




Turn the locking/release lever (1) in counterclockwise direction.



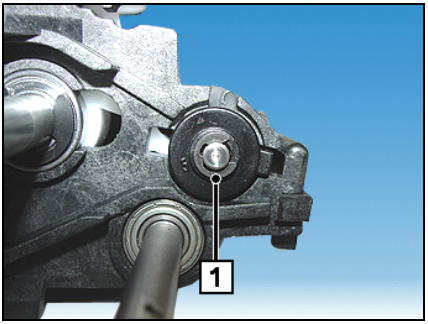

Disconnect the plug (1) from the distributor board.

Remove the dispensing unit (2) in the direction shown by the arrow.

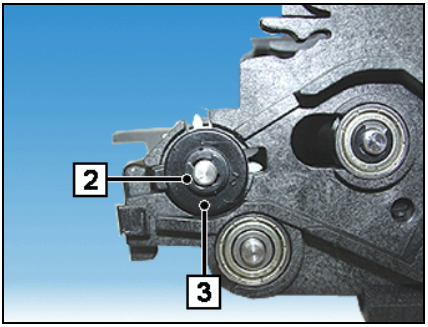
**Installation**

- Adjust the new dispensing unit (see section "Adjustment of the dispensing unit").
- Guide the connector cable carefully between the gearwheels and the device wall.
- Insert the dispensing unit and close the latching mechanism. If it cannot be closed, check the correct seating of the dispensing unit.
- If necessary, turn the gearwheels carefully so that the dispensing unit locks into position.
- Connect the cable to the distributor board.
- Install the protection cover.

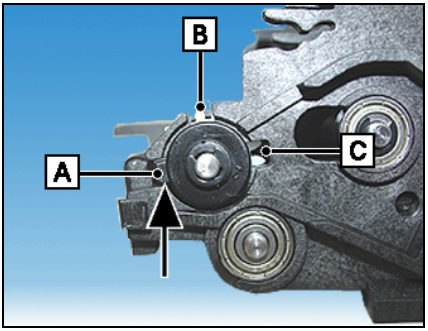
# Adjustment of the dispensing unit




Remove the circlip (1) on the left side and ...




... the circlip (2) on the right side. Pull the two eccentrics (3) out slightly so that they can be rotated.

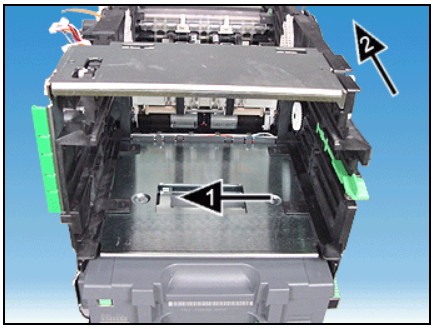



Move the eccentric mark A, B or C to the required setting position. The setting position A is marked with a arrow in the illustration.

You will find further information in the chapter "Function and Integration", section "Adjustment eccentric".

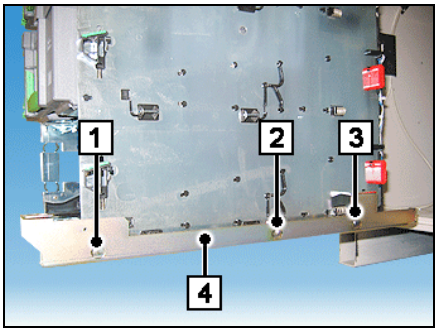
# Quadruple rack

- Remove all cassettes from the CMD-V4 (see chapter "Device overview and operation", section "Removing the cassette").
- Remove all dispensing units (see section "Dispensing units").
- Remove the distributor board (see section "Distributor board").
- Disconnect all cable connections between the basic device and the CMD controller.




Slide the locking/release lever to the left (see arrow 1) until it locks into place.

Push the stacker to the rear (arrow 2) and remove it upwards.



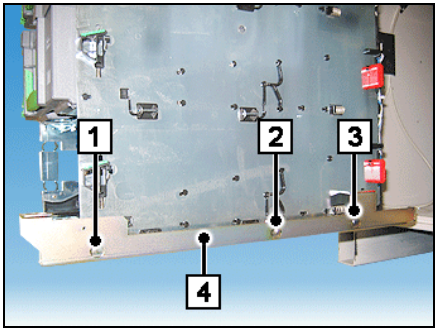

**Protective rails (if present):**

Remove the protective rails on both sides by removing either the two screws (1) and (3) or the three screws (1) to (3) and the protective rail (4).

- Remove the 4-cassette housing from the basic device (see the service manual of the basic device).

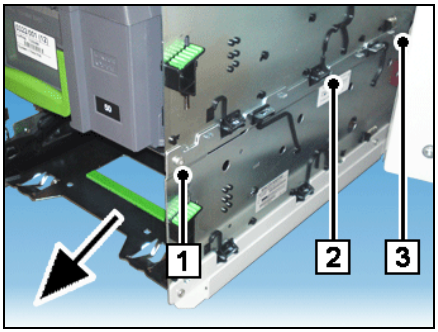
# 1-cassette housing

- Remove the cassette from the 1-cassette housing to be replaced (see chapter "Device overview and operation", section "Removing the cassette").
- Remove the dispensing unit from the corresponding 1-cassette housing (see section "Dispensing units").
- Remove the distributor board (see section "Distributor board").




**Protective rails (if present):**

Remove the protective rails on both sides by removing either the two screws (1) and (3) or the three screws (1) to (3) and the protective rail (4).



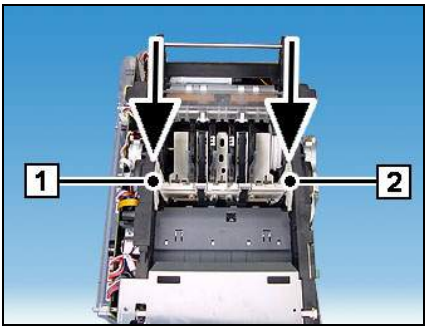

On both sides, remove either the two screws (1) and (3) or the three screws (1) to (3).

Pull the 1-cassette housing in the direction of the arrow and remove to towards the bottom.

Caution: Hold the 1-cassette housing firmly with both hands.

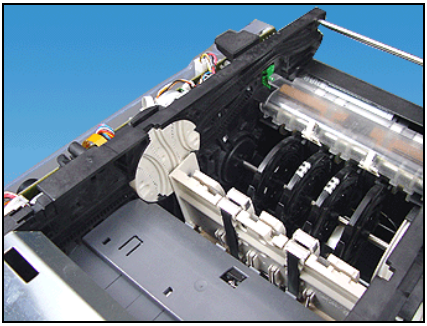
# Clamp

### Dismantling



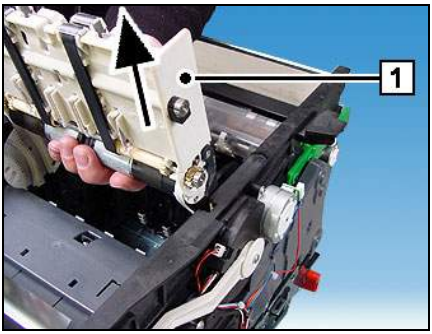

Rotate the two routing disks (1) and (2) in the arrow direction until they stop.

The clamp is closed at the same time and must lock into position.

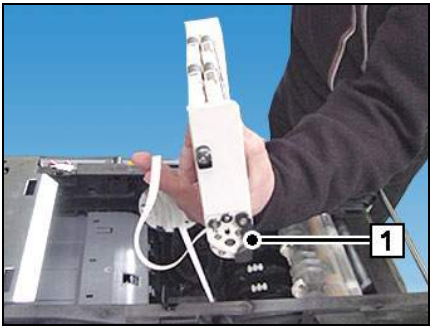


Rotate the routing disks back by approx. 90° (as shown in the image) so that the clamp can be removed upwards.

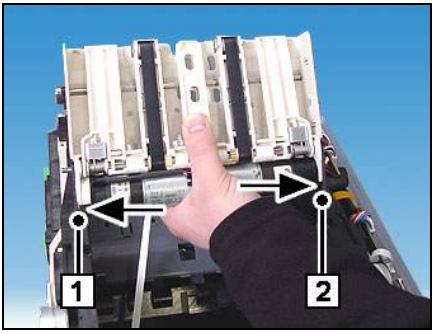
Note that the clamp is not permitted to be opened incorrectly.



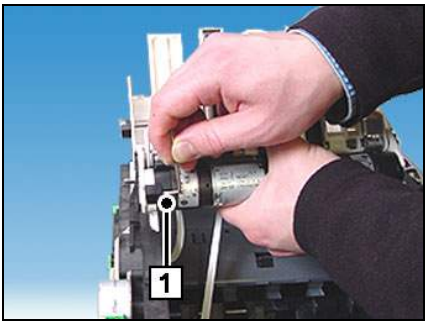

Remove the clamp (1) upwards.



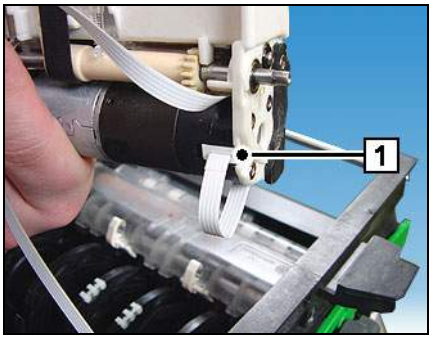

The illustration shows the latch (1) on the left-hand side for opening the clamp.




Open the clamp by pressing the latches (1) and (2) on the left-hand and right-hand sides of the clamp in the direction of the arrows.



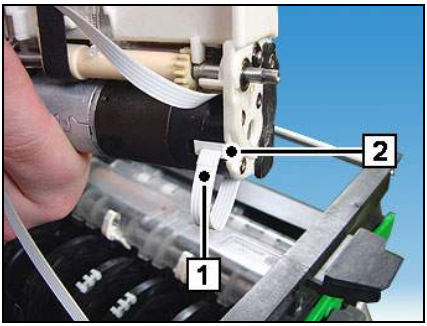

Press the securing pin out (1) and hold the cable firmly.




Disengage the cable lock (1) and pull the cable out.

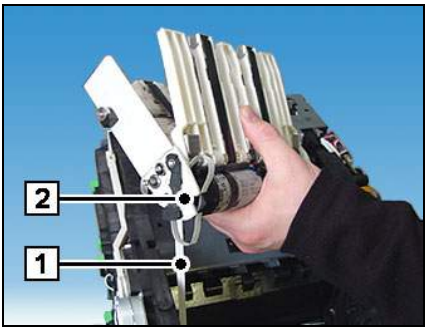
i Caution!
Take care to ensure that the cable does not snap back into the take-up; fasten the cable in place if necessary.

**Installation**



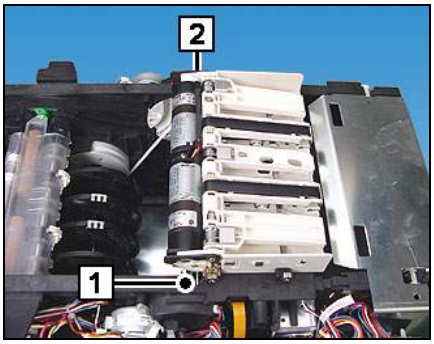

Thread in the cable (1) as shown in the image by moving it slightly back and forth.

Insert the cable (1) into the connector and press in the cable lock (2).



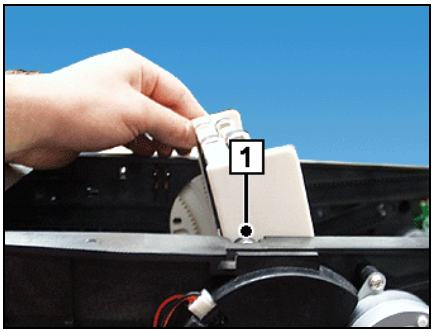

Pull the cable (1) taut.
Insert the securing pin (2) with the clamp open.
(The illustration shows the cable before it has been pulled taut.)

Close the clamp. The two latches, to the right and to the left, must be engaged manually.




Place the clamp, as shown in the illustration, on the stacker. Slide the clamp into the routing disk.
The gearwheels (1) and (2) must be inserted evenly.

i Take care to ensure that the black plastic on the ball bearings is facing downward.
The clamp must be deployed in the closed state.




Check for correct insertion of the clamp by positioning the ball bearing flush with the side wall of the stacker on one side (1). The corresponding ball bearing on the other side wall must also be flush.

- Carefully allow the clamp to glide in. Press this down with caution until it snaps open slightly.

# Maintenance and service

The information required for carrying out troubleshooting and maintenance on the individual components can be found in the various sections in this manual.



