DN Series™ 450

Through-the-Wall Walk-up System

Operator Manual

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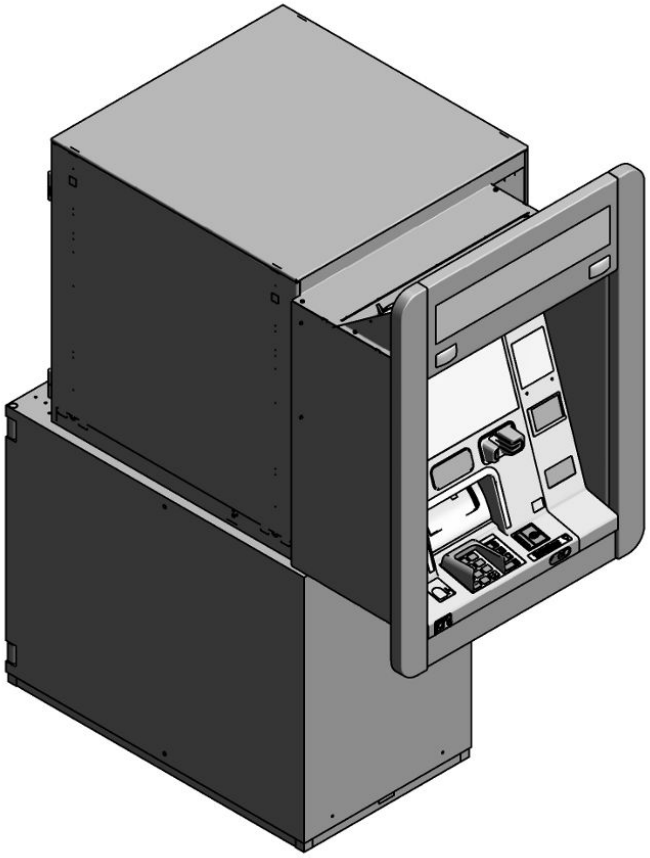

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Table of Contents

1 Introduction 1-1
1.1 Using this Manual 1-1

2 Safety 2-1
2.1 Observing Safety Precautions 2-1
2.2 General safety precautions for the system 2-1

3 System Description 3-1
3.1 System Overview 3-1
3.1.1 Before Performing Maintenance Procedures on the System 3-2
3.1.2 Maintenance Tasks 3-2
3.1.3 Device Usage 3-2
3.2 Components on the Fascia 3-4
3.3 Components of the Upper Chassis 3-9
3.3.1 External Control Unit 3-22
3.4 Components in the Safe 3-26
3.4.1 Recycling Module RM4V, Lower Module Overview 3-28
3.4.2 Recycling Module RM4V, Recycling Cassettes 3-30
3.4.3 Recycling Module RM4V, All-In Cassettes 3-32
3.4.4 Recycling Module RM4V, Cassette Physical Description 3-32
3.4.5 Recycling Module RM4H, Overview 3-34
3.4.6 Recycling Module RM4H, Standard Cassette 3-36
3.4.7 Recycling Module RM4H, All-in Cassette 3-37
3.4.8 Recycling Module RM4H, Cassette Physical Description 3-38
3.4.9 CMD-V6C Cash Dispenser Lower Module 3-41
3.4.10 CMD-V6C Cash Dispenser Supply Cassettes 3-43
3.4.11 CMD-V6C Cash Dispenser Reject/Retract Cassette 3-45
3.4.12 CMD-V6C Cassette Physical Description 3-46
3.4.13 CMD-V6A Cash Dispenser Lower Module 3-47
3.4.14 CMD-V6A Cash Dispenser Supply Cassettes 3-47
3.4.15 CMD-V6A Divert Bin 3-49
3.4.16 CMD-V6A Cassette Physical Description 3-50
3.4.17 Safe Lock 3-50
3.4.18 System Switches 3-50
3.4.19 Alarm Sensors 3-50
3.4.20 Seismic Detectors 3-50
3.4.21 Third Party Alarms 3-51
3.4.22 Heat Thermostat 3-51

4 Options 4-1

5 Operation 5-1
5.1 T/SOP 5-1
5.1.1 Startup and Shutdown 5-2
5.2 Accessing the Upper Chassis 5-4
5.2.1 Accessing the Upper Chassis - Electro-mechanical (EM) Lock 5-4
5.2.2 Opening the Upper Chassis Rear Door 5-6

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5.2.3 Closing the Upper Chassis Rear Door 5-7
5.3 System and Device Touch Points 5-8
5.4 Accessing the Rear Service Display 5-14
5.4.1 Accessing Rear Service Display Through the Upper Chassis Rear Door 5-14
5.4.2 Accessing Rear Service Display Inside of the Upper Chassis Rear Door 5-15
5.5 Pulling out / Pushing in Cash Components 5-16
5.5.1 Pulling out / Pushing in upper unit 5-16
5.5.2 Pulling out / Pushing in the Lower Unit 5-17
5.6 Accessing the Check Deposit Module 5-19
5.7 Accessing the Card Retain Bin and the Receipt Printer 5-20
5.8 Accessing the Lockable/Removable Card Box 5-21
5.9 Accessing the Coin Dispenser 5-22
5.10 How to Read Bar Codes 5-23
5.11 Accessing the Safe 5-24
5.12 Opening/closing the safe door 5-25
5.12.1 Opening/closing the safe door (with factory setting) 5-25
5.12.2 Customizing the key and number combination locks 5-31
5.12.3 Opening/closing the safe door (with customized lock) 5-35

6 Maintenance 6-1
6.1 Cleaning the System Housing 6-1
6.2 Cleaning the Displays 6-1
6.3 Cleaning the Keyboards 6-1
6.4 Cleaning the Printers 6-1

A Related Documentation A-1

B Technical Data B-1
B.1 Electrical Characteristics B-1
B.2 System Conditions B-1
B.3 Installation Specifications B-2
B.4 Effective Power and Heat Output B-3
B.5 Mechanical Environmental Conditions B-3
B.6 Environmental Conditions B-3
B.7 Compliance with Standards and Approvals B-4
B.8 Environmental Protection B-5

C Appendix - Advanced Upper Cabinet and Extended Window Trim System C-1
C.1 Introduction C-1
C.1.1 Using this Appendix C-1
C.2 System Description C-1
C.2.1 System Overview C-1
C.2.2 Fascia Components C-4
C.2.3 Upper Chassis Components C-8
C.2.4 Safe Components C-13
C.3 Options C-13
C.4 Operation C-13
C.4.1 T/SOP C-14
C.4.2 System and Device Touch Points C-15

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C.4.3 Accessing the TP20 Form Printer C-21
C.4.4 Accessing the Passbook Printer C-22
C.4.5 Accessing the Safe C-23
C.4.6 Accessing the CMD-V6C or CMD-V6A Cash Dispenser C-24
C.5 Maintenance C-24
C.6 Related Documentation C-24
C.7 Technical Data C-24
C.7.1 Electrical Characteristics C-25
C.7.2 System Conditions C-25
C.7.3 Installation Specifications C-26
C.7.4 Effective Power and Heat Output C-27
C.7.5 Mechanical Environmental Conditions C-27
C.7.6 Environmental Conditions C-27
C.7.7 Compliance with Standards and Approvals C-28
C.7.8 Environmental Protection C-29

List of Figures

Figure 3-1 DN Series™ 450 Through-the-Wall Walk-up System 3-1
Figure 3-2 Modules and Devices Mounted on the Fascia 3-5
Figure 3-3 User Guide Lights 3-7
Figure 3-4 Biometric Fingerprint Scanner 3-8
Figure 3-5 Upper Chassis Devices 3-10
Figure 3-6 Cash Recycler Upper Unit 3-11
Figure 3-7 Check Deposit Module 3-12
Figure 3-8 Cash Dispenser Module Upper Unit 3-13
Figure 3-9 Four Hopper Coin Dispenser 3-14
Figure 3-10 Eight Hopper Coin Dispenser Module 3-15
Figure 3-11 TP30 Receipt Printer 3-17
Figure 3-12 TP31 Receipt Printer 3-18
Figure 3-13 System Door Open - Rear Service Display with Touch Screen 3-19
Figure 3-14 System Door Closed - Rear Service Display with Touch Screen 3-20
Figure 3-15 Heater 3-21
Figure 3-16 External Control Unit - Overview 3-22
Figure 3-17 Devices Located in the Safe (with RM4V) 3-27
Figure 3-18 Devices Located in the Safe (RM4H) 3-28
Figure 3-19 Recycling Module, Generation Four Vertical (RM4V) Lower Module 3-29
Figure 3-20 Convenience Recycling Cassette 3-30
Figure 3-21 Secure Recycling Cassette 3-31
Figure 3-22 All-In Cassette (Secure Cassette Shown) 3-32
Figure 3-23 RM4H Lower Unit 3-35
Figure 3-24 Standard Cassette Basic/Midrange 3-36
Figure 3-25 All-in Cassette 3-37

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Figure 3-26 CMD-V6C Lower Module 3-42
Figure 3-27 CMD-V6C Supply Cassette 3-44
Figure 3-28 CMD-V6C Cash Dispenser Reject/Retract Cassette 3-45
Figure 3-29 CMD-V6A Lower Module 3-47
Figure 3-30 Convenience Supply Cassette 3-48
Figure 3-31 Tamper-indicating Supply Cassette 3-48
Figure 3-32 Divert Bin 3-49
Figure 4-1 Default Remote Status Indicator 4-2
Figure 4-2 Remote Status Indicator with Audio 4-2
Figure 5-1 Switching off the System 5-2
Figure 5-2 Turning off the System 5-2
Figure 5-3 T/SOP Power Down at Device Overview Screen 5-3
Figure 5-4 T/SOP Power Down Specific Modules Screen 5-4
Figure 5-5 EM Lock Location 5-5
Figure 5-6 Connect Battery to Contacts 5-6
Figure 5-7 Opening the Upper Chassis Rear Door 5-7
Figure 5-8 Closing the Upper Chassis Rear Door 5-8
Figure 5-9 Upper Chassis Touch Points 5-9
Figure 5-10 Safe Touch Points With RM4V Recycling Module 5-10
Figure 5-11 More Safe Touch Points With RM4H Recycling Module 5-11
Figure 5-12 More Safe Touch Points with CMD-V6C 5-12
Figure 5-13 More Safe Touch Points with CMD-V6A 5-13
Figure 5-14 Accessing Rear Service Display Through the Upper Chassis Rear Door 5-14
Figure 5-15 Accessing the Rear Service Display Inside of Upper Chassis Rear Door 5-15
Figure 5-16 Pulling out the Upper Unit 5-16
Figure 5-17 Pushing in the Upper Unit 5-17
Figure 5-18 Pulling out the Lower Unit 5-17
Figure 5-19 Pushing in the Lower Unit 5-18
Figure 5-20 Accessing the Check Deposit Module 5-19
Figure 5-21 Accessing the Card Retain Bin and the Receipt Printer 5-20
Figure 5-22 Removing the Card Box 5-21
Figure 5-23 Reinstalling the Card Box 5-22
Figure 5-24 Accessing the Coin Dispenser 5-23
Figure 5-25 How to Read Bar Codes 5-24
Figure C-1 DN Series™ 450 Through-the-Wall Walk-up System with Advanced Upper Cabinet and Extended Window Trim C-2
Figure C-2 Modules and Devices Mounted on the Extended Window Trim Fascia C-5
Figure C-3 User Guide Lights (UXL) on the Extended Window Trim C-7
Figure C-4 Upper Chassis Devices C-8
Figure C-5 TP31 Receipt Printer C-10
Figure C-6 TP20 Form Printer C-11
Figure C-7 Passbook Printer C-12
Figure C-8 Cash Dispenser Module -Upper Unit C-13