When carrying out work on components and sub-assemblies that carry an electrical charge, these pieces of equipment must first be disconnected from the power supply. As a result of system design, it is not sufficient to switch off the device using the power switch on the power distributor. In addition, the rubber plug must also be disconnected from the power distributor.

# Maintenance

## Maintenance intervals

Preventive maintenance is required for the CMD-V4 or VCMD every two years or, at the latest, after 200,000 transactions.

## Performing maintenance



All of the photosensors should be cleaned only in a dry state.

The preventive maintenance is comprised of the following points:

- If available, evaluate error statistics according to error sources and take these into particular account during maintenance (replace components if necessary).
- The quality of the photosensors needs to checked with special test commands after maintenance work has been accomplished. The quality needs to be at least Service Level (Status * 2).
- Remove the cassettes from the CMD-V4 or the VCMD.

- Clean the cassettes. Check all function parts for damage, smooth motion and play.
- Switch off the CMD CMD-V4 or the VCMD.
- Remove the stacker, if necessary with the output transport (horizontal), and the dispensing units.
- Check the correct position of the belts on the guide rollers.
- Clean the SAT and the dispensing units with a brush.
- Clean the photosensors/prisms and the transport rollers in the dispensing units and in the stacker with compressed air.
- If installed, clean the scanning rails of the serial number recognition.

After the maintance, delete the parameters for the pressure sensors and for the photosensors in the CMOS of the CMD controller. After this, an initialization of the CMD controller and a reference value determination for all note type become mandatory (see chapter "Start-up", section "Initiating the CMD-V4 or VCMD").

After that, a trial dispensing process must be carried out error-free via a test program or using the application with at least five notes from each cassette.

- The function test is carried out by the system software. (Refer to the software documentation for further information.)

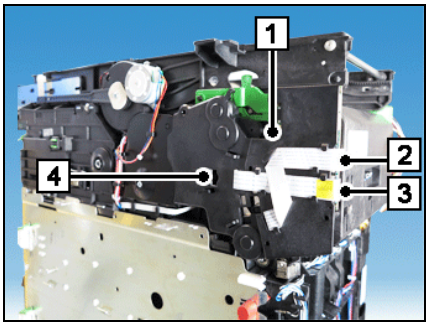
## Stacker

- Visually inspect the stacker for damage and contamination.
- Clean the stacker with a vacuum cleaner, a brush, a dust cloth or with compressed air.
- Clean the photosensors using a brush, compressed air or a dust cloth. All of the photosensors should be cleaned only in a dry state.
- If installed, clean the scanning rails of the serial number recognition.
- Check any routing disks that may be installed for smooth motion.

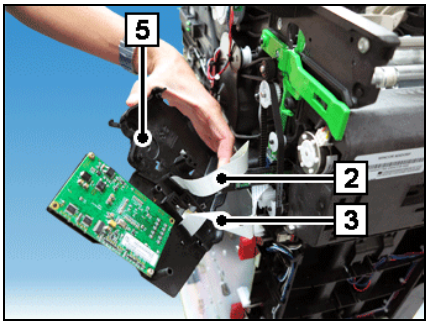
## Serial Number Recognition

Malfunctions could occur, caused by dirty scanning rails of the serial number recognition.

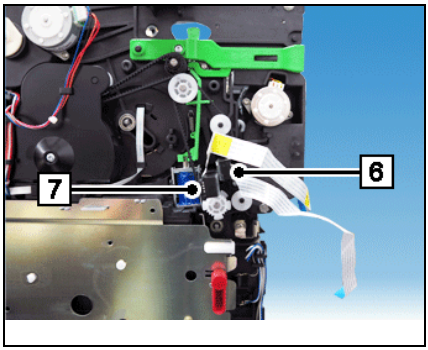
The scanning rails should therefore be cleaned every three months to prevent this.




Disconnect the cables (1) to (3). Remove the cables from the holding devices. Remove screw (4) and carefully pull off ...

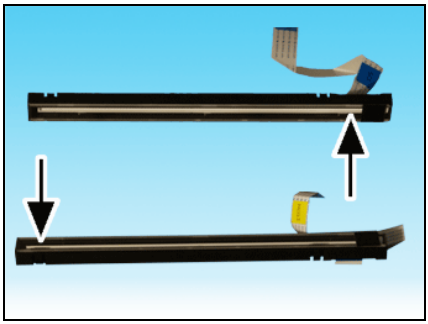



… the cover (5). Pull the two cables (2) and (3) carefully out of the cover.




Pull out the scanning rails (6) and (7). Observe the alignment and the color coding when you do so.

i Correct alignment of the scanning rails is imperative for the function. The scanning rail marked with yellow must be installed on the left and the scanning rail marked with blue on the right.



Remove any dirt, dust, etc. on the two scanning rails (see arrows) using a monitor screen cleaner.

## Output transport

- Remove the output transport (see chapter "Removal/Installation of Components").
- Visually inspect the output transport for damage and contamination.
- Clean the output transport with a vacuum cleaner, a brush, a dust cloth or with compressed air.
- Reinstall the output transport (see chapter "Removal/Installation of Components").

## Transport routes

The rolls and belts inside the transport route are maintenance-free.

## Shutter

- Visually inspect the shutter for damage and contamination.
- Clean the photosensors using a brush, compressed air or a dust cloth. All of the photosensors should be cleaned only in a dry state.
- Release the shutter and check the mechanism for smooth motion.

## Cash-out cassettes

- Visually inspect the cash-out cassettes for damage and contamination.
- Clean the cash-out cassettes with a vacuum cleaner, a brush, a dust cloth or with compressed air.
- Check if the correct note dimension is set (also in the cover).
- Check whether the cassette pressure carriage is in the right position and readjust it if necessary.

## Reject/retract cassette or reject cassette

- Visually inspect the reject/retract cassette or the reject cassette for damage and contamination.
- Clean the reject/retract cassette or the reject cassette with a vacuum cleaner, a brush, a dust cloth or with compressed air.
- Check if the gearwheel fits properly.
- Check for uniform transport roller pressure in the intake of the cassette.

## General

- Check whether the components have been installed correctly.
- Check all cables for safe installation and correct attachment.
- Check the ground connections and replace them if necessary.
- Check the functioning of locks and make contacts and adjust them.

# Approved maintenance materials

You can order the items listed below electronically or from our service partner.

| | |
|---|---|
| Orders: | http://extranet.wincor-nixdorf.com<br>http://www.wincor-nixdorf.com/mediaservice |
| E-mail address for logistics questions: | mailto:serviceslogistics@wincor-nixdorf.com |
| E-mail address for technical questions: | mailto:servicesupport@wincor-nixdorf.com |

| **Commercial Name / Product Name** | **Part number** |
|---|---|
| Screen cleaning agent ECS-260 250 ml | 01750035530 |
| Air duster spray with extension tube | 01770007430 |
| ITS:06377122 / -WM Universal cleaning cloth | 01770005406 |
| Data medium cleaning solution | 03224600952 |
| ITS:06517714 /-WM Flat paintbrush 1 | 01770005440 |

A list of all cleaning and maintenance materials approved by Wincor Nixdorf can be found on the Intranet and Extranet.

i

Please note the manufacturer's specifications on the packaging and on the information sheet included in the packaging.

The product can be damaged or soiled if non-approved materials are used or if the product is handled improperly.

Dispose of the packaging and empty containers in accordance with locally applicable regulations.

# Appendix

## Technical data

### Cash Media Dispenser CMD-V4 without output transport

| | |
|---|---|
| Power supply: | 5.5 A Operation<br>11 A peak (approx. 20 ms) |
| Dimensions: | The overall dimensions depend on the configuration of the CMD-V4. |
| Height | |
| Four cassettes: | 758.0 mm (29.84") |
| Five cassettes: | 895.5 mm (35.26") |
| Six cassettes: | 1033.0 mm (40.67") |
| Width: | 340.0 mm (13.39") |
| Depth with inserted cassettes: | 537.0 mm (21.14") |
| Device weight without cassettes and without single reject: | max. 30 kg (66.14 lb) |
| Note dimensions in mm: | 54 x 85 x 0.08<br>(2.13" x 3.35" x 0.003") to<br>92 x 182 x 0.12<br>(3.62" x 7.17" x 0.005") |
| Maximum number of banknotes per transaction: | 60 |
| Dispensing and transport speed: | 6 - 8 notes / second |
| Number of dispensing units: | 2 to 6 |
| Realized safety functions: | DES security function for the line encryption |

# Vertical Cash Media Dispenser VCMD vertical output

| | |
|---|---|
| **Dimensions:** | The overall dimensions depend on the configuration of the VCMD. |
| Depth | |
| Four cassettes: | 945 mm (37.2") |
| Five cassettes: | 970 mm (38.19") |
| Six cassettes: | 1136 mm (44.72") |
| Width: | 355 mm (13.98") |
| Height with inserted cassettes: | 660 mm (25.98") |
| Note dimensions in mm: | 54 x 85 x 0.08<br>(2.13" x 3.35" x 0.003") to<br>85 x 182 x 0.12<br>(3.35 x 7.17 x 0.0047) |
| Maximum number of banknotes per transaction: | 60 |
| Dispensing and transport speed: | approx. 6 notes / second |
| Number of dispensing units: | 2 to 6 |
| Realized safety functions: | DES security function for the line encryption |

# CMD-V4 stacker

| | | |
|---|---|---|
| Dimensions | | |
| Depth: | 505 | mm (19.88") |
| Width: | 301 | mm (11.85") |
| Height: | 208 | mm (8.19") |
| Weight | | |
| with single reject: | 8.82 | kg (19.44 lb) |
| without single reject: | 8.50 | kg (18.74 lb) |

# Stacker and output transport VCMD

Vertical output in the ProCash 5100

Dimensions

| | | |
|---|---|---|
| Depth: | 660 | mm (25.98") |
| Width: | 355 | mm (13.98") |
| Height: | 220 | mm (8.66") |

Weight: 15.5 kg (34.17 lb)

# Output transport CMD-V4

**Output transport vertical Frontload in the ProCash 2000xe / 2000xe USB / ProCash 8000 and ProCash 2100xe / 2100xe USB / ProCash 8100 / CINEO C2070**

Dimensions

| | | |
|---|---|---|
| Depth: | 401 | mm (15.79") |
| Width: | 239 | mm (9.41") |
| Height: | 180 | mm (7.09") |

Weight: 1.5 kg (3.31 lb)

**Output transport vertical Frontload closed in the ProCash 2000xe / 2000xe USB / ProCash 8000 and ProCash 2100xe / 2100xe USB / ProCash 8100 / CINEO C2070**

Dimensions

| | | |
|---|---|---|
| Depth: | 416 | mm (16.38") |
| Width: | 239 | mm (9.41") |
| Height: | 197 | mm (7.76") |

Weight: 2.0 kg (4.41 lb)

**Output transport vertical Frontload closed in the CINEO C2040**

Dimensions

| | | |
|---|---|---|
| Depth: | 368 | mm (14.49") |
| Width: | 246 | mm (9.69") |
| Height: | 219 | mm (8.62") |

Weight: 2.6 kg (5.74 lb)

**Output transport vertical Rearload in the ProCash 2000xe / 2000xe USB / ProCash 8000 and ProCash 2100xe / 2100xe USB / ProCash 8100 / CINEO C2070**

Dimensions

| | | |
|---|---|---|
| Depth: | 410 | mm (16.14") |
| Width: | 239 | mm (9.41") |
| Height: | 180 | mm (7.09") |

Weight: 1.5 kg (3.31 lb)

**Output transport vertical Rearload closed in the ProCash 2000xe / 2000xe USB / ProCash 8000 and ProCash 2100xe / 2100xe USB / ProCash 8100 / CINEO C2070**

Dimensions

| | | |
|---|---|---|
| Depth: | 420 | mm (16.54") |
| Width: | 239 | mm (9.42") |
| Height: | 190 | mm (7.48") |

Weight: 2.0 kg (4.41 lb)

**Output transport vertical Rearload closed in the CINEO C2040 / CINEO C2080**

Dimensions

| | | |
|---|---|---|
| Depth: | 336 | mm (13.23") |
| Width: | 246 | mm (9.69") |
| Height: | 222 | mm (8.74") |

Weight: 2.6 kg (5.74 lb)

**Output transport horizontal Frontload 101 mm (3.98") in the ProCash 1500xe / 1500xe USB and ProCash 1521xe**

Dimensions

| | | |
|---|---|---|
| Depth: | 130 | mm (5.12") |
| Width: | 200 | mm (7.87") |
| Height: | 50 | mm (1.97") |

Weight: 1.0 kg (2.2 lb)

**Output transport horizontal Frontload 125 mm (4.92") in the ProCash 1500xe USB in the BZ01, ProCash 5000 mini, ProCash 5000 and iScan Tower Line 100**