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Figure C-9 Upper Chassis Touch Points C-15
Figure C-10 More Upper Chassis Touch Points C-17
Figure C-11 Safe Touch Points With RM4V Recycling Module C-18
Figure C-12 More Safe Touch Points With RM4H Recycling Module C-19
Figure C-13 More Safe Touch Points with CMD-V6C C-20
Figure C-14 More Safe Touch Points with CMD-V6A C-21
Figure C-15 Accessing the TP20 Form Printer C-22
Figure C-16 Passbook Printer C-23

List of Tables

Table 3-1 Device Usage 3-4
Table 3-2 Functions of the On/Off button 3-23
Table 3-3 Dimensions of the Cassette 3-32
Table 3-4 Weight of the Cassette 3-32
Table 3-5 Media Accommodated by the Cassette 3-33
Table 3-6 Media Capacity of the Recycling Cassette 3-33
Table 3-7 Dimensions of the Supply Cassette 3-46
Table 3-8 Weight of the Cassette 3-46
Table 3-9 Media Accommodated by the Cassette 3-46
Table 3-10 Media Capacity of the Supply Cassette 3-46
Table 3-11 Media Capacity of the Retract/Reject Cassette 3-46
Table 3-12 Dimensions of the Documents 3-50
Table A-1 Related Hardware Documentation A-1
Table B-1 Electrical Characteristics B-1
Table B-2 System Conditions B-1
Table B-3 Installation Specifications B-2
Table B-4 Plinth Weights B-2
Table B-5 Effective Power and Heat Output B-3
Table B-6 Mechanical Environmental Conditions B-3
Table B-7 Environmental Conditions B-3
Table C-1 Device Usage C-4
Table C-2 Passbook Printer Types C-12
Table C-3 Related Customer Hardware Documentation C-24
Table C-4 Electrical Characteristics C-25
Table C-5 System Conditions C-25
Table C-6 Installation Specifications C-26
Table C-7 Plinth Weights C-26
Table C-8 Effective Power and Heat Output C-27
Table C-9 Mechanical Environmental Conditions C-27
Table C-10 Environmental Conditions C-27

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1 Introduction

1.1 Using this Manual

This manual provides the following information:

- A description of devices used in the system (*Section 3*)
- Options (*Section 4*)
- Accessing the upper chassis and safe (*Section 5*)
- Cleaning the exterior of the system (*Section 6*)
- Related documentation (*Appendix A*)

For information about the Advanced Upper Cabinet and Extended Window Trim System (*Appendix C*).

Refer to the operator manual for the individual modules listed in *Appendix A* for more information.

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2 Safety

2.1 Observing Safety Precautions

General Safety Precautions

Strictly observe the following safety precautions when servicing the system. By following these precautions, you can reduce the risk of equipment damage, severe personal injury, or death.

⚠ WARNING

You must observe the following precautions when servicing the system to avoid risk of death, severe personal injury, or equipment damage:

- Do not wear loose clothing or jewelry that can get caught in the equipment.
- Use caution to prevent long hair from getting caught in the equipment.
- Never insert screwdrivers, pens, or other instruments into any system device (unless you are expressly instructed to do so in this document). Severe bodily injury, death from electrical shock, or equipment damage can result.
- Always turn off the system before removing or installing devices.

2.2 General safety precautions for the system

This system complies with the relevant safety regulations for information processing equipment.

⚠ NOTE

Read this entire manual carefully in order to obtain a thorough knowledge with respect to the system and the components, in addition to their operation and maintenance.

Operate the system and the components correctly in accordance with this manual in order to avoid injuries and damage to the plant.

Keep this manual available and consult it for guidance when you are unsure about how to carry out one or another of the procedures.

⚠ WARNING

Risk of impact

Be careful not to injure your head when the control panel or rear door is opened.

- Move carefully when the control panel or the rear door is opened.

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DANGER

Adverse weather conditions

Make sure that no water/liquids (e.g. rain, snow etc.) gets into the open system and the exposed components, especially under adverse weather conditions, since that could pose a danger to your life.

Be sure to take suitable precautions when working on an open system (e.g. by covering components where necessary) so that fluid cannot enter the open system.

- Observe the warning and information labels on the system.
- Unless otherwise stated, grasp the components only by the green control elements when handling them.
- This system is equipped with a safety-tested power cable which must be connected to a suitable grounded socket only.
- Always hold the plug when removing the power cable. Never pull on the cable itself.
- Lay all connecting cables in such a way that they will not be stepped on or tripped over, damaged or crushed in any way.
- Have damaged power cables replaced immediately.
- Make sure that there is always free access to the electrical sockets used or to the electrical circuit-breakers of the facility installation.

DANGER

In case of an emergency (e.g. damaged cabinets, controls or power cables, liquids or foreign objects in the system) take the following steps:

Switch the system voltage-free immediately by:

- Switching off the automatic circuit breaker or removing the fuse insert from the fuse holder in the distributor box of the house installation.
- Disconnecting the plug of the power supply cable from the grounded socket in the building installation.
- Interrupting the power connection between the UPS (uninterruptible power supply) and the system (see chapter "Introduction", section "General power interruption" in the operating manual);
- For further system-specific notes, please refer to the operating manuals.
- Inform the customer service responsible for you.

- Never connect or disconnect data transmission lines during a thunderstorm.
- Always keep the system’s ventilation openings free from obstruction to ensure proper ventilation and to prevent malfunctions resulting from overheating.
- Use only accessories and extension components that have been approved by . Nonobservance can result in damage to the system or violations of regulations concerning safety, radio interference and ergonomical requirements.

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- Note that there are only safety extra-low voltage circuits (SELV circuits) if you want to feed voltage from an external source into prepared cables to install additional electronics (e. g. EMA connection).
- To clean the system only use cleaning agents approved by Diebold Nixdorf (see chapter "Cleaning, Service and Maintenance" in the operating manual).
- Components with adjustable light effects are integrated in this product. Repetition frequencies between 5 Hz and 40 Hz should be avoided as certain light frequencies or flickering light sources can cause epileptic seizures in some individuals.
  Also avoid light reflections and synchronize the cycles wherever possible. Ensure that monitors' refresh rates are as high as possible.

Repairs

⚠ DANGER

Repair work on the system or on the components may be carried out only by authorized specialist staff. Unauthorized opening of the system or repair work carried out improperly could result in considerable danger to the user. In case of noncompliance, excludes all liability.

Lithium batteries

⚠ DANGER

Danger of fire and explosion

The handling and replacement of batteries should only be performed by authorized personnel trained by .

There is a risk of fire or explosion if the batteries are handled improperly. It is therefore important to note the following points:

- Avoid short circuits
- Never recharge the battery
- Avoid temperatures above +100°C (+212°F).
- Do not attempt to open the battery by force
- Do not allow the battery to come into contact with water or fire
- The battery should only be replaced with the same or an equivalent type recommended by (see chapter “Appendix,” section “Consumables” in the operating manual). Dispose of used batteries in compliance with national regulations and the manufacturer's specifications.

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3 System Description

3.1 System Overview

This section describes the devices available on the System that are located in either the fascia, upper chassis or safe. For more information about individual devices, refer to the documents listed in *Appendix A* .

NOTE

Your system might not contain all the devices described in this section. Some devices are optional and some devices cannot be used in combination with other devices (mutually exclusive).

The DN Series™ 450 through-the-wall, walk-up system is a rear-load system. The system dispenses cash and presents transaction records to the consumers, accepts cash and check deposits and has cash recycling capability. It is designed with a recessed fascia so that consumers can walk up to the system, view the options, and perform transactions.

Supplies are replenished and service is performed from the rear of the system.

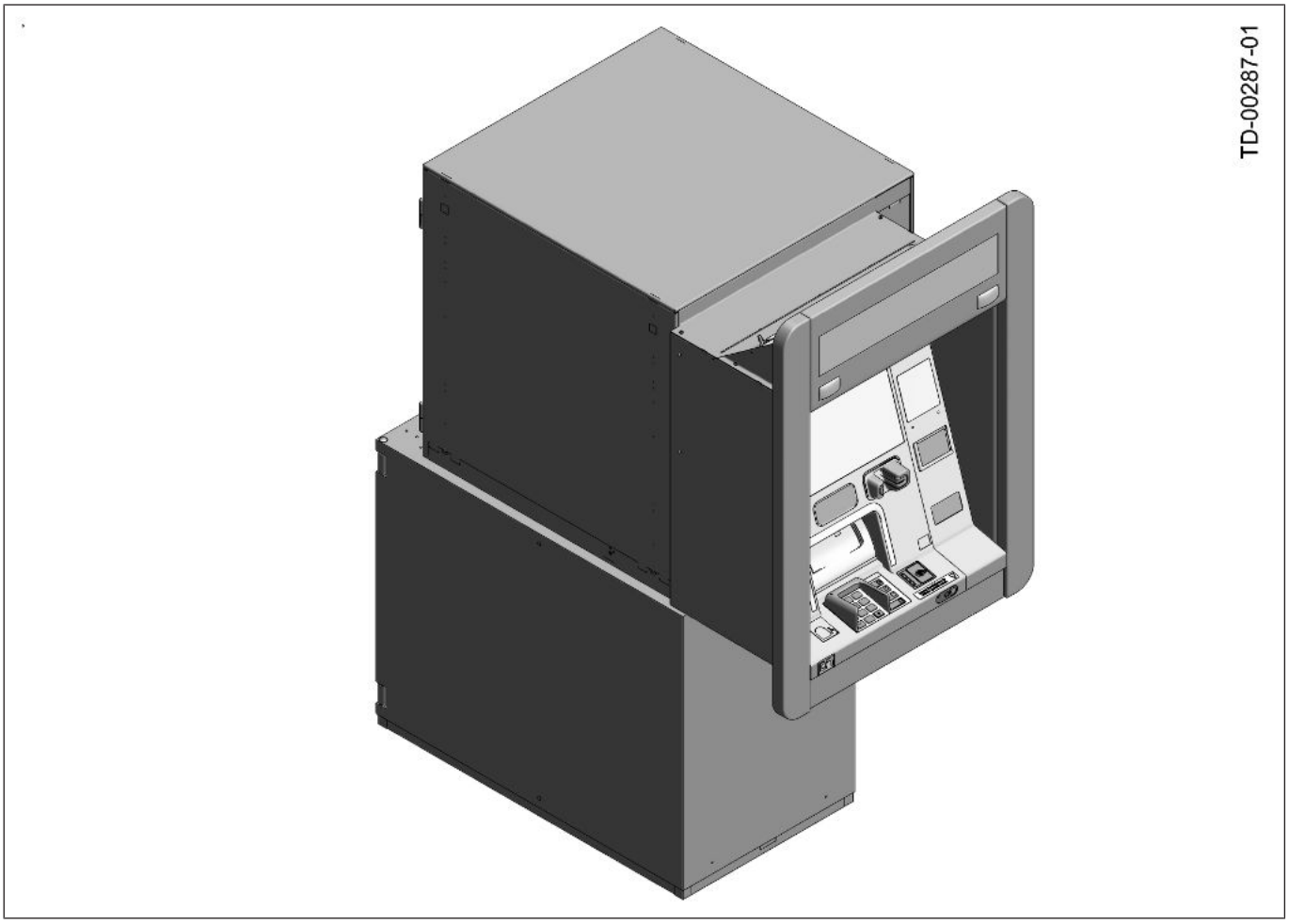

Figure 3-1: DN Series™ 450 Through-the-Wall Walk-up System

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3.1.1 Before Performing Maintenance Procedures on the System

The operator should be familiar with the following information before performing the maintenance procedures in this manual:

- The features and equipment on your system
- The service options your institution has selected for its system(s)

The system might not have all the features described in this manual. Refer to the documents listed in *Appendix A* for information about specific equipment.

Maintenance Options

Verify which service option the institution has selected before servicing the system.

⚠ WARNING

This unit has more than one power supply cord. To reduce the risk of electrical shock disconnect both power cords before servicing.

3.1.2 Maintenance Tasks

Maintenance keeps the system operational on a day-to-day basis and includes, but is not limited to, the following tasks:

- Retrieving jammed, retained or captured cards from the card reader
- Replenishing printer paper, clearing stuck paper, and replacing printer cartridges
- Removing cash that is not moving from the recycling module
- Removing cash that is not moving from the cash dispenser module
- Removing checks that are not moving from the check deposit module
- Removing stuck coins from the coin dispenser

3.1.3 Device Usage

Table 3-1 lists the devices in the system and who would generally use them. *Section 3.2*, *Section 3.3*, and *Section 3.4* contain a brief description of some of the devices.

NOTE

Some of the devices are not available in all regions.

The operator interface devices are used to perform routine servicing operations such as daily balancing, supply replenishment, and problem determination. These devices can also be used for occasional operations such as setup and problem diagnosis of the system.

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The operator maintenance interface for the system is the rear service display. The operator uses the buttons on the external control unit with the operator interface to perform routine maintenance procedures.

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Table 3-1: Device Usage

Device	Used By...	
	Consumer	Operator
Motorized card reader	X	X
Dip card reader	X	X
ActivEdge card reader	X	X
Encrypting PIN pad V8 (consumer keypad)	X	
Headphone jack (and volume control)	X	
Cash recycler	X	X
Coin dispenser	X	X
Check deposit module	X	X
Receipt printer	X	X
Journal printer		X
External control unit (system power (on/off) button)		X
Speakers	X	
Near Field Communication (NFC) contactless card reader	X	
User guide lights	X	
Rear service display		X
Safe devices (locks)		X
ID scanner (driver license)	X	X
Bar code scanner	X	X
Consumer display	X	
Biometric finger print scanner	X	
Microphone	X	
CMD-V6C cash dispenser	X	X
CMD-V6A cash dispenser	X	X

3.2 Components on the Fascia

The fascia allows the consumer to interact with the system. The consumer selects transactions, specifies amounts, receives currency or other dispensable media and receipts, and requests information using the fascia. The devices and features on the fascia either have labels that help the consumer to use the device or user guide lights to guide the consumer through the transaction.

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The location of some devices and features can vary, depending on how they are installed on the system. A typical configuration of the fascia is shown below.

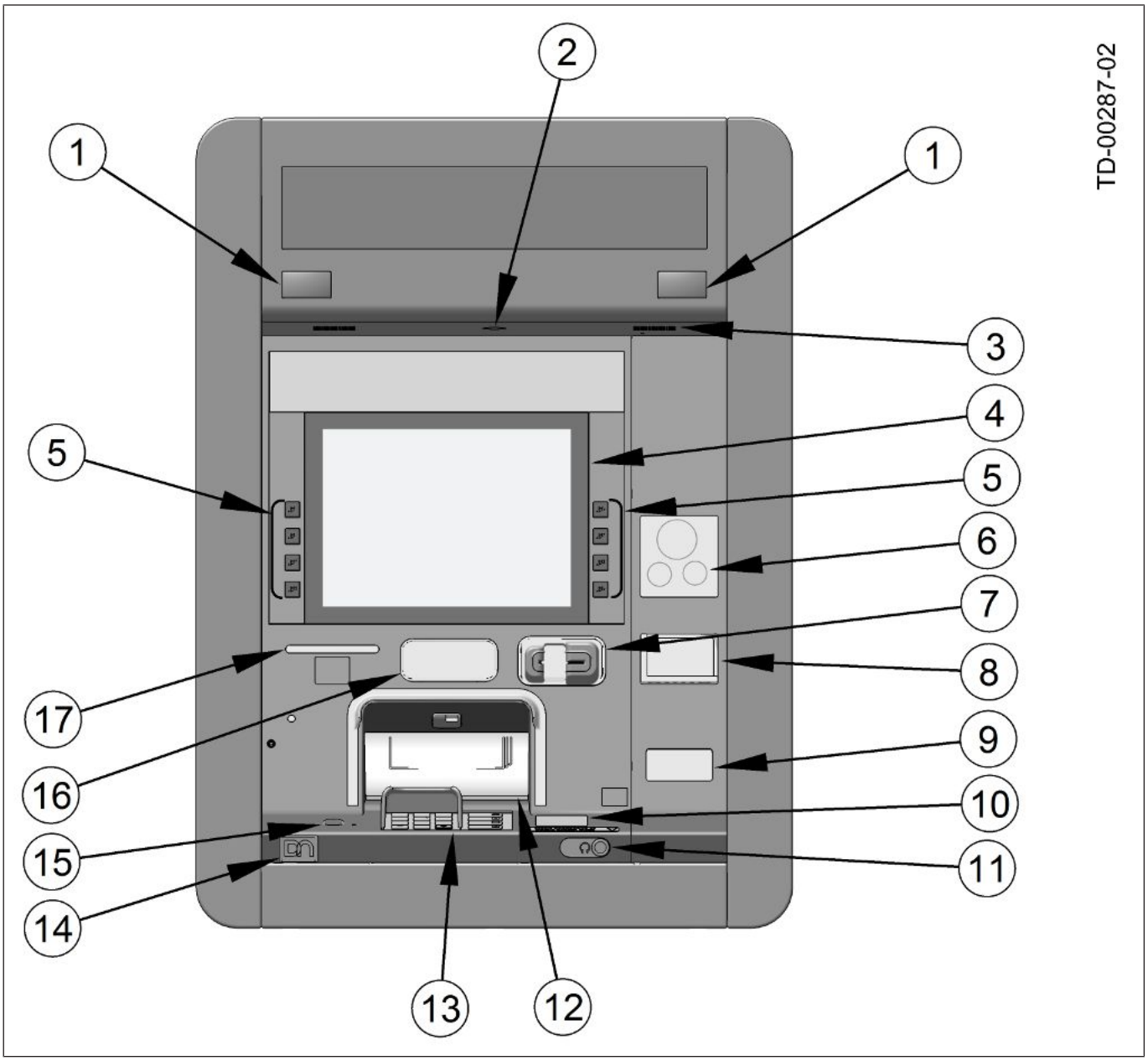

Figure 3-2: Modules and Devices Mounted on the Fascia

1	Consumer awareness mirror
2	Task light
3	Speakers
4	Consumer display (15-inch display shown)
5	Function keys
6	Consumer portrait/face camera
7	Dip card reader
7	Motorized card reader slot

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7	ActivEdge card reader slot
8	Identification card scanner
9	Coin dispenser slot
10	NFC contactless card reader
11	Headphone jack (and volume control)
12	Cash recycler slot / cash dispenser slot
13	Encrypting PIN pad (consumer keypad)
14	Bar code reader
15	Biometric finger print scanner
16	Check deposit module slot
17	Receipt printer slot

Cash Recycler / Cash Dispenser Slot

Cash and other media are presented and accepted through the cash recycler / cash dispenser slot (*Figure 3-2*).

User Guide Lights

User guide lights guide the consumer through a transaction by calling attention to the next step in the transaction. These lights can display in colors and are used by the devices shown below.