Dimensions

| | | |
|---|---|---|
| Depth: | 130 | mm (5.12") |
| Width: | 250 | mm (9.84") |
| Height: | 70 | mm (2.76") |

Weight: 0.5 kg (1.1 lb)

**Output transport horizontal Frontload 241 mm (9.49") in the ProCash 2350xe / 2350xe USB / CINEO C2590**

Dimensions

| | | |
|---|---|---|
| Depth: | 250 | mm (9.84") |
| Width: | 200 | mm (7.87") |
| Height: | 50 | mm (1.97") |

Weight: 1.0 kg (2.2 lb)

**Output transport horizontal Rearload 124 mm (4.88") in the ProCash 1500xe / 1500xe USB and ProCash 5000**

Dimensions

| | | |
|---|---|---|
| Depth: | 130 | mm (5.12") |
| Width: | 200 | mm (7.87") |
| Height: | 50 | mm (1.97") |

Weight: 1.0 Kg (2.2 lb)

**Output transport horizontal Rearload 232 mm (9.13") in the ProCash 2050xe / 2050xe USB, ProCash 8050, CINEO C2550, ProCash 2054xe, ProCash 2150xe / 2150xe USB, ProCash 8150, CINEO C2560 and in the ProCash 2250xe / 2250xe USB**

Dimensions

| | | |
|---|---|---|
| Depth: | 345 | mm (13.58") |
| Width: | 227 | mm (8.94") |
| Height: | 57 | mm (2.24") |

Weight: 0.52 kg (1.15 lb)

**Output transport horizontal Rearload 252.6 mm (9.94") in the ProCash 8050, CINEO C2550, ProCash 8150 and CINEO C2560**

Dimensions

| | | |
|---|---|---|
| Depth: | 360 | mm (14.17") |
| Width: | 227 | mm (8.94") |
| Height: | 57 | mm (2.24") |

Weight: 0.58 kg (1.28 lb)

**Output transport horizontal Rearload 287 mm (11.3") in the ProCash 285, ProCash 2054xe and ProCash 2150xe CEN VI / 2150xe USB CEN VI**

Dimensions

| | | |
|---|---|---|
| Depth: | 393 | mm (15.47") |
| Width: | 227 | mm (8.94") |
| Height: | 57 | mm (2.24") |

Weight: 1.0 kg (2.2 lb)

**Output transport 420 mm (16.53") in the Beetle/iScan**

Dimensions

| | | |
|---|---|---|
| Depth: | 420 | mm (16.54") |
| Width: | 310 | mm (12.2") |
| Height: | 260 | mm (10.24") |

Weight: 1.1 kg (2.43 lb)

# Shutter CMD-V4/V5

| | | |
|---|---|---|
| Dimensions | Shutter vertical Rearload and vertical Frontload | |
| Depth: | 310 | mm (12.2") |
| Width: | 150 | mm (5.91") |
| Height: | 100 | mm (3.94") |
| Weight: | 0.5 | kg (1.1 lb) |
| Dimensions | Shutter horizontal Rearload | |
| Depth: | 305 | mm (12.01") |
| Width: | 126 | mm (4.96") |
| Height: | 67 | mm (2.64") |
| Weight: | 0.9 | kg (1.98 lb) |
| Dimensions | Shutter horizontal Frontload | |
| Depth: | 310 | mm (12.2") |
| Width: | 150 | mm (5.91") |
| Height: | 100 | mm (3.94") |
| Weight: | 0.9 | kg (1.98 lb) |
| Dimensions | Shutter with shutter support horizontal Rearload and horizontal Frontload | |
| Depth: | 353 | mm (13.9") |
| Width: | 146 | mm (5.75") |
| Height: | 80 | mm (3.15") |
| Weight: | 1.2 | kg (2.65 lb) |

# CMD controller

| | |
|---|---|
| Processor: | 80C188XL 20 MHz |
| Memory: | 512 Kbyte static RAM |
| | 512 Kbyte Flash-PROM (PUT, bootstrap loader) |
| Interface: | USB 1.1 Full-Speed |
| | V.24 (RS232) |
| Transfer parameters | |
| Line speed | 19.2 / 56 Kbaud |
| | Automatic baud rate detection |
| Data format: | NRZ |
| Parity: | ODD |
| Code width: | 8 bit + parity |
| Stop bits: | 2 |
| Dimensions | |
| Depth: | 430 mm (16.93") |
| Width: | 160 mm (6.3") |
| Height: | 25 mm (0.98") |
| Weight: | 0.42 kg (0.93 lb) |

# CMD Controller II

| | |
|---|---|
| Processor: | 80C188XL 20 MHz |
| Memory: | 512 Kbyte static RAM |
| | 512 Kbyte Flash-PROM (PUT, bootstrap loader) |
| Interface: | USB 2.0 |
| | V.24 (RS232) |
| Transfer parameters | |
| Line speed | 19.2 / 56 Kbaud |
| | Automatic baud rate detection |
| Data format: | NRZ |
| Parity: | ODD |
| Code width: | 8 bit + parity |
| Stop bits: | 2 |
| Dimensions | |
| Depth: | 430 mm (16.93") |
| Width: | 160 mm (6.3") |
| Height: | 25 mm (0.98") |
| Weight: | 0.42 kg (0.93 lb) |

# 4-cassette housing CMD-V4 (without content)

| | |
|---|---|
| Dimensions | |
| Depth: | 450 / 438 mm (17.72"/17.24") |
| Width: | 305 mm (12.01") |
| Height: | 600 mm (23.62") |
| Weight: | 10.9 / 10.8 kg (24.03/23.81 lb) |

# 1-cassette housing CMD-V4 (without content)

| | | |
|---|---|---|
| Dimensions | | |
| Depth: | 450 / 438 | mm (17.72"/17.24") |
| Width: | 305 | mm (12.01") |
| Height: | 162 | mm (6.38") |
| Weight: | 3.34 / 3.2 | kg (7.36/7.05 lb) |

# 2-cassette housing VCMD (without content)

| | | |
|---|---|---|
| Dimensions | | |
| Depth: | 457 | mm (17.99") |
| Width: | 355 | mm (13.98") |
| Height: | 305 | mm (12.01") |
| Weight: | 6.78 | kg (14.95 lb) |

# 1-cassette housing VCMD (without content)

| | | |
|---|---|---|
| Dimensions | | |
| Depth: | 457 | mm (17.99") |
| Width: | 355 | mm (13.98") |
| Height: | 167 | mm (6.57") |
| Weight: | 3.64 | kg (8.02 lb) |

## Double dispensing unit without DDU

Dimensions

| | |
|---|---|
| Depth: | 282 mm (11.1") |
| Width: | 305 mm (12.01") |
| Height: | 200 mm (7.87") |

Weight: 3.3 kg (7.28 lb)

## Double dispensing unit with DDU

Dimensions

| | |
|---|---|
| Depth: | 282 mm (11.1") |
| Width: | 305 mm (12.01") |
| Height: | 200 mm (7.87") |

Weight: 3.34 kg (7.36 lb)

## Single dispensing unit without DDU

Dimensions

| | |
|---|---|
| Depth: | 144 mm (5.67") |
| Width: | 310 mm (12.2") |
| Height: | 141 mm (5.55") |

Weight: 1.76 kg (3.88 lb)

## Single dispensing unit with DDU

Dimensions

| | |
|---|---|
| Depth: | 144 mm (5.67") |
| Width: | 310 mm (12.2") |
| Height: | 141 mm (5.55") |

Weight: 1.8 kg (3.97 lb)

# Cash-out cassettes CMD-V4

Note dimensions

| | |
|---|---|
| Size: | 54 x 85 mm (2.13" x 3.35") to<br>92 x 182 mm (3.62" x 7.17") |
| Strength: | 0.08 mm (0.0031") to 0.12 mm (0.0047") |

| | |
|---|---|
| Stack length: | Bundles with thicknesses of up to 310 mm (12.20") |
| Storage capacity*: | approx. 2500 banknotes |

Dimensions

| | |
|---|---|
| Depth: | 441 mm (17.36") |
| Width: | 264 mm (10.39") |
| Height: | 125 mm (4.92") |

Weight:

| | |
|---|---|
| of an empty cassette: | 3.5 kg (7.72 lb) |
| of a completely filled cassette*/**: | 6.3 kg (13.89 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

# Cash-out cassettes VCMD

Note dimensions

| | |
|---|---|
| Size: | 54 x 105 mm to 82 x 182 mm |
| Strength: | 0.08 mm (0.003") to 0.12 mm (0.005") |

| | |
|---|---|
| Stack length: | Bundles with thicknesses of up to 310 mm (12.20") |
| Storage capacity*: | approx. 2500 banknotes |

Dimensions

| | |
|---|---|
| Depth: | 441 mm (17.36") |
| Width: | 264 mm (10.39") |
| Height: | 125 mm (4.92") |

Weight:

| | |
|---|---|
| of an empty cassette: | 3.7 kg (8.16 lb) |
| of a completely filled cassette*/**: | 6.5 kg (14.33 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

# Reject cassette VCMD

Note dimensions

| | |
|---|---|
| Size: | 54 x 85 mm (2.13" x 3.35") to<br>92 x 182 mm (3.62" x 7.17") |
| Strength: | 0.08 mm (0.003") to 0.12 mm (0.005") |

Storage capacity*

| | |
|---|---|
| Reject compartment: | max. 400 notes |

Dimensions

| | |
|---|---|
| Depth: | 260 mm (10.24") |
| Width: | 253 mm (9.96") |
| Height: | 118 mm (4.65") |

Weight:

| | |
|---|---|
| of an empty cassette: | 1.3 kg (2.87 lb) |
| of a completely filled cassette*/**: | 2 kg (4.41 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

# Reject cassette CMD-V4

Note dimensions

| | |
|---|---|
| Size: | 54 x 85 mm (2.13" x 3.35") to<br>92 x 182 mm (3.62" x 7.17") |
| Strength: | 0.08 mm (0.003") to 0.12 mm (0.005") |

Storage capacity*

| | |
|---|---|
| Reject compartment: | max. 400 notes |

Dimensions

| | |
|---|---|
| Depth: | 260 mm (10.24") |
| Width: | 253 mm (9.96") |
| Height: | 118 mm (4.65") |

Weight:

| | |
|---|---|
| of an empty cassette: | 1.3 kg (2.87 lb) |
| of a completely filled cassette*/**: | 2 kg (4.41 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

# Standard cassette Basic/Midrange

| | |
|---|---|
| Banknote length: | 105 mm - 185 mm (4.13" - 7.28") |
| Banknote height: | 58 mm - 85 mm (2.28" - 3.35") |
| Banknote thickness: | 0.08 mm to 0.12 mm (0.0031" to 0.0047") |
| Stack length: | 300 mm (11.81") |
| Storage capacity*: | More than 2200*** |
| Dimensions (L x W x H): | 411 mm x 260 mm x 128.5 mm (16.18" x 10.24" x 5.06") |
| Weight: | |
| of an empty cassette: | 3.4 kg (7.5 lb) |
| of a completely filled cassette*/**: | 6.5 kg (14.33 lb) |

# Compact cassette Basic/Midrange

| | |
|---|---|
| Banknote length: | 105 mm - 185 mm (4.13" - 7.28") |
| Banknote height: | 58 mm - 85 mm (2.28" - 3.35") |
| Banknote thickness: | 0.08 mm - 0.12 mm (0.0031" to 0.0047") |
| Stack length: | 200 mm (7.87") |
| Storage capacity*: | More than 1000*** |
| Dimensions (L x W x H): | 313 mm x 260 mm x 128.5 mm (12.32" x 10.24" x 5.06") |
| Weight: | |
| of an empty cassette: | 2.55 kg (5.62 lb) |
| of a completely filled cassette*/**: | 3.96 kg (8.73 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

*** Refers to brand new banknotes.

# Standard cassette High End

| | |
|---|---|
| Banknote length: | 105 mm - 185 mm (4.13" - 7.28") |
| Banknote height: | 58 mm - 85 mm (2.28" - 3.35") |
| Banknote thickness: | 0.08 mm to 0.12 mm (0.0031" to 0.0047") |
| Stack length: | 240 mm (9.44") |
| Storage capacity*: | More than 1700*** |
| Dimensions (L x W x H): | 411 mm x 260 mm x 128.5 mm (16.18" x 10.24" x 5.06") |
| Weight: | |
| of an empty cassette: | 4.4 kg (9.7 lb) |
| of a completely filled cassette*/**: | 8.6 kg (18.96 lb) |

# Compact cassette High End

| | |
|---|---|
| Banknote length: | 105 mm - 185 mm (4.13" - 7.28") |
| Banknote height: | 58 mm - 85 mm (2.28" - 3.35") |
| Banknote thickness: | 0.08 mm to 0.12 mm (0.0031" to 0.0047") |
| Stack length: | 140 mm (5.51") |
| Storage capacity*: | More than 800*** |
| Dimensions (L x W x H): | 313 mm x 260 mm x 128.5 mm (12.32" x 10.24" x 5.06") |
| Weight: | |
| of an empty cassette: | 3.9 kg (8.6 lb) |
| of a completely filled cassette*/**: | 5.3 kg (11.68 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

*** Refers to brand new banknotes.

# Reject / retract cassette

| | |
|---|---|
| Banknote length: | 85 - 182 mm (3.35" to 7.17") |
| Banknote height: | 54 - 92 mm (2.13" to 3.62") |
| Banknote thickness: | 0.08 - 0.12 mm (0.0031" to 0.0047") |
| Storage capacity* | |
| Reject compartment: | 400 banknotes |
| Retract box: | 100 banknotes |
| Dimensions (L x W x H): | 260 x 253 x 118 mm (10.24" x 9.96" x 4.65") |
| Weight: | |
| of an empty cassette: | 1.5 kg (3.3 lb) |
| of a completely filled cassette*/**: | 2.2 kg (4.85 lb) |

* The storage capacity and weight of a completely filled cassette depends on the type, quality, nature and state of the banknotes.