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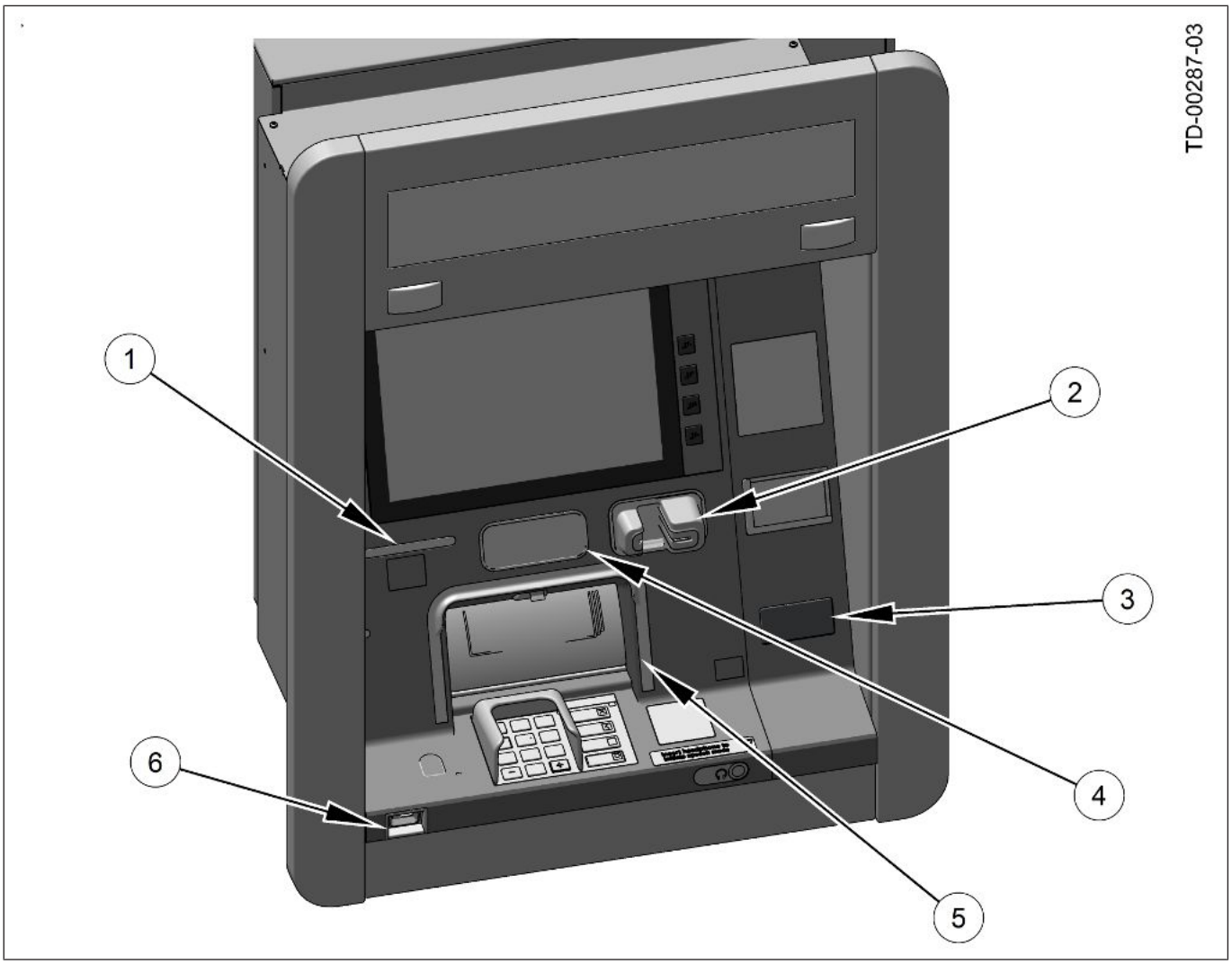

Figure 3-3: User Guide Lights

1	Receipt printer slot
2	Card reader
3	Coin dispenser
4	Check deposit module
5	Cash recycling module / Cash dispenser module
6	Bar code reader

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Biometric Fingerprint Scanner

The biometric fingerprint scanner identifies a person's fingerprint for security purposes. After a sample is taken, access to a system is granted if the fingerprint matches the stored sample.

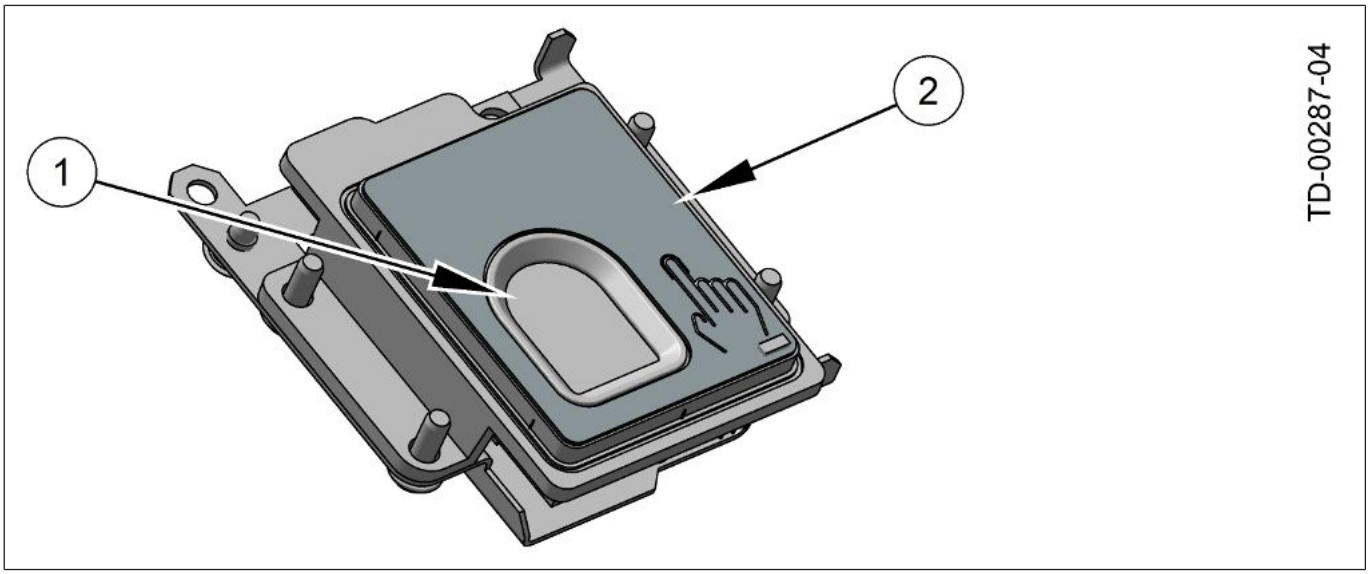

Figure 3-4: Biometric Fingerprint Scanner

1	Glass surface of the fingerprint scanner
2	Housing of the fingerprint scanner

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3.3 Components of the Upper Chassis

The location of some devices and features can vary, depending on how they are installed on the system. A typical configuration of the upper chassis is shown in *Figure 3-5*.

NOTE

Your system might not contain all devices described in this section. Some devices are optional and some devices cannot be used in combination with other devices (mutually exclusive combinations).

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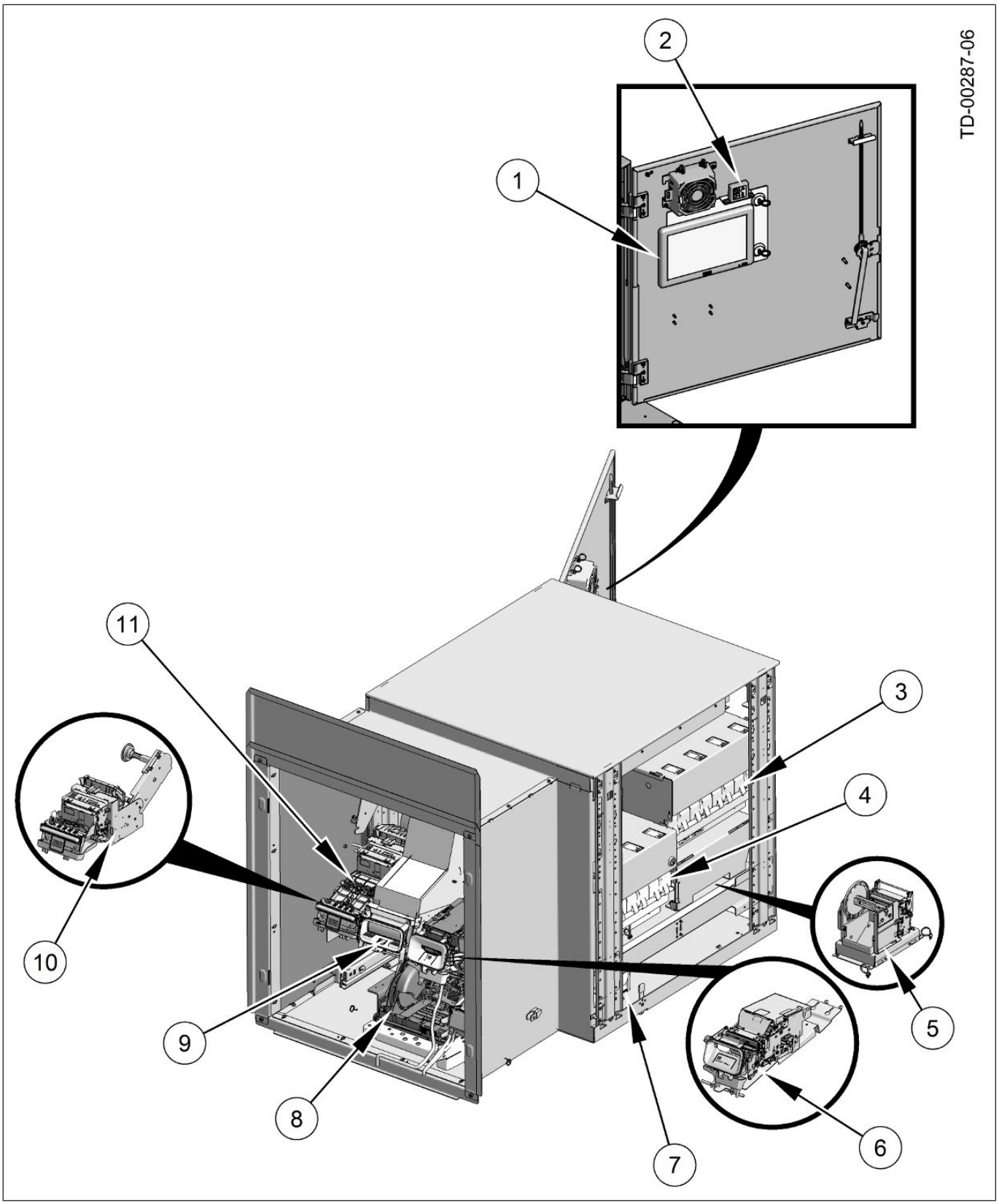

Figure 3-5: Upper Chassis Devices

1	Rear service display
2	External control unit
3	Eight hopper coin dispenser

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4	Four hopper coin dispenser
5	Journal printer
6	Motorized card reader or ActivEdge card reader
7	Heater
8	Cash recycler module (upper unit); CMD-V6C cash dispenser (upper unit); CMD-V6A cash dispenser (cash recycler module shown)
9	Check deposit module
10	TP30 receipt printer
11	TP31 receipt printer

Cash Recycler - Upper Unit

The cash recycler upper unit is located in the upper chassis directly above the cash recycler lower unit.

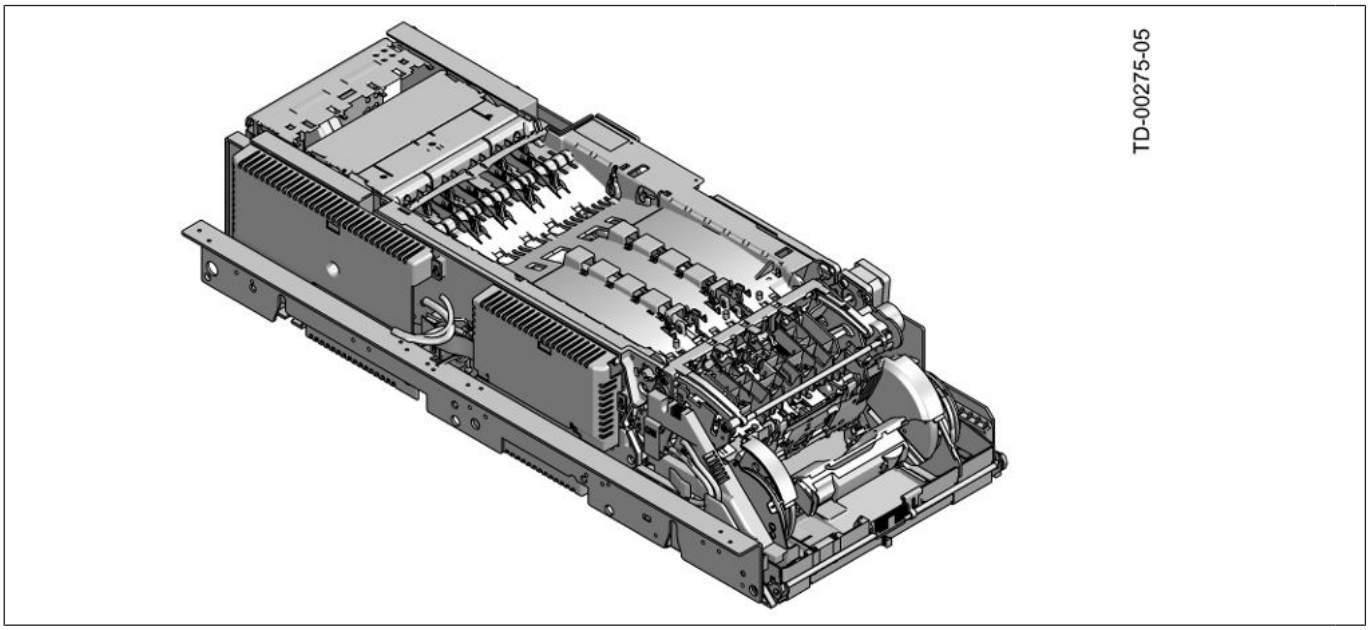

Figure 3-6: Cash Recycler Upper Unit

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Check Deposit Module

The consumer deposits checks through a unique slot in the fascia. See *Figure 3-2*.

The consumer can enter checks individually or as a stack. The check deposit module is designed to accept a stack of up to 30 checks and to provide the banking network with MICR data and image of each check. Checks can be inserted face up or face down with the short edge first for proper orientation.

For more information, refer to the *DN Series™ Check Deposit Operating Manual* (Order Number 0175033061).

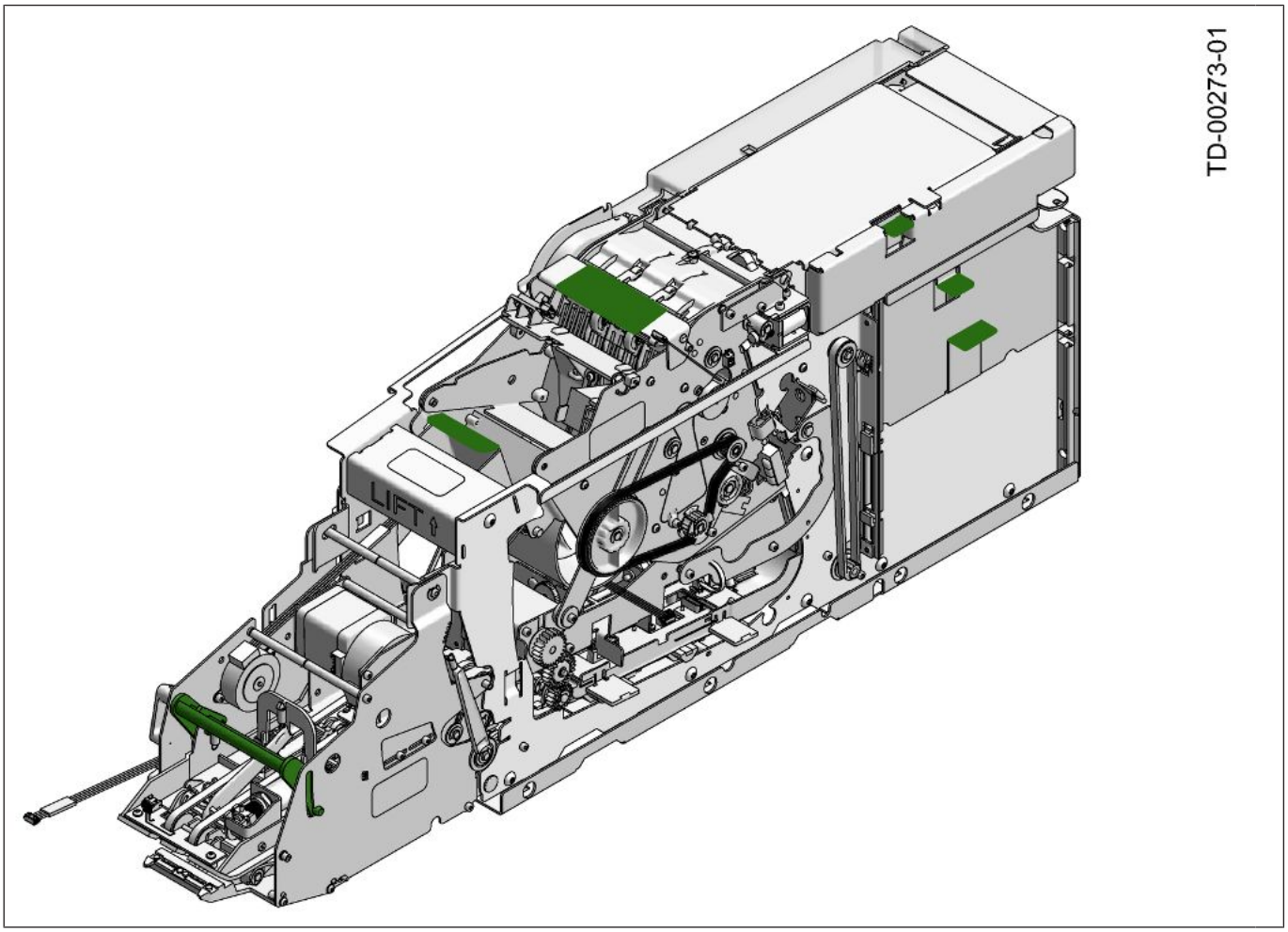

Figure 3-7: Check Deposit Module

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Cash Dispenser Module - Upper Unit

The cash dispenser upper unit is located in the upper chassis directly above the cash dispenser lower unit.

The CMD-V6C or CMD-V6A cash dispenser module delivers media (such as currency) to the consumer. The media is drawn from the supply cassettes and transported to an output tray behind the fascia of the system, where the consumer can receive it once the shutter is opened. If the media is too mutilated or wrinkled, or if multiple notes are picked at the same time, the notes go to the retract cassette instead of being delivered to the consumer.

Refer to the following manuals for more information:

- *DN Series™ CMD-V6C Cash Dispenser Operating Manual* (Order Number 01750342709)
- *DN Series™ CMD-V6A Cash Dispenser Operating Manual* (Order Number 01750339307)