** The weight of a completely filled cassette was ascertained using banknotes with a denomination of 50 euros.

# Environmental protection

## Environmentally and recycling-friendly product development

This product has been designed according to our corporate guideline 'Environmentally and recycling-friendly product development'.

This means that crucial criteria such as long life, choice of material and its labeling, emissions, packaging, ease of disassembly and recyclability have been taken into account. This saves resources and relieves the strain on the environment.

## Saving energy

Please switch on devices that need not be constantly running only when they are actually needed. They should also be turned off when they are not needed for longer periods of time.

## Disposing of used consumables

Please dispose of printer consumables, batteries and cleaning and maintenance materials according to national regulations (where relevant complying with vendor specifications).

## Labels on plastic case parts

Please do not stick any labels on plastic case parts since that would make recycling more difficult.

# Returning, recycling and disposing of used units and consumables



Details regarding the return and recycling of used units and consumables can be obtained from your local branch office.

# Pin assignments

## Power supply unit connector (supply voltage)

**Connector: 2-pole AMP, pins 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | P24 V | Supply voltage +24 V |
| 2 | GNDNT | Ground for +24 V |

## Safety switch

**Connector: 3-pin DUBOX, single-row 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | RELAY | Safety cutoff relay |
| 2 | GND | Ground |
| 3 | NC | not used |

## Base modul

| Elements | |
|---|---|
| HS2 | Lift magnet single reject deflector |
| SM6 | Reject / retract cassette stepper motor chute selection |
| DPS 4 | Photo sensor to chute selection |
| S1 | Microswitch retract/reject cassette available |
| PS 1 | Banknote paths photosensor (reflective photosensor) |
| PS 21 | Panknote paths photosensor (controlled) |

**Connector: 20-ping DUBOX, 2-row 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | SM6PH1P | Stepper motor SM6 phase 1, plus connection |
| 2 | SM6PH1M | Stepper motor SM6 phase 1, minus connection |

| Pin No. | Signal name | ERROR |
|---|---|---|
| 3 | SM6PH2P | Stepper motor SM6 phase 2, plus connection |
| 4 | SM6PH2M | Stepper motor SM6 phase 2, minus connection |
| 5 | H2P | Single reject switch, plus connection |
| 6 | H2M | Single reject switch, minus connection |
| 7 | P12V | DPS4 photosensor, power source |
| 8 | GND | DPS4 photosensor, ground |
| 9 | GL4 | DPS4 photosensor, output signal |
| 10 | IGSAMOUT | DPS4 photosensor, transmit current plus |
| 11 | S1 | Microswitch retract/reject cassette available, signal |
| 12 | GND | Microswitch retract/reject cassette available, ground |
| 13 | VCCL | PS21 receiver, collector |
| 14 | LAGT212235 | PS21 receiver, emitter |
| 15 | VCCL | PS1 receiver, collector |
| 16 | LAGTL1 | PS1 receiver, emitter (reflective photosensor) |
| 17 | IQLSMIN | Transmit current photosensors plus LED PS 1 (reflective) |
| 18 | IXGMOUT | Transmit current photosensors minus |
| 19 | IQLS | Transmit current photosensors plus sending LED PS21 |
| 20 | IQLS56VN | Transmit current photosensors minus |

# Main motor M1

| **Elements** | |
|---|---|
| DCM1 | Main motor |

**Connector: 2-pole AMP, socket 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | M1P | Main motor, Plus connection |
| 2 | M1M | Main motor, Minus connection |

# Stacker

| **Elements** | |
|---|---|
| DCM3 | Slewing motor for stacking compartment |
| DPS1/DPS3 | Photosensors for stacking compartment position |
| DCM5 | Stepper motor for note bundle reject deflector |
| DPS8/DPS9 | Photosensors for bundle reject deflector |
| PS29, PS22 | Banknote path photosensors (regulated) |
| PS18, PS19 | PS29 TOPLED (caution, d. c. light!) |
| T1 | Timing disk DCM1 |

**Connector: 34-ping DUBOX, 2-row 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | SM5PH1P | Stepper motor DCM5 phase 1, plus connection |
| 2 | SM5PH1M | Stepper motor DCM5 phase 1, minus connection |
| 3 | SM5PH2P | Stepper motor DCM5 phase 2, plus connection |
| 4 | SM5PH2M | Stepper motor DCM5 phase 2, minus connection |
| 5 | M3P | DC motor DCM3, Plus connection |
| 6 | GNDL | DC motor DCM3, Minus connection |
| 7 | P12V | Voltage supply DPS1/DPS3 and DPS8/DPS9 |
| 8 | GND | Connection to ground DPS1/DP3 and DPS8/DPS9 |
| 9 | GL1N | Output signal photosensor DPS1, dispensing position |
| 10 | GL3N | Output signal photosensor DPS3, cash-out position |
| 11 | GL8N | Output signal photosensor DPS8, transport position |
| 12 | GL9N | Output signal photosensor DPS9, reject position |
| 13 | IGSAMIN | Transmit current Plus (DPS1/3 and DPS8/9) |
| 14 | IGSAMOUT | Transmit current Minus (DPS1/3 and DPS8/9) |
| 15 | P12V | PS29 receiver, collector |
| 16 | LAGT2629 | PS29 receiver, emitter |
| 17 | VCCL | PS22 receiver, collector |
| 18 | LAGT212235 | PS22 receiver, emitter |
| 19 | VCCL | PS18 receiver, collector |
| 20 | LAGT18 | PS18 receiver, emitter |
| 21 | VCCL | PS19 receiver, collector |
| 22 | LAGT19 | PS19 receiver, emitter |
| 23 | IXGMOUT | Transmit current photosensors Plus (PS29, TOPLED) |
| 24 | IQLS | Transmit current photosensors minus |
| 25 | IQLS | Transmit current photosensors Plus (PS22, |

| Pin No. | Signal name | ERROR |
|---|---|---|
| | | PS18, PS19) |
| 26 | IQLS34VN | Transmit current photosensors minus |
| 27 | | Free |
| 28 | VCC | Main motor timing disk, voltage supply |
| 29 | T1OUT | Main motor timing disk, output signal |
| 30 | GND | Main motor timing disk, ground |
| 31 | | Free |
| 32 | | Free |
| 33 | | Free |
| 34 | | free |

# Frontload module

| Elements | |
|---|---|
| PS33, PS35 | Banknote path photosensors (regulated) |
| PS 26 | PS26 TOPLED (caution, d. c. light!) |

**Connector: 10-ping DUBOX, 2-row 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | P12V | PS26 receiver, collector |
| 2 | LAGT2629 | PS26 receiver, emitter - caution, d. c. light! |
| 3 | VCCL | PS35 receiver, collector |
| 4 | LAGT212235 | PS35 receiver, emitter |
| 5 | VCCL | PS33 receiver, collector |
| 6 | LAGT33 | PS33 receiver, emitter |
| 7 | IXGMOUT | Transmit current photosensors plus (PS26) |
| 8 | IQLS | Transmit current photosensors minus |
| 9 | IQLSSH | Transmit current photosensors plus (PS33, PS35) |
| 10 | GND | Transmit current photosensors minus |

# Dispensing unit 1 (Module positions 1 and 2)

| **Elements** | |
|---|---|
| CL1, CL2 | Electromagnetic clutch (dispensing unit - position 1, 2) |
| HR1,HR2 | Lift magnet retaining spring (dispensing unit - position 1, 2) |
| PSD1/2 | Photosensor dispensing sensor, controlled (dispensing unit - position 1, 2) |
| PSE1/2 | Photosensor cassette empty sensor (dispensing unit - position 1, 2) |
| LANDR1/2 | Note pressure measurement (dispensing unit - position 1, 2) |

**Connector: 24-ping DUBOX, 2-row 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | P24V | Electromagnetic clutch, Plus connection, dispensing unit - position 1 |
| 2 | EK1 | Electromagnetic clutch, Minus connection, dispensing unit - position 1 |
| 3 | P24V | Lift magnet retaining spring, Plus connection (dispensing unit - position 1) |
| 4 | HR1 | Lift magnet retaining spring, Minus connection (dispensing unit - position 1) |
| 5 | P24V | Electromagnetic clutch, Plus connection (dispensing unit - position 2) |
| 6 | EK2 | Electromagnetic clutch, Minus connection (dispensing unit - position 2) |
| 7 | P24V | Lift magnet retaining spring, Plus connection (dispensing unit - position 2) |
| 8 | HR2 | Lift magnet retaining spring, Minus connection (dispensing unit - position 2) |
| 9 | P12V | + 12 V for pressure measurement (dispensing unit - Position 1) |
| 10 | P12V | + 12 V for pressure measurement (dispensing unit - Position 2) |
| 11 | GND | Ground for pressure measurement (dispensing unit - Position 1) |
| 12 | GND | Ground for pressure measurement (dispensing unit - Position 2) |

| Pin No. | Signal name | ERROR |
|---|---|---|
| 13 | UANDR1 | Signal of pressure measurement (dispensing unit - Position 1) |
| 14 | UANDR2 | Signal of pressure measurement (dispensing unit - Position 2) |
| 15 | IAN12IN | Transmit current for pressure measurement (reflective photosensor) |
| 16 | IAN12OUT | Transmit current for pressure measurement (reflective photosensor) |
| 17 | VCCL | All receivers, collector |
| 18 | LAM135 | PSD1 receiver, emitter |
| 19 | LKL135 | PSE1 receiver, emitter |
| 20 | LAM246 | PSD2 receiver, emitter |
| 21 | LKL246 | PSE2 receiver, emitter |
| 22 | NC | not used |
| 23 | IQLS12VN | Transmit current photosensors plus (PSD1, 2; PSE1, 2) |
| 24 | IQLS12 | Transmit current photosensors minus (PSD1, 2; PSE1, 2) |

# Cassette connector dispensing unit 1

**(Module positions 1 and 2)**

| **Elements** | |
|---|---|
| | serial EEPROM |
| | Stepper motor |

**Connector: 20-ping DUBOX, 2-row 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | EEDAT | serial EEPROMs: data conductor for cassette 1 |
| 2 | EEDAT | serial EEPROMs: data conductor for cassette 2 |
| 3 | EETAKT | serial EEPROMs: clock line for cassette 1 |
| 4 | EETAKT | serial EEPROMs: clock line for cassette 2 |
| 5 | EECSK1 | serial EEPROM cassette 1: select |
| 6 | EECSK2 | serial EEPROM cassette 2: select |
| 7 | GND | Ground (EEPROM, measuring electronics) for cassette 1 |
| 8 | GND | Ground (EEPROM, measuring electronics) for cassette 2 |
| 9 | VCCSWK1 | Switched power supply, cassette 1 |
| 10 | VCCSWK2 | Switched power supply, cassette 2 |
| 11 | NC | not used |
| 12 | NC | not used |
| 13 | SMK1P1P | Stepper motor cassette 1, Phase 1 Plus |
| 14 | SMK2P1P | Stepper motor cassette 2, Phase 1 Plus |
| 15 | SMK1P1M | Stepper motor cassette 1, Phase 1 Minus |
| 16 | SMK2P1M | Stepper motor cassette 2, Phase 1 Minus |
| 17 | SMK1P2P | Stepper motor cassette 1, Phase 2 Plus |
| 18 | SMK2P2P | Stepper motor cassette 2, Phase 2 Plus |
| 19 | SMK1P2M | Stepper motor cassette 1, Phase 2 Minus |
| 20 | SMK2P2M | Stepper motor cassette 2, Phase 2 Minus |