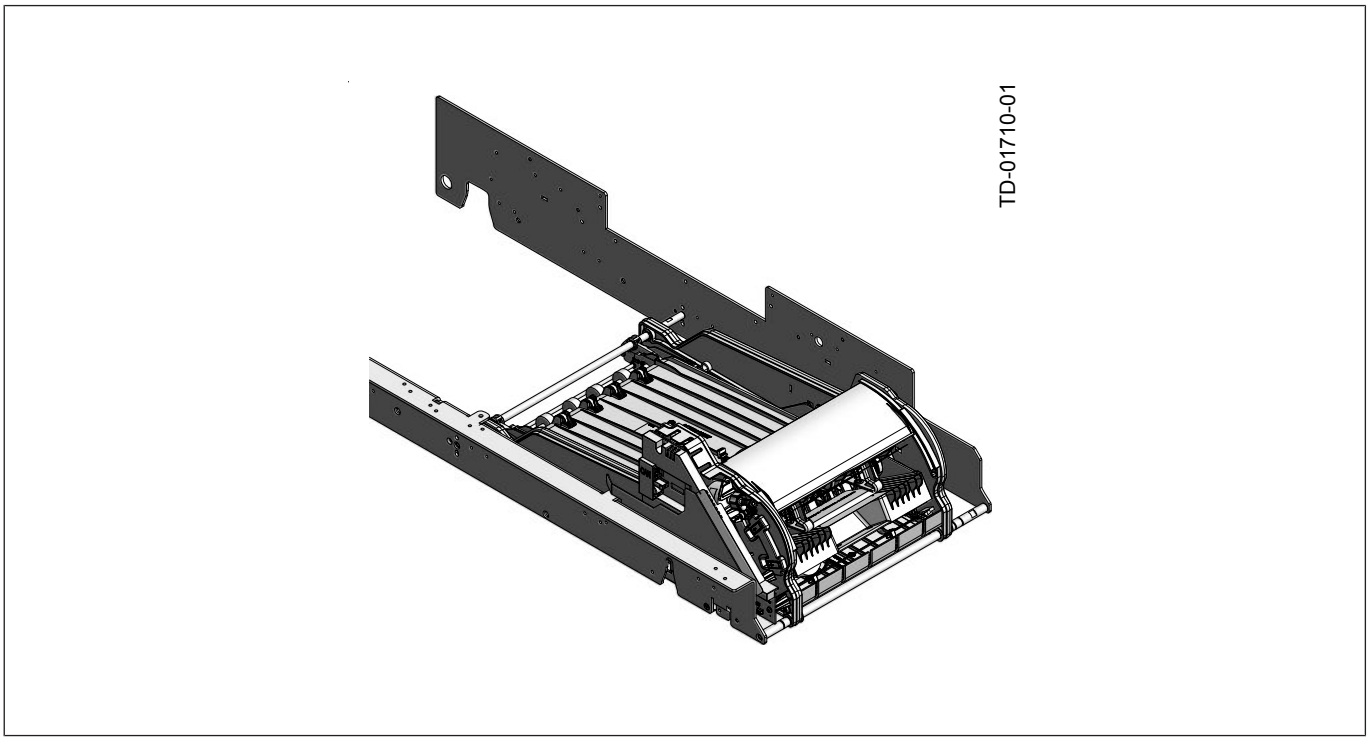

Figure 3-8: Cash Dispenser Module Upper Unit

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Coin Dispenser

The system may have a coin dispenser that dispenses coins in four different denominations. The coin dispenser may have four or eight coin hoppers, as shown below.

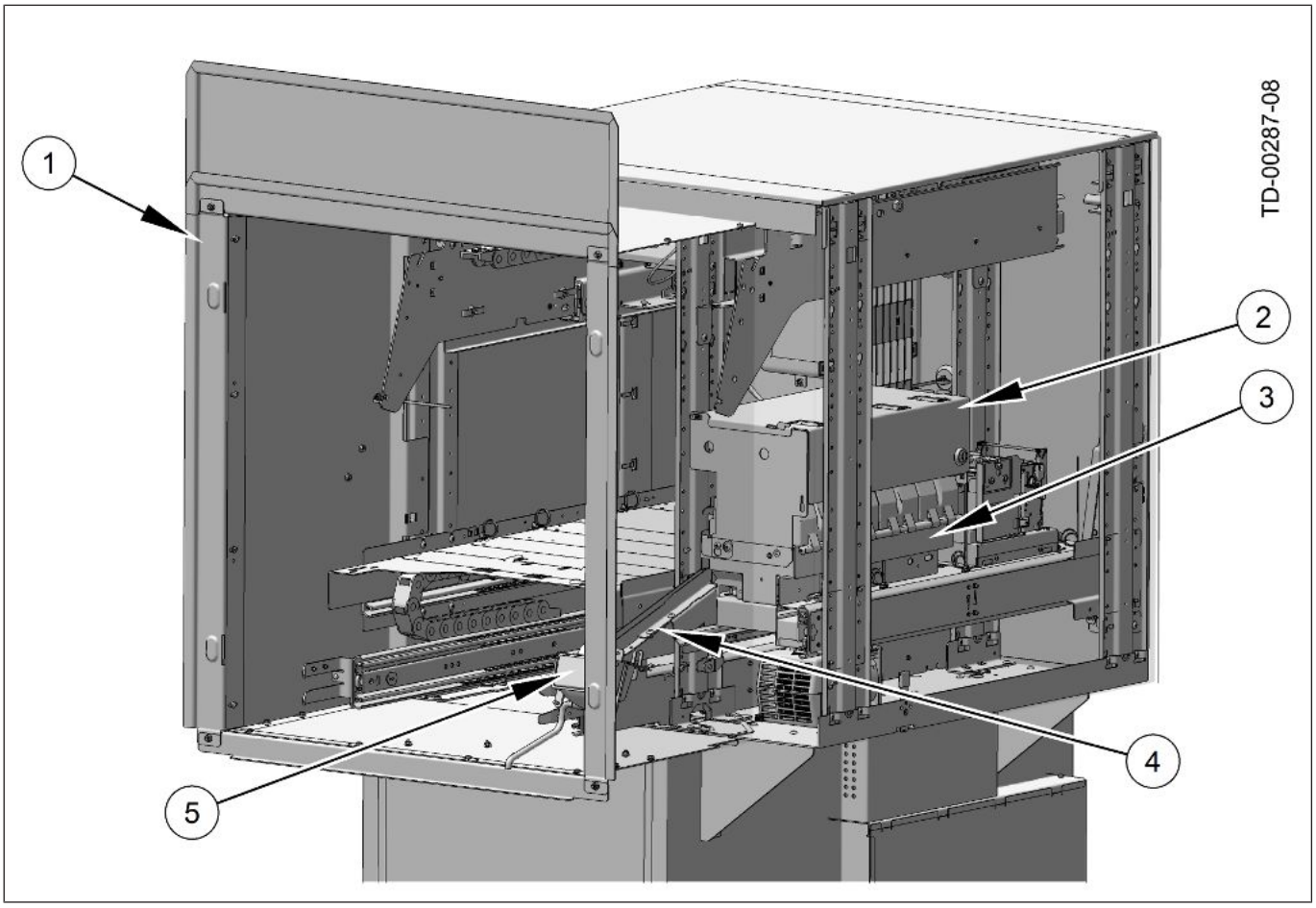

Figure 3-9: Four Hopper Coin Dispenser

1	Upper chassis
2	Four coin hoppers
3	Coin dispenser
4	Coin chute
5	Coin slot

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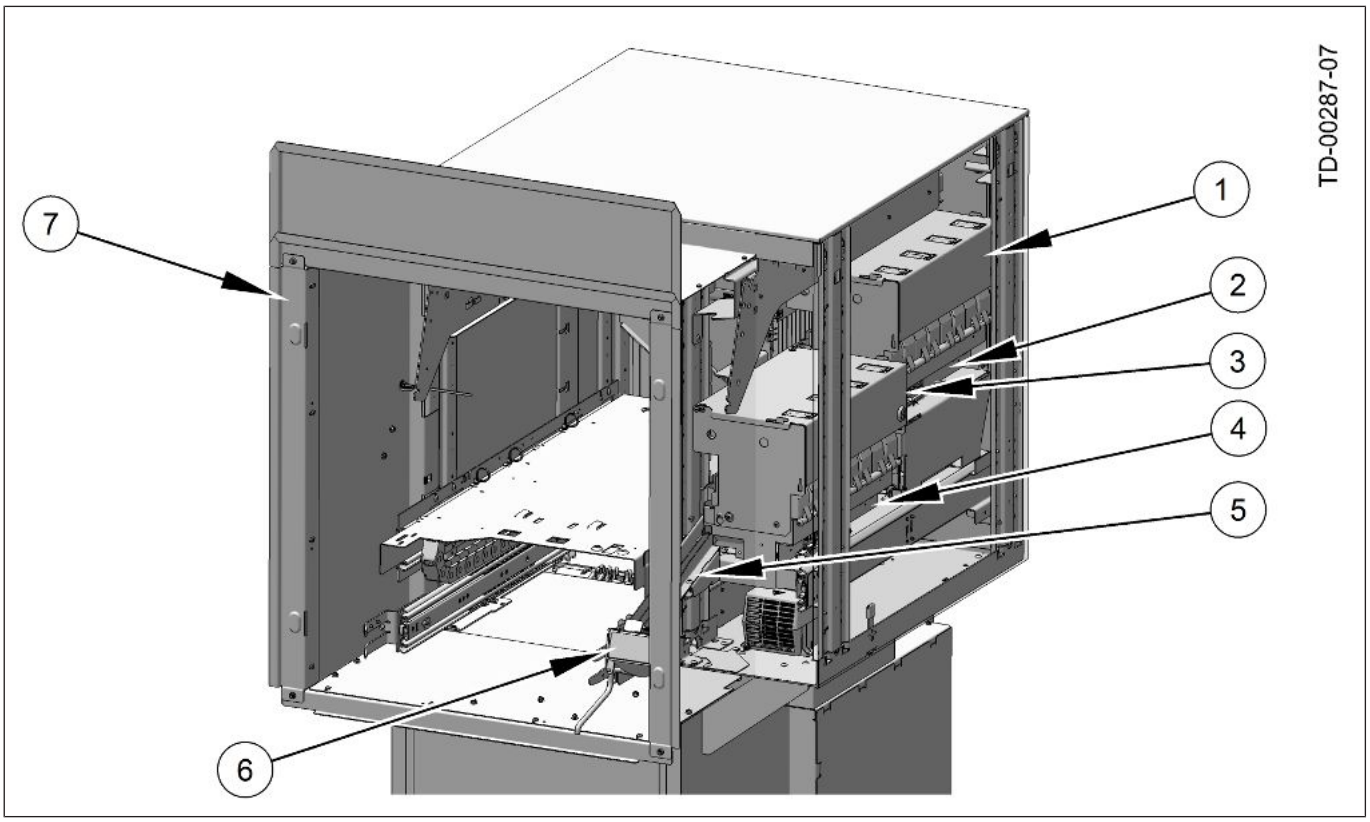

Figure 3-10: Eight Hopper Coin Dispenser Module

1	Coin hoppers (eight)
2	Coin dispenser
3	Coin hoppers (four)
4	Coin dispenser
5	Coin chute
6	Coin slot
7	Upper chassis

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TP29 Journal Printer

The TP29 journal printer can process paper rolls which have been coated on their upper side.

Refer to the *Journal Printer TP29 Operator Manual* (Order Number 01750333697).

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TP30 Receipt Printer

The TP30 receipt printer is a compact, built-in printer of modular design with a thermal printing unit, pull-out paper holder, integrated cutter and presenter. It does not have retract capabilities. The receipt printer generates documents according to user software specifications, for example receipt slips.

The paper path is controlled by several paper sensors. The printer is equipped with sensors that indicate the remaining quantity of paper (weekend supply) and the end of the paper supply. The paper supply can therefore be monitored with the user software. The TP30 can process paper rolls with different diameters and with paper coated on the upper side or the lower side. Control marks can be evaluated.

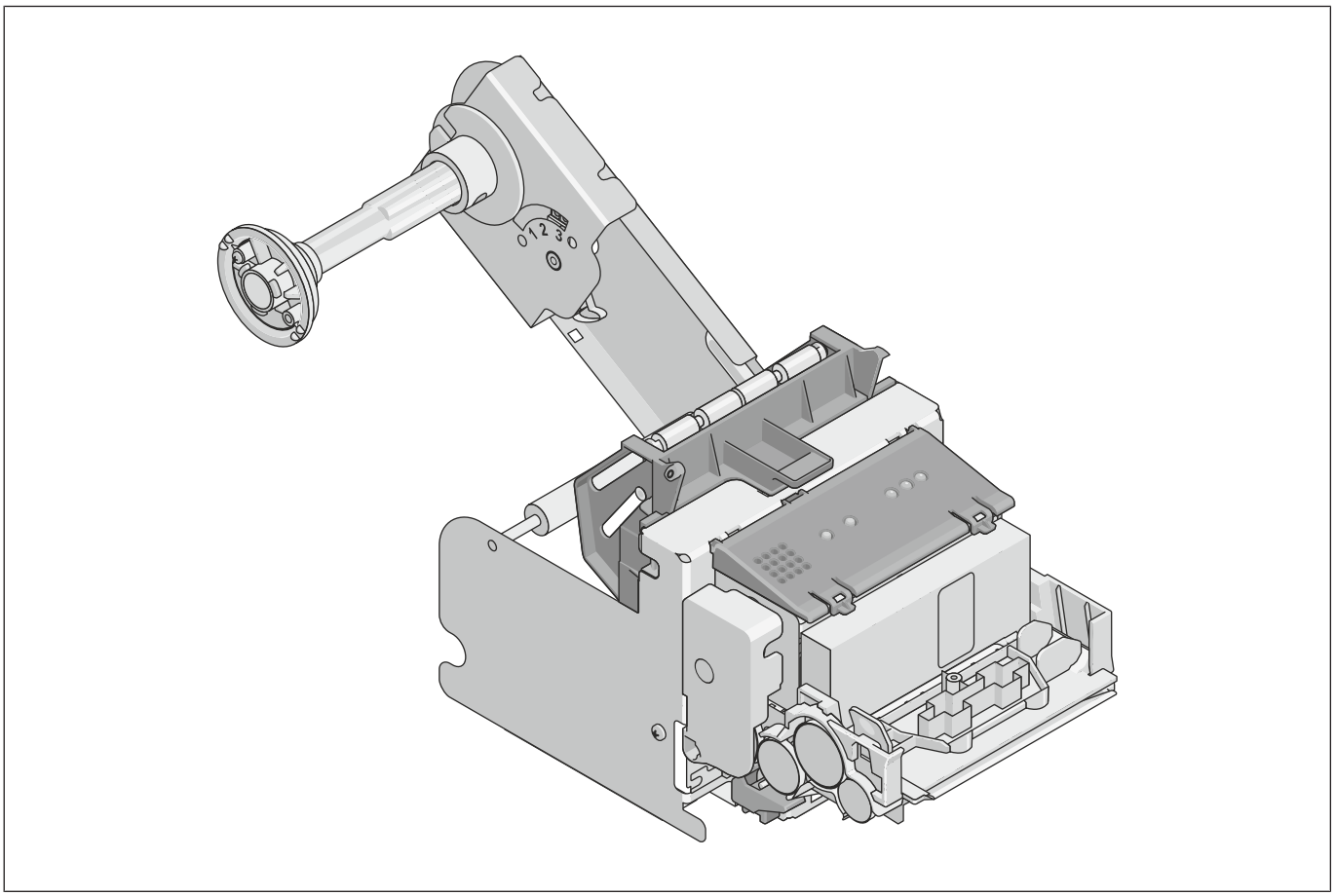

Figure 3-11: TP30 Receipt Printer

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TP31 Receipt Printer

The receipt printer TP31 is compact and modular printer with a thermal printing unit, an integrated cutter and a presenter. The receipt printer TP31 is available in two versions:

- TP31 (without retract function)
- TP31R (with retract function)

The receipt printer generates documents according to user software specifications, e.g. receipt slips. The paper path is controlled by several paper sensors. The printer is equipped with sensors which indicate the remaining quantity of paper (weekend supply) and the end of the paper supply. The paper supply can thus be monitored with the user software. The TP31 can process paper rolls coated on the top as well as on the bottom. Control marks can be evaluated. For the TP31R, the retract function for receipts that have not been withdrawn is configurable.

Refer to the *TP31R Receipt Printer Operating Manual* (Order Number 01750333705).

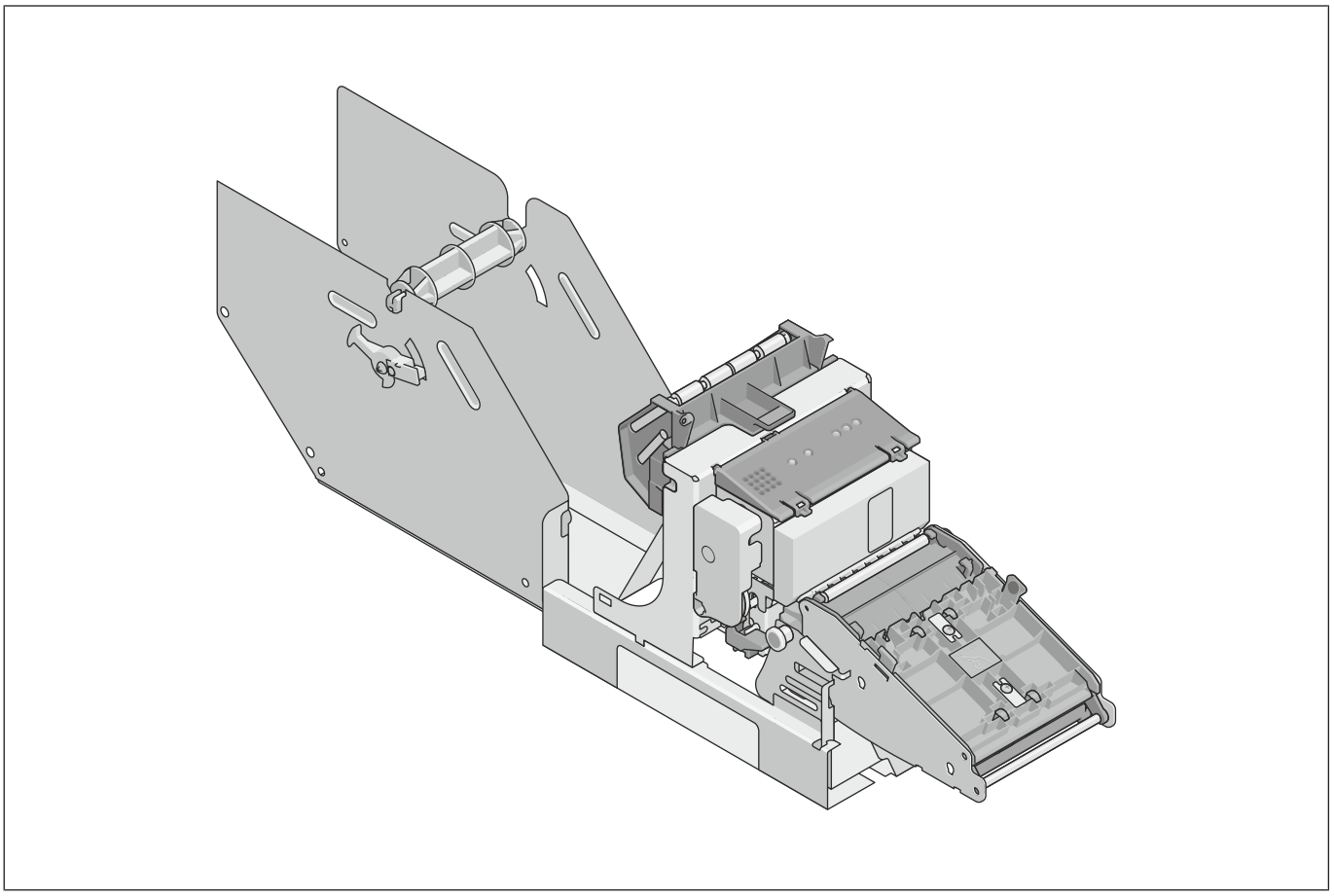

Figure 3-12: TP31 Receipt Printer

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System Door Open - Rear Service Display with Touch Screen

The 10.1-inch rear service display with touch screen supplies information for routine maintenance, balancing, and monitoring supplies and maintenance services. The display can be viewed with the rear door of the upper chassis open. The display also provides status information about the system. Refer to *Section 5.4* for information about accessing the rear service display.