# Dispensing unit 2

### Module positions 3 and 4

| **Elements** | |
|---|---|
| CL3, CL4 | Electromagnetic clutch (dispensing unit - position 3, 4) |
| HR3, HR4 | Lift magnet retaining spring (dispensing unit - position 3, 4) |
| PSD 3/4 | Photosensor dispensing sensor, controlled (dispensing unit - position 3, 4) |
| PSE 3/4 | Photosensor cassette empty sensor (dispensing unit - position 3, 4) |
| LANDR3/4 | Note pressure measurement (dispensing unit - position 3, 4) |

### Connector: 24-ping DUBOX, 2-row 90°

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | P24V | Electromagnetic clutch, Plus connection (dispensing unit - position 3) |
| 2 | EK3 | Electromagnetic clutch, Minus connection (dispensing unit - position 3) |
| 3 | P24V | Lift magnet retaining spring, Plus connection (dispensing unit - position 3) |
| 4 | HR3 | Electromagnetic clutch, Minus connection (dispensing unit - position 3) |
| 5 | P24V | Electromagnetic clutch, Plus connection (dispensing unit - position 4) |
| 6 | EK4 | Electromagnetic clutch, Minus connection (dispensing unit - position 4) |
| 7 | P24V | Lift magnet retaining spring, Plus connection (dispensing unit - position 4) |
| 8 | HR4 | Electromagnetic clutch, Minus connection (dispensing unit - position 4) |
| 9 | P12V | + 12 V for pressure measurement (dispensing unit - Position 3) |
| 10 | P12V | + 12 V for pressure measurement (dispensing unit - Position 4) |

| Pin No. | Signal name | ERROR |
|---|---|---|
| 11 | GND | Ground for pressure measurement (dispensing unit - Position 3) |
| 12 | GND | Ground for pressure measurement (dispensing unit - Position 4) |
| 13 | UANDR3 | Signal of pressure measurement (dispensing unit - Position 3) |
| 14 | UANDR4 | Signal of pressure measurement (dispensing unit - Position 4) |
| 15 | IAN34IN | Transmit current for pressure measurement (reflective photosensor) |
| 16 | IAN34OUT | Transmit current for pressure measurement (reflective photosensor) |
| 17 | VCCL | PSD3 receiver, collector |
| 18 | LAM135 | PSD3 receiver, emitter |
| 19 | LKL135 | PSE3 receiver, emitter |
| 20 | LAM246 | PSD4 receiver, emitter |
| 21 | LKL246 | PSE4 receiver, emitter |
| 22 | NC | not used |
| 23 | IQLS34VN | Transmit current photosensors plus (PSD3, 4; PSE3, 4) |
| 24 | IQLS34 | Transmit current photosensors minus (PSD3, 4; PSE3, 4) |

# Cassette connector dispensing unit 2

**(Module positions 3 and 4)**

| **Elements** | |
|---|---|
| | serial EEPROM |
| | Stepper motor |

**Connector: 20-ping DUBOX, 2-row 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | EEDAT | serial EEPROMs: data conductor for cassette 3 |
| 2 | EEDAT | serial EEPROMs: data conductor for cassette 4 |
| 3 | EETAKT | serial EEPROMs: clock line for cassette 3 |
| 4 | EETAKT | serial EEPROMs: clock line for cassette 4 |
| 5 | EECSK3 | serial EEPROM cassette 3: select |
| 6 | EECSK4 | serial EEPROM cassette 4: select |
| 7 | GND | Ground (EEPROM, measuring electronics) for cassette 3 |
| 8 | GND | Ground (EEPROM, measuring electronics) for cassette 4 |
| 9 | VCCSWK3 | Switched power supply, cassette 3 |
| 10 | VCCSWK4 | Switched power supply, cassette 4 |
| 11 | NC | not used |
| 12 | NC | not used |
| 13 | SMK3P1P | Stepper motor cassette 3, Phase 1 Plus |
| 14 | SMK4P1P | Stepper motor cassette 4, Phase 1 Plus |
| 15 | SMK3P1M | Stepper motor cassette 3, Phase 1 Minus |
| 16 | SMK4P1M | Stepper motor cassette 4, Phase 1 Minus |
| 17 | SMK3P2P | Stepper motor cassette 3, Phase 2 Plus |
| 18 | SMK4P2P | Stepper motor cassette 4, Phase 2 Plus |
| 19 | SMK3P2M | Stepper motor cassette 3, Phase 2 Minus |
| 20 | SMK4P2M | Stepper motor cassette 4, Phase 2 Minus |

# Extension connector for dispensing unit 3

**(Module position 5 and 6)**

An extension board is used for dispensing unit 3 (positions 5 and 6) that contains the power driver, power sources, level converter, etc. The logical signal (TTL level or analog level) are guided through the extension connector. A list appears below of the elements that are operated by the extension board.

| **Elements** | |
|---|---|
| CL5, CL6 | Electromagnetic clutch (dispensing unit - position 5, 6) |
| HR5, HR6 | Lift magnet retaining spring (dispensing unit - position 5, 6) |
| PSD5/6 | Photosensor dispensing sensor, controlled (dispensing unit - position 5, 6) |
| PSE5/6 | Photosensor cassette empty sensor (dispensing unit - position 5, 6) |
| EEPR5/6 | serial EEPROM cassette 5, 6 |
| SMK5/6 | Stepper motor cassette 5, 6 |
| LANDR5/6 | Note pressure measurement (dispensing unit - position 5, 6) |

**Plug: 40-pole, Berg pins, LOW profiles, 2-row 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | GNDL | Ground for load currents |
| 2 | MATAKT | Magnet pulsing |
| 3 | GNDL | Ground for load currents |
| 4 | GNDL | Ground for load currents |
| 5 | P24V | + 24 V for load currents |
| 6 | P24V | + 24 V for load currents |
| 7 | V5 | Selection signal dispensing unit - position 5 |
| 8 | V6 | Selection signal dispensing unit - position 6 |
| 9 | IOEK | Electromagnetic clutch |
| 10 | IOHR | Lift magnet retaining spring |
| 11 | GND | Ground |
| 12 | GND | Ground |
| 13 | P12V | Voltage supply for the pressure measurement dispensing unit |
| 14 | UANDR5 | Measurement signal, cassette 5 |

| Pin No. | Signal name | ERROR |
|---|---|---|
| 15 | UANDR6 | Measurement signal, cassette 6 |
| 16 | IQLS56VN | Transmit current photosensors supply voltage |
| 17 | ULANDR | Analog voltage for power source for pressure measurement |
| 18 | LISEL3N | Analog voltage for path transmit current photosensors |
| 19 | GND | Ground |
| 20 | VCC | Power supply +5 V |
| 21 | LAM135 | PSD5 receiver, emitter |
| 22 | LKL135 | PSE5 receiver, emitter |
| 23 | LAM246 | PSD6 receiver, emitter |
| 24 | LKL246 | PSE6 receiver, emitter |
| 25 | GND | Ground |
| 26 | EEDAT | serial EEPROMs: data conductor |
| 27 | EETAKT | serial EEPROMs: clock line |
| 28 | EECSK5 | serial EEPROM cassette 5: select |
| 29 | EECSK6 | serial EEPROM cassette 6: select |
| 30 | GND | Ground |
| 31 | SMDAT0 | Stepper motor control signal, Bit 0 |
| 32 | SMDAT1 | Stepper motor control signal, Bit 1 |
| 33 | SMDAT2 | Stepper motor control signal, Bit 2 |
| 34 | SMDAT3 | Stepper motor control signal, Bit 3 |
| 35 | SMDAT4 | Stepper motor control signal, Bit 4 |
| 36 | SMDAT5 | Stepper motor control signal, Bit 5 |
| 37 | SMDAT6 | Stepper motor control signal, Bit 6 |
| 38 | IOE | I/O enable |
| 39 | ENSMK5N | Clock signal for SM latch cassette 5 |
| 40 | ENSMK6N | Clock signal for SM latch cassette 6 |

# Connector plug for shutter (incl. Z module)

| **Elements** | |
|---|---|
| DCM7, DCM8 | Shutter motor, DC |
| DPS10/11, DPS12/13 | Photosensors for shutter position |
| DCM4 | Stepper motor for Z module drive |
| PS27 / PS28 | Banknote path monitoring in the Z module |

**Connector: 15-pole DSUB, pins, 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | ZTAKT | Pulse for the stepper motor of the Z module |
| 2 | ZRICHTG | Correct for stepper motor of the Z module drive |
| 3 | RMSH1N | Sensor shutter position Bit 0 |
| 4 | GND | Ground |
| 5 | SHMOTEN | Shutter motor M7 or M8 ON |
| 6 | ZEIN | Stepper motor of the Z module ON |
| 7 | LSH27 | PS27 signal |
| 8 | NC | not used |
| 9 | IQLSSH | Transmit current photosensors |
| 10 | P24V | Power supply +24 V |
| 11 | RMSH2N | Sensor shutter position Bit 1 |
| 12 | SHMOTRN | Shutter motor M7 or M8 direction |
| 13 | P12V | Power supply +12 V |
| 14 | GNDL | Ground for load currents |
| 15 | LSH28 | PS28 signal |

The two sensors RMSH1N and RMSH2N reproduce the shutter position in coded form. In order to withdraw the bank notes, the shutter is first moved into the completely "OPEN" position.

After the transport of the bank notes into the output position, the shutter is moved back into the 'CLOSED' position to the extent required to reach the crossover point from L L to H H. (L = 0 V - H = + 12 V)

| RMSH2N | RMSH1N | ERROR |
|---|---|---|
| H | L | Shutter flap is 'CLOSED' |
| L | L | Shutter flap between 'CLOSED' and banknote presentation |
| H | H | Shutter flap between banknote presentation and 'OPEN' |
| L | H | Shutter flap is 'OPEN' |

# Connector plug for multiple-note detection unit

| **Elements** | |
|---|---|
| Optical thickness measurement | |
| DMLED1, DMLED2 | Transmission diodes |
| DMPHT1, DMPHT2 | Receiver transistors |
| Mechanical thickness measurement | |
| | Reflective photosensors 1, 2 |

**Connector: 10-pole DUBOX, pins, 2-row 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | DMLED1IN | Transmit current for the IR LED of reflective photosensor 1 |
| 2 | DMLED1OUT | Transmit current for the IR LED of reflective photosensor 1 |
| 3 | DMLED2IN | Transmit current for the IR LED of reflective photosensor 2 |
| 4 | DMLED2OUT | Transmit current for the IR LED of reflective photosensor 2 |
| 5 | P12V | Power supply +12 V |
| 6 | DMPHT1 | Amplified signal of photo transistor 1 of reflective photosensor 1 |
| 7 | N12V | Power supply -12 V |
| 8 | DMPHT2 | Amplified signal of photo transistor 2 of reflective photosensor 2 |
| 9 | GND | Ground |
| 10 | DMCOD | Coding of optical/mechanical thickness measurement: GND = optical / open = mechanical |

# Door switch connection

| **Elements** | |
|---|---|
| Magnetic switch | Door switch for safe door |
| Jumper | Reports that the magnetic switch is connected |

**Connector: 4-pole DUBOX, single-row 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | TUERM | Magnetic switch / Door switch for safe door |
| 2 | GND | Ground for the magnetic switch |
| 3 | TUERB | Jumper, reports the wiring of the door switch |
| 4 | GND | Ground for the jumper |

## Battery connector

| **Elements** | |
|---|---|
| Lithium battery | TL5242/W (Part. no. 92675.07.1.39), 3.6 V / 1.9 Ah |

**Connector: 4-pole Berg connector, single-row 90°**

| **Pin No.** | **Signal name** | **ERROR** |
|---|---|---|
| 1 | VBATT | Plus pole (battery) |
| 2 | NC | not used |
| 3 | NC | not used |
| 4 | GND | Minus pole (battery) |

# RS232C connection

The controlling system unit (PC) is connected via this RS232C interface.

**Connector: 9-pole Sub-D, pins 90°**

| Pin No. | Signal name | ERROR |
|---|---|---|
| 1 | DCD1 | Carrier Detect |
| 2 | RXD1 | Receive Data (IN) |
| 3 | TXD1 | Transmit Data (OUT) |
| 4 | DTR1 | Data Terminal Ready |
| 5 | GND | Ground |
| 6 | DSR1 | Data Set Ready |
| 7 | RTS | Request to Send (OUT) |
| 8 | CTS | Ready for Sending (IN) |
| 9 | RI | Ring Indicator |

The 9-pole Sub-D connector is occupied in accordance with standard. The input CTS (Pin 8) is highly resistively connected with + 12 V in order to receive a defined signal when the input is open.

# CMD controller

Connector on the left side of the controller:

### X1 Mechanical thickness sensor

Dubox connector, 8-pole
(Series = 2466407537, Son = 2466410537)

| Contact | Designation |
|---|---|
| 1 | + 5 V |
| 2 | GND |
| 3 | Measuring input for the 1nd analog hall sensor |
| 4 | GND |
| 5 | + 5 V |
| 6 | GND |
| 7 | Measuring input for the 2nd analog hall sensor |
| 8 | GND |

### X2 Shutter

JST pin connector Model PHD, 2 x 10-pole, S20B-PHDSS (90°)
(Series = A3C40014865, Son = A3C40014864)

| Contact | Designation |
|---|---|
| 1 | + 24 V |
| 2 | Load – GND |
| 3 | + 12 V |
| 4 | GND |
| 5 | Release of the energizing of SM7 (24 V level) / Phase + (open) from M7 |
| 6 | Direction of SM7 (24 V level) / Phase - (closed) from M7 |
| 7 | Switched input from DPS10 |
| 8 | Switched input from DPS11 |
| 9 | Switched input from DPS12 (Reserve) |
| 10 | Measuring input for phototransistor from PS27 or PS26 (Removal - Detection) (PSR6) |
| 11 | Measuring input for phototransistor from PS28 or PS29 (Removal - Detection) (PSR7) |

| Contact | Designation |
|---|---|
| 12 | + current for transmission diodes from PS27, PS28 or PS26, PS29 (LSISH) |
| 13 | Shutter 1 switched input |
| 14 | GND |
| 15 | Shutter 2 switched input |
| 16 | GND |
| 17 | Shutter 3 switched input |
| 18 | GND |
| 19 | Shutter 4 switched input |
| 20 | GND |

**Jumper coding**

| Pin 19 | Pin 17 | Pin 15 | Pin 13 | |
|---|---|---|---|---|
| Shutter4 | Shutter3 | Shutter2 | Shutter1 | |
| - | - | - | B | = shutter in the safe |
| - | - | B | - | = shutter in the head unit |
| - | B | - | - | = VCMD shutter |

### X3 Transport Unit

JST pin connector Model PHD, 2 x 6-pole, S12B-PHDSS (90°)
(Series = A3C40015986, Son = A3C40015984)

| Contact | Designation |
|---|---|
| 1 | + 5 V |
| 2 | Switched input from HS4 (sensor for clamp end position) |
| 3 | GND |
| 4 | NC |
| 5 | Switched input Transport1 |
| 6 | GND |
| 7 | Switched input Transport2 |
| 8 | GND |
| 9 | Switched input Transport3 |
| 10 | GND |
| 11 | Switched input Transport4 |
| 12 | GND |

### Jumper coding

| Pin 11 | Pin 9 | Pin 7 | Pin 5 | |
|---|---|---|---|---|
| Transport4 | Transport3 | Transport2 | Transport1 | |
| - | - | - | B | = Rearload transport - module in the safe |
| - | - | B | - | = Frontload transport - module in the safe |
| - | B | - | B | = Rearload transport - module in the top part |
| - | B | B | - | = Frontload transport - module in the top part |
| - | B | - | - | = VCMD Transport module |
| B | - | - | - | = BBA UT Transport module |

### X4 V.24 interface on the PC

| Contact | Designation |
|---|---|
| 1 | + 5 V |
| 2 | Switched input from HS4 (sensor for clamp end position) |
| 3 | GND |
| 4 | NC |
| 5 | Switched input Transport1 |
| 6 | GND |
| 7 | Switched input Transport2 |
| 8 | GND |
| 9 | Switched input Transport3 |
| 10 | GND |
| 11 | Switched input Transport4 |
| 12 | GND |

### 8-pole Western

(Series = 5603107937;00 or A3C40016907, Son = 5603111937)

| Contact | Designation |
|---|---|
| 1 | NC |
| 2 | DSR, not used |
| 3 | RxD |
| 4 | DTR / RTS |
| 5 | TxD |
| 6 | GND |
| 7 | CTS |
| 8 | NC |

### X5 USB interface on the PC

USB connector type B, (Series: 0150507337;00)

| Contact | Designation |
|---|---|
| 1 | NC |
| 2 | USB data - |
| 3 | USB data + |
| 4 | GND |
| 5 | Shielding |
| 6 | Shielding |

### X6 Door switch and security switch in the safe

JST pin connector Model PHD, 2 x 5-pole, S10B-PHDSS (90°)
(Series = A3C40016307, Son = A3C40016306)

| Contact | Designation |
|---|---|
| 1 | NC |
| 2 | NC |
| 3 | Inquiry of the security switch |
| 4 | GND |
| 5 | Inquiry of the door switch |
| 6 | GND |
| 7 | Inquiry of the jumper |
| 8 | GND |
| 9 | Reserve input |
| 10 | GND |

### X7 V.24 interface

JST pin connector Model PH, 6-pole, B6B-PH-K-S (standing)
(Series = 9405007037, Son = 9405010037)

| Contact | Designation |
|---|---|
| 1 | NC (DSR is not used) |
| 2 | RxD |
| 3 | DTR / RTS |
| 4 | TxD |
| 5 | GND |
| 6 | CTS |

### X8 NEN from the special electronics

JST pin connector Model PH, 2-pole, S2B-PH-K-S (90°)
(Series = A3C40014712;11, Son = A3C40014711)

| Contact | Designation |
|---|---|
| 1 | NEN |
| 2 | GND |

### X9 24 V voltage supply

2-pole Mini-Fit 39-30-1020
(Series = A3C40029754, Son = A3C40029755)

| Contact | Designation |
|---|---|
| 1 | + 24 V |
| 2 | GND |

Connector on the top side of the controller:

**X10 24 V connection**

2-pole Mini-Fit 39-30-1020
(Series = A3C40029754, Son = A3C40029755)

| Contact | Designation |
|---|---|
| 1 | + 24 V |
| 2 | GND |

**X11 Motor M1)**

6-pole Mini-Fit 39-30-1060
(Series = A3C40030083, Son = A3C40009552)

| Contact | Designation |
|---|---|
| 1 | Motor + |
| 2 | NC |
| 3 | Clock signal from main motor M1 |
| 4 | Motor - |
| 5 | + 5 V |
| 6 | GND |

**X12 Additional motor on the main drive component for Single Reject (optional)**

JST pin connector Model PH, 1 x 4-pole, S4B-PH-K-S (90°)
(Series = 7206807137, Son = 7206810137)

| Contact | Designation |
|---|---|
| 1 | Phase A + of SM1 (contract pressure of the sliding surface for emptying the Single-Reject) |
| 2 | Phase A - of SM1 (contract pressure of the sliding surface for emptying the Single-Reject) |
| 3 | Phase B + of SM1 (contract pressure of the sliding surface for emptying the Single-Reject) |
| 4 | Phase B - of SM1 (contract pressure of the sliding surface for emptying the Single-Reject) |

### X13 Clamp motors

ZIF connector, 4-pole, 1.25 mm, Molex, Series 5597, Type 39-51-3043, Top contact (Series = A3C40029756, Son = A3C40029757)

| Contact | Designation |
|---|---|
| 1 | + from clamp traction motor M2 |
| 2 | - from clamp traction motor M2 |
| 3 | + from belt drive on clamp M3 |
| 4 | - from belt drive on clamp M3 |

### X14 motor and lift magnets on the stacker / left and right side cover

JST pin connector Model PHD, 2 x 9-pole, S18B-PHDSS (90°)
(Series = A3C40032097, Son = A3C40032098)

| Contact | Designation |
|---|---|
| 1 | Phase A + of SM9 (stacker wheel) |
| 2 | Phase A - of SM9 (stacker wheel) |
| 3 | Phase B + of SM9 (stacker wheel) |
| 4 | Phase B - of SM9 (stacker wheel) |
| 5 | Phase A + of SM2 (left routing disk) |
| 6 | Phase A - of SM2 (left routing disk) |
| 7 | Phase B + of SM2 (left routing disk) |
| 8 | Phase B - of SM2 (left routing disk) |
| 9 | Phase A + of SM3 (right routing disk) |
| 10 | Phase A - of SM3 (right routing disk) |
| 11 | Phase B + of SM3 (right routing disk) |
| 12 | Phase B - of SM3 (right routing disk) |
| 13 | + 24 V |
| 14 | Lift magnet MA6 (Retract box) |
| 15 | + 24 V |
| 16 | Lift magnet MA2 / 1 (switch control for Single-Reject, optional) |
| 17 | + 24 V |
| 18 | Lift magnet MA2 / 2 (switch control for Single-Reject, optional) |

### X15 EEPROM on the stacker

ZIF connector, 8-pole, 1.00 mm, Molex, Series 52043, (90°), Bottom Contact (Series = A3C40030173, Son = A3C40030174)

| Contact | Designation |
|---|---|
| 1 | + 5 V |
| 2 | GND |
| 3 | Chip select to the EEPROM |
| 4 | Pulse to the EEPROM |
| 5 | Data output to the EEPROM |
| 6 | Data input from the EEPROM |
| 7 | NC |
| 8 | NC |

### X16 Hall sensors on the stacker

JST pin connector Model PHD, 2 x 6-pole, S12B-PHDSS (90°)
(Series = A3C40015986, Son = A3C40015984)

| Contact | Designation |
|---|---|
| 1 | VCC |
| 2 | VCC |
| 3 | Switched input from HS1 (sensor for clamp home position) |
| 4 | Switched input from HS2 (sensor for Reject/Retract initial position) |
| 5 | GND |
| 6 | GND |
| 7 | VCC |
| 8 | VCC |
| 9 | Switched input from HS3 (sensor for Reject/Retract reversed position) |
| 10 | Switched input from DPS3 (Reserve, used more than once!!!) |
| 11 | GND |
| 12 | GND |

### X17 hybrid photosensors and photosensors on the Single Reject

JST pin connector Model PHD, 2 x 8-pole, S16B-PHDSS (90°)
(Series = 0152307537;00, Son = 0152310537)

| Contact | Designation |
|---|---|
| 1 | VCC |
| 2 | VCC |
| 3 | Switched input from DPS14 (sensor for Single-Reject switch position) |
| 4 | Switched input from DPS15 (sensor for Single-Reject switch position) |
| 5 | GND |
| 6 | GND |
| 7 | VCC |
| 8 | VCC |
| 9 | Switched input from DPS7 (sensor for Single-Reject sliding surface home position) |
| 10 | Switched input from DPS3 (Reserve, used more than once!!!) |
| 11 | GND |
| 12 | GND |
| 13 | Power supply for phototransistor from PS2<br>(empty compartment monitor with Single-Reject) (LSVCC) |
| 14 | Measuring input for phototransistor from PS2<br>(empty compartment monitor with Single-Reject) (LSR5) |
| 15 | + Current for transmission diodes from PS2 (LSIPLUS) |
| 16 | - Current for transmission diodes from PS2 (LSIS2) |

**X18 hybrid photosensors and photosensors on the stacker / left side cover**

JST pin connector Model PHD, 2 x 11-pole, S22B-PHDSS (90°)
(Series = A3C40032102, Son = A3C40032103)

Phototransistor of PS18 in place.

| Contact | Designation |
|---|---|
| 1 | VCC |
| 2 | VCC |
| 3 | Switched input from DPS5 (inquiry of the positions of the left routing disk) |
| 4 | Switched input from DPS8 (inquiry of the positions of the left routing disk) |
| 5 | GND |
| 6 | GND |
| 7 | VCC |
| 8 | VCC |
| 9 | Switched input from DPS2 (sensor for stacker wheel position) |
| 10 | Switched input from DPS4 (sensor for Retract box) |
| 11 | GND |
| 12 | GND |
| 13 | VCC |
| 14 | VCC |
| 15 | Switched input from DPS1 (Reserve) |
| 16 | Switched input from DPS3 (Reserve, used more than once!!!) |
| 17 | GND |
| 18 | GND |
| 19 | Power supply for phototransistor from PS1 (stacker wheel input) (LSVCC) |
| 20 | Measuring input for phototransistor from PS1 (stacker wheel input) (LSR3) |
| 21 | + Current for transmission diodes from PS1 + PS18 (LSIPLUS) |
| 22 | - Current for transmission diodes from PS1 + PS18 (LSIS1) |

Connector on the bottom side of the controller:

### X30 dispensing units

Male connectors, 2 x 20-pole (straight) (series = 2383807837)

| Contact | Designation |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |
| 5 | GND |
| 6 | + 5 V |
| 7 | + 5 V |
| 8 | + 5 V |
| 9 | + 5 V switched |
| 10 | + 5 V switched |
| 11 | + 5 V switched |
| 12 | Load – GND |
| 13 | Load – GND |
| 14 | Load – GND |
| 15 | Load – GND |
| 16 | Load – GND |
| 17 | Load – GND |
| 18 | + 24 V switched |
| 19 | + 24 V switched |
| 20 | + 24 V switched |
| 21 | + 24 V switched |
| 22 | + 24 V switched |
| 23 | + 24 V switched |
| 24 | Dispensing clutch dispensing unit 1 |
| 25 | Retaining magnet dispensing unit 1 |
| 26 | Dispensing clutch dispensing unit 2 |
| 27 | Retaining magnet dispensing unit 2 |
| 28 | Dispensing clutch dispensing unit 3 |
| 29 | Retaining magnet dispensing unit 3 |
| 30 | Dispensing clutch dispensing unit 4 |

| Contact | Designation |
|---|---|
| 31 | Retaining magnet dispensing unit 4 |
| 32 | Dispensing clutch dispensing unit 5 |
| 33 | Retaining magnet dispensing unit 5 |
| 34 | Dispensing clutch dispensing unit 6 |
| 35 | Retaining magnet dispensing unit 6 |
| 36 | Dispensing clutch dispensing unit 7 |
| 37 | Retaining magnet dispensing unit 7 |
| 38 | Dispensing clutch dispensing unit 8 |
| 39 | Retaining magnet dispensing unit 8 |
| 40 | Load – GND |

**X31 dispensing units**

Male connectors, 2 x 20-pole (straight) (series = 2383807837)

| Contact | Designation |
|---|---|
| 1 | GND |
| 2 | EEPROM pulse |
| 3 | EEPROM data |
| 4 | D0 |
| 5 | D1 |
| 6 | D2 |
| 7 | D3 |
| 8 | D4 |
| 9 | D5 |
| 10 | D6 |
| 11 | D7 |
| 12 | CS-ICN |
| 13 | CS-ReserveN |
| 14 | CS Dispensing unit1 |
| 15 | CS Dispensing unit2 |
| 16 | CS Dispensing unit3 |
| 17 | CS Dispensing unit4 |
| 18 | CS Dispensing unit5 |
| 19 | CS Dispensing unit6 |

| Contact | Designation |
|---|---|
| 20 | CS Dispensing unit7 |
| 21 | CS Dispensing unit8 |
| 22 | WRN |
| 23 | RDN |
| 24 | ResetN |
| 25 | GND |
| 26 | Free |
| 27 | Power source for the LEDs (LSIPLUS) |
| 28 | Current sink dispensing unit 1 (LSIV1) |
| 29 | Current sink dispensing unit 2 (LSIV2) |
| 30 | Current sink dispensing unit 3 (LSIV3) |
| 31 | Current sink dispensing unit 4 (LSIV4) |
| 32 | Current sink dispensing unit 5 (LSIV5) |
| 33 | Current sink dispensing unit 6 (LSIV6) |
| 34 | Current sink dispensing unit 7 (LSIV7) |
| 35 | Current sink dispensing unit 8 (LSIV8) |
| 36 | Voltage supply phototransistors (LSVCC) |
| 37 | Inquiry 1. Phototransistor for pressure sensor (LSANDR) |
| 38 | Inquiry 2. Phototransistor for empty sensor (LSR1) |
| 39 | Inquiry 3. Phototransistor for dispensing sensor (LSR2) |
| 40 | GND |

**X32 hybrid photosensors and photosensors on the stacker / left side cover**

JST pin connector Model PHD, 2 x 7-pole, B14B-PHDSS (standing)
(Series = A3C40032574, Son = A3C40032575)

| Contact | Designation |
|---|---|
| 1 | VCC |
| 2 | VCC |
| 3 | Switched input from DPS6 (inquiry of the positions of the right routing disk) |
| 4 | Switched input from DPS9 (inquiry of the positions of the right routing disk) |
| 5 | GND |
| 6 | GND |
| 7 | VCC |
| 8 | VCC |
| 9 | Switched input from S1 (switch reports "Reject/Retract cassette inserted") |
| 10 | Switched input from DPS3 (Reserve, used more than once!!!) |
| 11 | GND |
| 12 | GND |
| 13 | Voltage supply for phototransistors of PS18<br>(input monitoring in front of the Reject cassette) (LSVCC) |
| 14 | Measuring input for phototransistor from PS18<br>(input monitoring in front of the Reject cassette) (LSR4) |

**X33 position switches and extensions**

JST pin connector Model PHD, 2 x 17-pole, B34B-PHDSS (standing)
(Series = A3C40036263, Son = A3C40036264)

| Contact | Designation |
|---|---|
| 1 | + 5 V |
| 2 | GND |
| 3 | + 24V |
| 4 | Load – GND |
| 5 | Chip select to the reserve device on the SPI2 |
| 6 | Pulse to the reserve device on the SPI2 |
| 7 | Data output to the reserve device on the SPI2 |

| Contact | Designation |
|---|---|
| 8 | Data input from the reserve device on the SPI2 |
| 9 | Inquiry of the position switch |
| 10 | GND |
| 11 | Spare output |
| 12 | GND |
| 13 | Segment A of the 7-segment display top / left |
| 14 | Segment B of the 7-segment display top / left |
| 15 | Segment C of the 7-segment display top / left |
| 16 | Segment D of the 7-segment display top / left |
| 17 | Segment E of the 7-segment display top / left |
| 18 | Segment F of the 7-segment display top / left |
| 19 | Segment G of the 7-segment display top / left |
| 20 | Segment DP of the 7-segment display top / left |
| 21 | Special output for the 7-segment display top / left |
| 22 | Segment A of the 7-segment display bottom / right |
| 23 | Segment B of the 7-segment display bottom / right |
| 24 | Segment C of the 7-segment display bottom / right |
| 25 | Segment D of the 7-segment display bottom / right |
| 26 | Segment E of the 7-segment display bottom / right |
| 27 | Segment F of the 7-segment display bottom / right |
| 28 | Segment G of the 7-segment display bottom / right |
| 29 | Segment DP of the 7-segment display bottom / right |
| 30 | Special output for the 7-segment display bottom / right |
| 31 | Free |
| 32 | Free |
| 33 | Free |
| 34 | free |

Connector on the right side of the controller:

**X40 jumpers**

Berg pin connector, 2 x 10-pole (Series 5673507037;10)

| Contact | Designation |
|---|---|
| 1 | 'DOOR' (note safe door), to be queried through firmware |
| 2 | GND |
| 3 | 'SCOP' (reserve input, is not supported) |
| 4 | GND |
| 5 | 'Jump A' (reserve input A), to be queried through firmware |
| 6 | GND |
| 7 | 'Jump B' (reserve input B), to be queried through firmware |
| 8 | GND |
| 9 | 'Jump C' (reserve input C), to be queried through firmware |
| 10 | GND |
| 11 | 'Jump D' (reserve input D), to be queried through firmware |
| 12 | GND |
| 13 | 'Clear CMOS' RAM, to be queried through firmware |
| 14 | GND |
| 15 | 'NEN', also to be queried through firmware |
| 16 | GND |
| 17 | 'Battery' jumper |
| 18 | GND |
| 19 | 'Jump PLD' jumper (jumper for controlling one PLD function) |
| 20 | GND |

The following elements continue to be available:

Battery, display, beeper, sensor

Connector in the middle of the controller:

X50 JTAG-PLD programming connector

X51 Kontron test connector

X52 Turbodebugger plug

# 4-cassette distributor board

### 1st connection to the CMD controller

| Contact | Designation |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |
| 5 | GND |
| 6 | + 5 V |
| 7 | + 5 V |
| 8 | + 5 V |
| 9 | + 5 V switched |
| 10 | + 5 V switched |
| 11 | + 5 V switched |
| 12 | Load – GND |
| 13 | Load – GND |
| 14 | Load – GND |
| 15 | Load – GND |
| 16 | Load – GND |
| 17 | Load – GND |
| 18 | + 24 V switched |
| 19 | + 24 V switched |
| 20 | + 24 V switched |
| 21 | + 24 V switched |
| 22 | + 24 V switched |
| 23 | + 24 V switched |
| 24 | Dispensing clutch dispensing unit 1 |
| 25 | Retaining magnet dispensing unit 1 |
| 26 | Dispensing clutch dispensing unit 2 |
| 27 | Retaining magnet dispensing unit 2 |
| 28 | Dispensing clutch dispensing unit 3 |
| 29 | Retaining magnet dispensing unit 3 |
| 30 | Dispensing clutch dispensing unit 4 |
| 31 | Retaining magnet dispensing unit 4 |

| Contact | Designation |
|---|---|
| 32 | Dispensing clutch dispensing unit 5 |
| 33 | Retaining magnet dispensing unit 5 |
| 34 | Dispensing clutch dispensing unit 6 |
| 35 | Retaining magnet dispensing unit 6 |
| 36 | Dispensing clutch dispensing unit 7 |
| 37 | Retaining magnet dispensing unit 7 |
| 38 | Dispensing clutch dispensing unit 8 |
| 39 | Retaining magnet dispensing unit 8 |
| 40 | Load – GND |

**2nd connection to the CMD controller**

| Contact | Designation |
|---|---|
| 1 | GND |
| 2 | EEPROM pulse |
| 3 | EEPROM data |
| 4 | D0 |
| 5 | D1 |
| 6 | D2 |
| 7 | D3 |
| 8 | D4 |
| 9 | D5 |
| 10 | D6 |
| 11 | D7 |
| 12 | CS-ICN |
| 13 | CS-ReserveN |
| 14 | CS Dispensing unit1 |
| 15 | CS Dispensing unit2 |
| 16 | CS Dispensing unit3 |
| 17 | CS Dispensing unit4 |
| 18 | CS Dispensing unit5 |
| 19 | CS Dispensing unit6 |
| 20 | CS Dispensing unit7 |
| 21 | CS Dispensing unit8 |
| 22 | WRN |

| Contact | Designation |
|---|---|
| 23 | RDN |
| 24 | ResetN |
| 25 | GND |
| 26 | Free |
| 27 | Power source for the LEDs (LSIPLUS) |
| 28 | Current sink dispensing unit 1 (LSIV1) |
| 29 | Current sink dispensing unit 2 (LSIV2) |
| 30 | Current sink dispensing unit 3 (LSIV3) |
| 31 | Current sink dispensing unit 4 (LSIV4) |
| 32 | Current sink dispensing unit 5 (LSIV5) |
| 33 | Current sink dispensing unit 6 (LSIV6) |
| 34 | Current sink dispensing unit 7 (LSIV7) |
| 35 | Current sink dispensing unit 8 (LSIV8) |
| 36 | Voltage supply phototransistors (LSVCC) |
| 37 | Inquiry 1. Phototransistor for pressure sensor (LSANDR) |
| 38 | Inquiry 2. Phototransistor for empty sensor (LSR1) |
| 39 | Inquiry 3. Phototransistor for dispensing sensor (LSR2) |
| 40 | GND |

**1 or 4 cassette connectors (ISEP)**

| Contact | Designation |
|---|---|
| 1 | Data to and from the EEPROM |
| 2 | Pulse to the EEPROM |
| 3 | Chip select to the EEPROM |
| 4 | GND for logic |
| 5 | + 5 V, switched |
| 6 | + 24 V |
| 7 | Stepper motor |
| 8 | Stepper motor |
| 9 | Stepper motor |
| 10 | Stepper motor |
| 11 | Load – GND |

**Connector for 1-cassette distributor board**

| Contact | Designation |
|---|---|
| 1 | Power source for the transmission diodes (LSIPLUS) |
| 2 | Current sink dispensing unit x (LSIVx), activates the three transmission diodes of the only dispensing unit x |
| 3 | Power supply for the pressure phototransistor (LSVCC) |
| 4 | Input of the pressure phototransistor (LSANDR) (PS at the side) |
| 5 | Power supply for the cassette empty sensor phototransistor (LSVCC) |
| 6 | Input from the cassette empty sensor phototransistor (LSR1) (PS top) |
| 7 | Power supply for the dispensing sensor phototransistor (LSVCC) |
| 8 | Input from the dispensing sensor phototransistor (LSR2) (PS bottom) |
| 9 | + 24 V for dispensing clutch |
| 10 | Output to the dispensing clutch of dispensing unit x |
| 11 | + 24 V for retaining magnet |
| 12 | Output to the retaining magnet of dispensing unit x |

**Connector for the two double dispensing units on the 4-cassette distributor board**

| Contact | Designation |
|---|---|
| 1 | Power source for the transmission diodes (LSIPLUS) |
| 2 | Current sink dispensing unit x (LSIVx), activates the three transmission diodes of the only dispensing unit x |
| 3 | Power supply for the pressure phototransistor (LSVCC) |
| 4 | Input of the pressure phototransistor (LSANDR) (PS at the side) |
| 5 | Power supply for the cassette empty sensor phototransistor (LSVCC) |
| 6 | Input from the cassette empty sensor phototransistor (LSR1) (PS top) |
| 7 | Power supply for the dispensing sensor phototransistor (LSVCC) |
| 8 | Input from the dispensing sensor phototransistor (LSR2) (PS bottom) |
| 9 | Power source for the transmission diodes (LSIPLUS) |
| 10 | Current sink dispensing unit x+1 (LSIVx+1), activates the three transmission diodes of the only dispensing unit x+1 |
| 11 | Power supply for the pressure phototransistor (LSVCC) |
| 12 | Input of the pressure phototransistor (LSANDR) (PS at the side) |
| 13 | Power supply for the cassette empty sensor phototransistor (LSVCC) |
| 14 | Input from the cassette empty sensor phototransistor (LSR1) (PS top) |
| 15 | Power supply for the dispensing sensor phototransistor (LSVCC) |
| 16 | Input from the dispensing sensor phototransistor (LSR2) (PS bottom) |
| 17 | + 24 V for dispensing clutch |
| 18 | Output to the dispensing clutch of dispensing unit x |
| 19 | + 24 V for retaining magnet |
| 20 | Output to the retaining magnet of dispensing unit x |
| 21 | + 24 V for dispensing clutch |
| 22 | Output to the dispensing clutch of dispensing unit x+1 |
| 23 | + 24 V for retaining magnet |
| 24 | Output to the retaining magnet of dispensing unit x+1 |

# Spare parts catalogue

## Overview of the individual elements

| **Output transports** | |
|---|---|
| **Material No.** | **Designation** |
| 1750057875 | AGT CMD-V4 horizontal FL 101 mm (for ProCash 1500xe/USB FL / 1521xe FL / 280 / 281) |
| 1750059284 | AGT CMD-V4 horizontal RL 124 mm (for ProCash 1500xe/USB RL / 5000 RL) |
| 1750068776 | AGT CMD-V4 horizontal FL 125 mm (for ProCash 5000 mini FL) |
| 1750059116 | AGT CMD-V4 horizontal RL 232 mm (for ProCash 2050xe/USB / 2150xe/USB / 2250xe/USB / 2054xe) |
| 1750059283 | AGT CMD-V4 horizontal FL 241 mm (for ProCash 2350xe/USB FL / CINEO C2590) |
| 1750160110 | AGT CMD-V4 horizontal RL 252.6 mm (for ProCash 8050/8150 / CINEO C2550/C2560 / CINEO C2560 DU) |
| 1750076716 | AGT CMD-V4 horizontal RL 287 mm (for ProCash 2150xe/USB CEN VI / ProCash 2054xe) |
| 1750045360 | AGT CMD-V4 vertical FL (for ProCash 2000xe/USB FL / ProCash 2100xe/USB FL) |
| 1750098460 | AGT CMD-V4 vertical FL closed (ProCash 2000xe/USB FL / 2100xe/USB FL) |
| 1750045348 | AGT CMD-V4 vertical RL (for ProCash 2000xe/USB RL / ProCash 2100xe/USB RL) |
| 1750098461 | AGT CMD-V4 vertical RL closed (ProCash 2000xe/USB RL / 2100xe/USB RL) |
| 1750154375 | Output transport 8x CMD-V4 vertical FL closed (for ProCash 8x00 FL and CINEO C2060/C2070 FL) |
| 1750154376 | Output transport 8x CMD-V4 vertical RL closed (for ProCash 8x00 RL and CINEO C2060/C2070 RL) |
| 1750164758 | Output transport 8x CMD-V4 vertical FL (for ProCash 8x00 FL and CINEO C2060/C2070 FL) |
| 1750164759 | Output transport 8x CMD-V4 vertical RL (for ProCash 8x00 RL and CINEO C2060/C2070 RL) |

| **Output transports** | |
|---|---|
| **Material No.** | **Designation** |
| 1750068690 | AGT CMD-V4 SCO |

| **Stacker** | |
|---|---|
| **Material No.** | **Designation** |
| 1750055782 | CMD stacker without single reject switch |
| 1750058042 | CMD stacker complete with single reject switch |
| 1750089828 | CMD stacker II / single reject switch |
| 1750089829 | CMD stacker II without reject switch |
| 1750109658 | CMD stacker without reject switch |
| 1750109659 | CMD stacker/single reject switch |
| 1750109666 | CMD stacker II / single reject switch |
| 1750109667 | CMD stacker II without reject switch |
| 1750053977 | Clamp CMD-V4 |
| 1750083454 | Stacker output transport BBA-UT CMD-V4 |
| 1750111640 | Stacker output transport BBA-UT CMD-V4 |

| **Shutter** | |
|---|---|
| **Material No.** | **Designation** |
| 1750045330 | Shutter CMD-V4 vertical RL |
| 1750100966 | Shutter CMD-V4 vertical RL rail |
| 1750054768 | Shutter CMD-V4 vertical FL |
| 1750100965 | Shutter CMD-V4 vertical FL rail |
| 1750053690 | Shutter CMD-V4 horizontal RL |
| 1750082603 | Shutter CMD-V4 horizontal RL assy. |
| 1750100964 | Shutter CMD-V4 horizontal RL rail |
| 1750056960 | Shutter CMD-V4 horizontal FL |
| 1750082602 | Shutter CMD-V4 horizontal FL assy. |
| 1750085287 | Shutter CMD-V4 horizontal FL assy. w |
| 1750157286 | Shutter 8x CMD FL |
| 1750159971 | Shutter 8x CMD RL |
| 1750166396 | Shutter horiz. 8x CMD FL |
| 1750166395 | Shutter horiz. 8x CMD RL |
| 1750229726 | Shutter horiz. 8x CMD RL rail |
| 1750187300 | Shutter horiz. VBK 8x CMD RL |

| **Shutter** | |
|---|---|
| **Material No.** | **Designation** |
| 1750184934 | Shutter protection 8x CMD FL |
| 1750184935 | Shutter protection 8x CMD RL |
| 1750192728 | Shutter_CMD_V4_horiz._RL_VBK |
| 1750193367 | Shutter_CMD-V4_vert._RL_VBK |
| 1750193148 | Shutter_CMD-V4_vert_FL_VBK |

| **Controller and distributor boards** | |
|---|---|
| **Material No.** | **Designation** |
| 1750055781 | CMD Controller assembled (incl. cover) |
| 1750074210 | CMD Controller with USB assembled with cover |
| 1750105679 | CMD Controller II USB assy. with cover |
| 1750123397 | CMD SCP Controller USB with cover |
| 1750044878 | Distributor board 4-cassette assy. (including cover) |
| 1750052425 | Distributor board 1-cassette assy. (including cover) |
| 1750092590 | CMD-DaK distributor board without K plug |
| 1750102602 | CMD-DaK distributor board with K plug |
| 1750068065 | Extension board in connection with the ProCash 5000 (mini) |
| 1750254979 | SNR CMD-V4 stacker with ER prep. |

| **Racks** | |
|---|---|
| **Material No.** | **Designation** |
| 1750053055 | CMD-V4 4-cassette housing assembled |
| 1750064370 | CMD Outsert housing 4-cassette pre-assy. |
| 1750130600 | CMD housing NT pre-assy. 4-cassette |
| 1750121290 | Housing SCP assy. |
| 1750092425 | CMD-DaK housing 2-cassette not shown assy. |
| 1750094547 | CMD-DaK housing 2-cassette assy. |
| 1750054048 | 1-cassette housing complete with locking |
| 1750054366 | 1-cassette housing complete without locking |
| 1750064370 | CMD Outsert housing 4-cassette pre-assembled |
| 1750066065 | CMD Outsert housing 1-cassette pre-assembled |
| 1750066067 | CMD Outsert housing 1-cassette without locking pre-assembled |

| **Racks** | |
|---|---|
| **Material No.** | **Designation** |
| 1750141416 | CMD housing NT pre-assy. 1-cassette |
| 1750141838 | CMD housing NT pre-assy. 1-cassette without locking |
| 1750055308 | CMD latch |
| 1750080936 | Spring clip 4-compartment housing CMD-V4 |
| 1750080940 | Spring clip 1-compartment housing CMD-V4 |
| 1750174785 | CMD inside door Vill. assy. |

| **Dispensing units** | |
|---|---|
| **Material No.** | **Designation** |
| 1750051760 | Double dispensing unit CMD-V4 (without multiple-note detection unit) |
| 1750109615 | Double dispensing unit CMD-V4 (without multiple-note detection unit) |
| 1750125830 | Double dispensing unit CMD-V4 II for VCMD (without multiple-note detection unit) |
| 1750051761 | Double dispensing unit MDMS CMD-V4 (with multiple-note detection unit) |
| 1750109641 | Double dispensing unit MDMS CMD-V4 (with multiple-note detection unit) |
| 1750125831 | Double dispensing unit MDMS CMD-V4 II for VCMD (with multiple-note detection unit) |
| 1750051758 | Single dispensing unit CMD-V4 or VCMD (without multiple-note detection unit) |
| 1750109613 | Single dispensing unit CMD-V4 or VCMD (without multiple-note detection unit) |
| 1750051759 | Single dispensing unit MDMS CMD-V4 or VCMD (with multiple-note detection unit) |
| 1750109614 | Single dispensing unit MDMS CMD-V4 or VCMD (with multiple-note detection unit) |
| 1750035762 | Extractor shaft CMD-V4 assembled |
| 1750192140 | Extractor shaft CMD-V4 A complete |
| 1750192142 | Extractor shaft CMD-V4 B complete |

| **Reject / retract cassette** | |
|---|---|
| **Material No.** | **Designation** |
| 1750041920 | CMD reject/retract cassette |
| 1750056651 | CMD reject/retract cassette lead-sealed |
| 1750056652 | CMD reject cassette lead-sealed |
| 1750056653 | CMD reject cassette |
| 1750061714 | CMD reject/retract cassette lockable |
| 1750061877 | CMD reject cassette lockable |
| 1750063255 | CMD reject cassette gray |
| 1750063256 | CMD reject cassette lockable gray |
| 1750063257 | CMD reject cassette lead-sealed gray |
| 1750122197 | CMD reject cassette gray |
| 1750122198 | CMD reject cassette lead-sealed gray |

| **Cash-out cassettes** | |
|---|---|
| **Material No.** | **Designation** |
| 1750053501 | Cash-out cassette CMD-V4 |
| 1750053502 | Cash-out cassette CMD-V4 lockable |
| 1750053503 | Cash-out cassette CMD-V4 lead-sealed |
| 1750053504 | Cash-out cassette CMD-V4 FSM |
| 1750053505 | Cash-out cassette CMD-V4 FSM lockable |
| 1750053506 | Cash-out cassette CMD-V4 FSM lead-sealed |
| 1750053511 | Cash-out cassette BBA-UT CMD-V4 |
| 1750053512 | Cash-out cassette BBA-UT CMD-V4 lockable |
| 1750053513 | Cash-out cassette BBA-UT CMD-V4 lead-sealed |
| 1750053540 | Cash-out cassette CMD-V4 no cash |
| 1750053550 | Cash-out cassette CMD-V4 maculation |
| 1750053650 | Cash-out cassette CMD-V4 maculation |
| 1750081760 | Cash-out cassette CMD-V4 maculation 2 |
| 1750092195 | Cash-out cassette CMD-V4 SQS pre-assembled |
| 1750109646 | Cash-out cassette CMD-V4 |
| 1750109651 | Cash-out cassette CMD-V4 lead-sealed |
| 1750109655 | Cash-out cassette CMD-V4 FSM |
| 1750109656 | Cash-out cassette CMD-V4 FSM lead-sealed |
| 1750109662 | Cash-out cassette CMD-V4 maculation 2 |

| **Cash-out cassettes** | |
|---|---|
| **Material No.** | **Designation** |
| 1750109668 | Cash-out cassette CMD-V4 SQS RF0 |
| 1750109669 | Cash-out cassette CMD-V4 SQS RF2 |
| 1750109754 | Cash-out cassette BBA-UT CMD-V4 |
| 1750109755 | Cash-out cassette BBA-UT CMD-V4 lead-sealed |
| 1750109756 | Cash-out cassette CMD-V4 no cash |
| 1750109757 | Cash-out cassette CMD-V4 maculation |
| 1750136553 | Cash-out cassette CMD-V4 UT without lock FSM |
| 1750136555 | Cash-out cassette CMD-V4 UT with lock FSM |
| 1750152040 | Cash-out cassette CMD-V4 FSM spec. |
| 1750042970 | CMD carriage assembled |
| 1750043537 | CMD closure assembled |
| 1750042973 | CMD cassette lid assy. |
| 1750058210 | CMD cassette lid printed in blue |
| 1750058211 | CMD cassette lid maculation printed |
| 1750081830 | CMD cassette lid maculation 2 pre-assembled |
| 1750038783 | CMD cassette handle |
| 1750043537 | CMD closure assembled |
| 5482000111 | Lock assembled |

**i** Spare parts with FRU numbers have been introduced with the introduction of the CMD-V4.

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# Notes

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