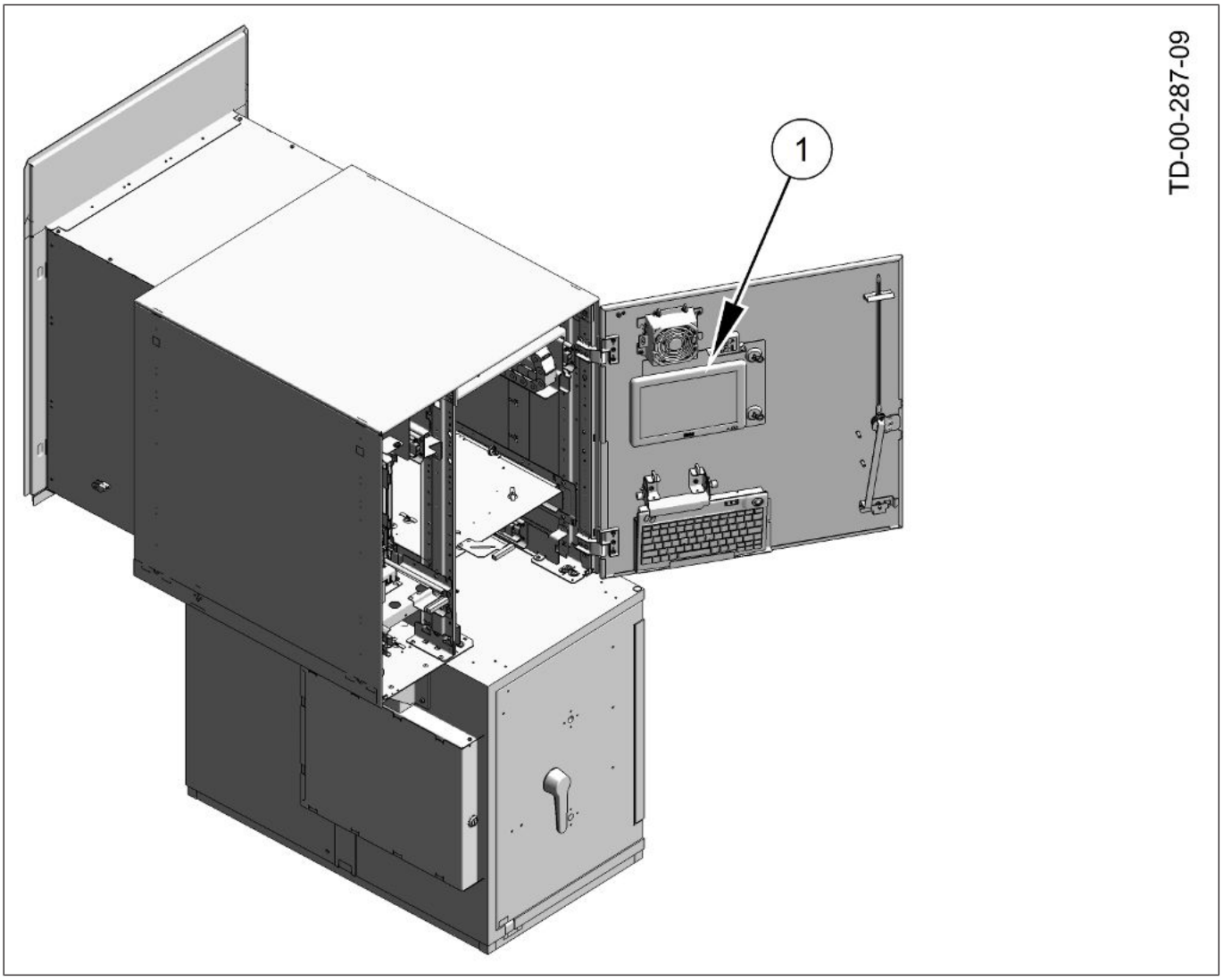

Figure 3-13: System Door Open - Rear Service Display with Touch Screen

1	Rear service display with touch screen with system door open

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System Door Closed - Rear Service Display with Touch Screen

The 10.1-inch rear service display supplies information for routine maintenance, balancing, and monitoring supplies and maintenance services. The display can be viewed with the rear door of the upper chassis closed. Procedures are performed through the window of the rear door. The display also provides status information about the system. Refer to *Section 5.4* for information about accessing the rear service display.

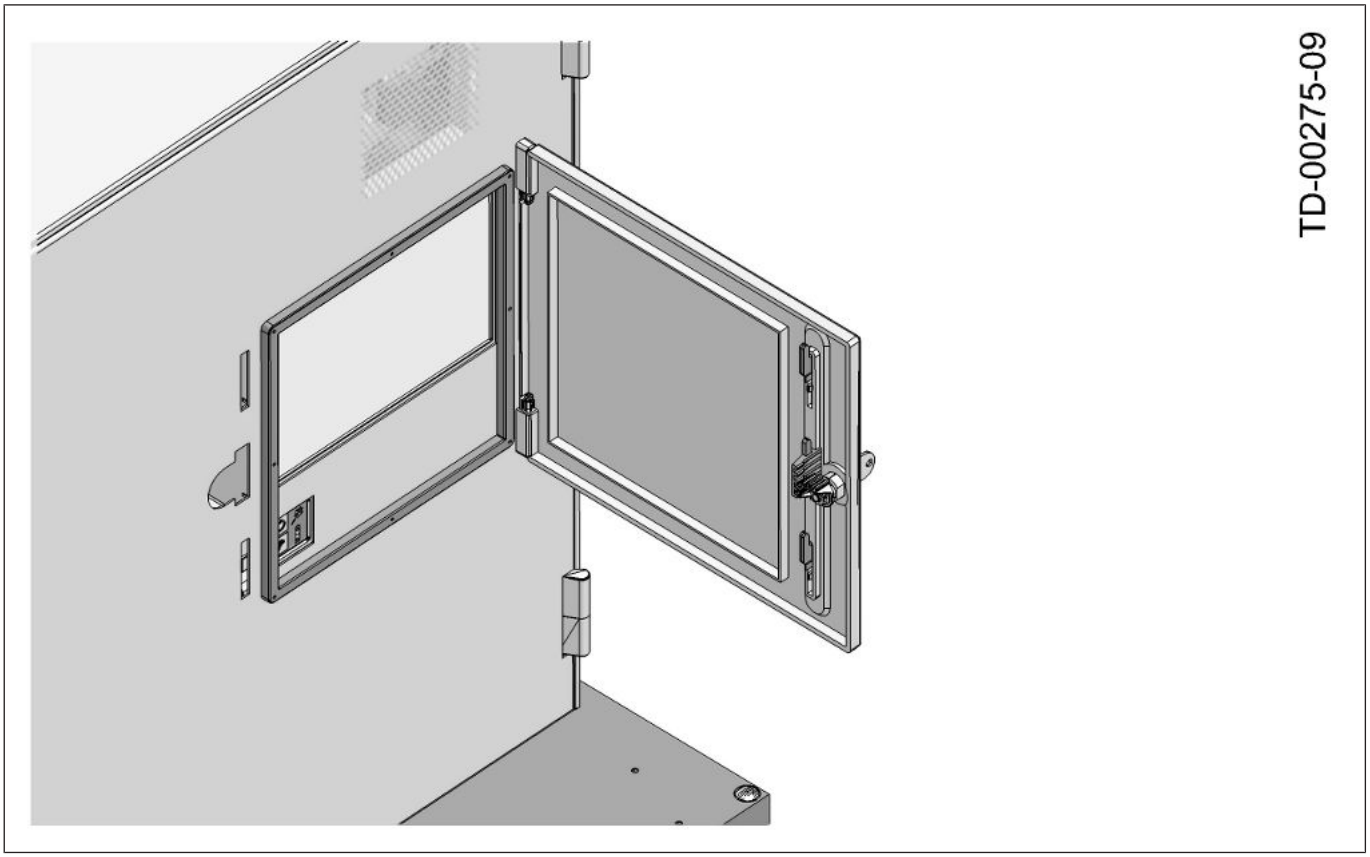

Figure 3-14: System Door Closed - Rear Service Display with Touch Screen

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Heater

The heater is mounted on top of the safe near the fascia.

During cold weather, the heater helps maintain the operating temperature in the fascia area of the system.

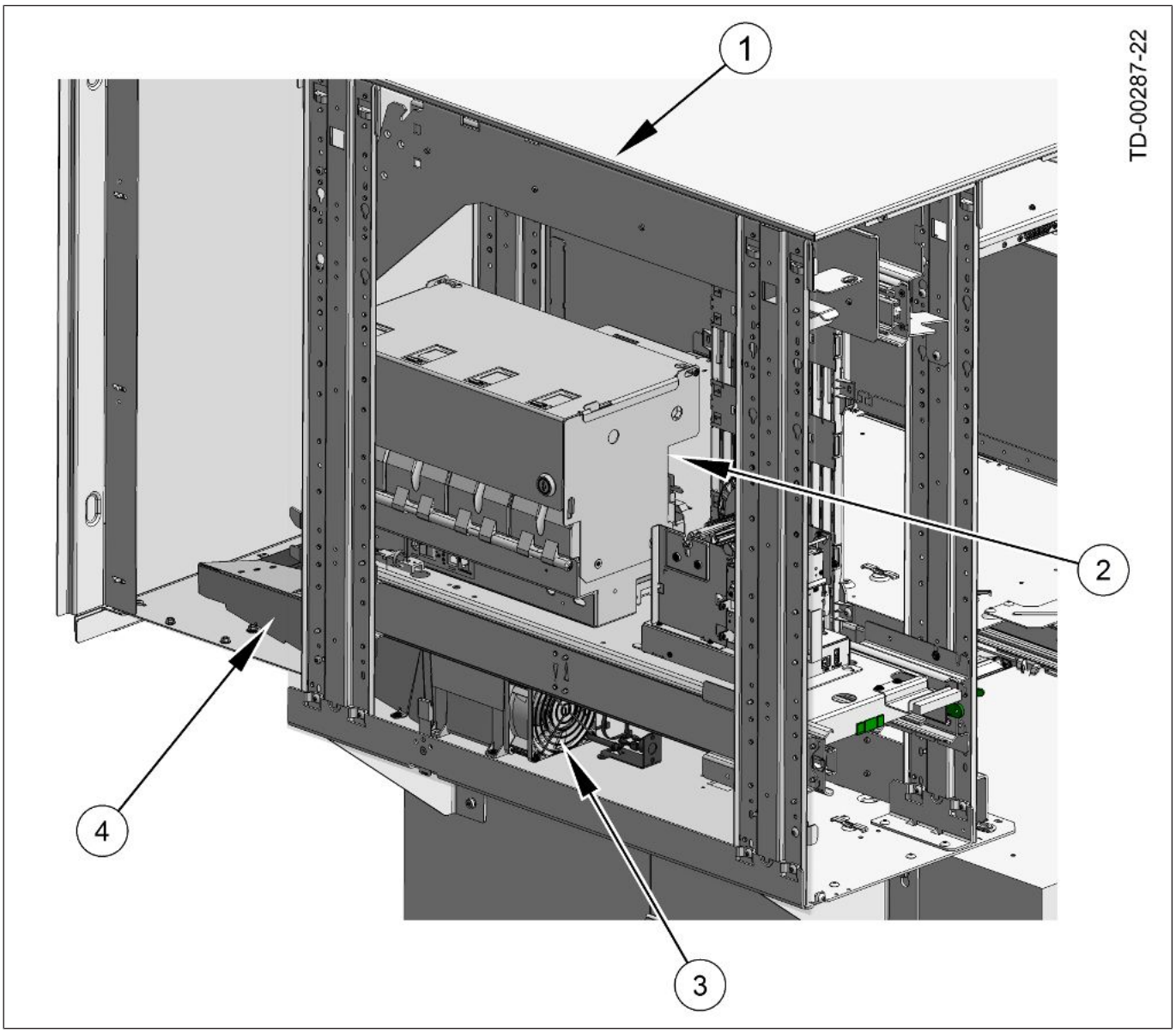

Figure 3-15: Heater

1	Upper chassis
2	Coin dispenser
3	Heater
4	Heat duct

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3.3.1 External Control Unit

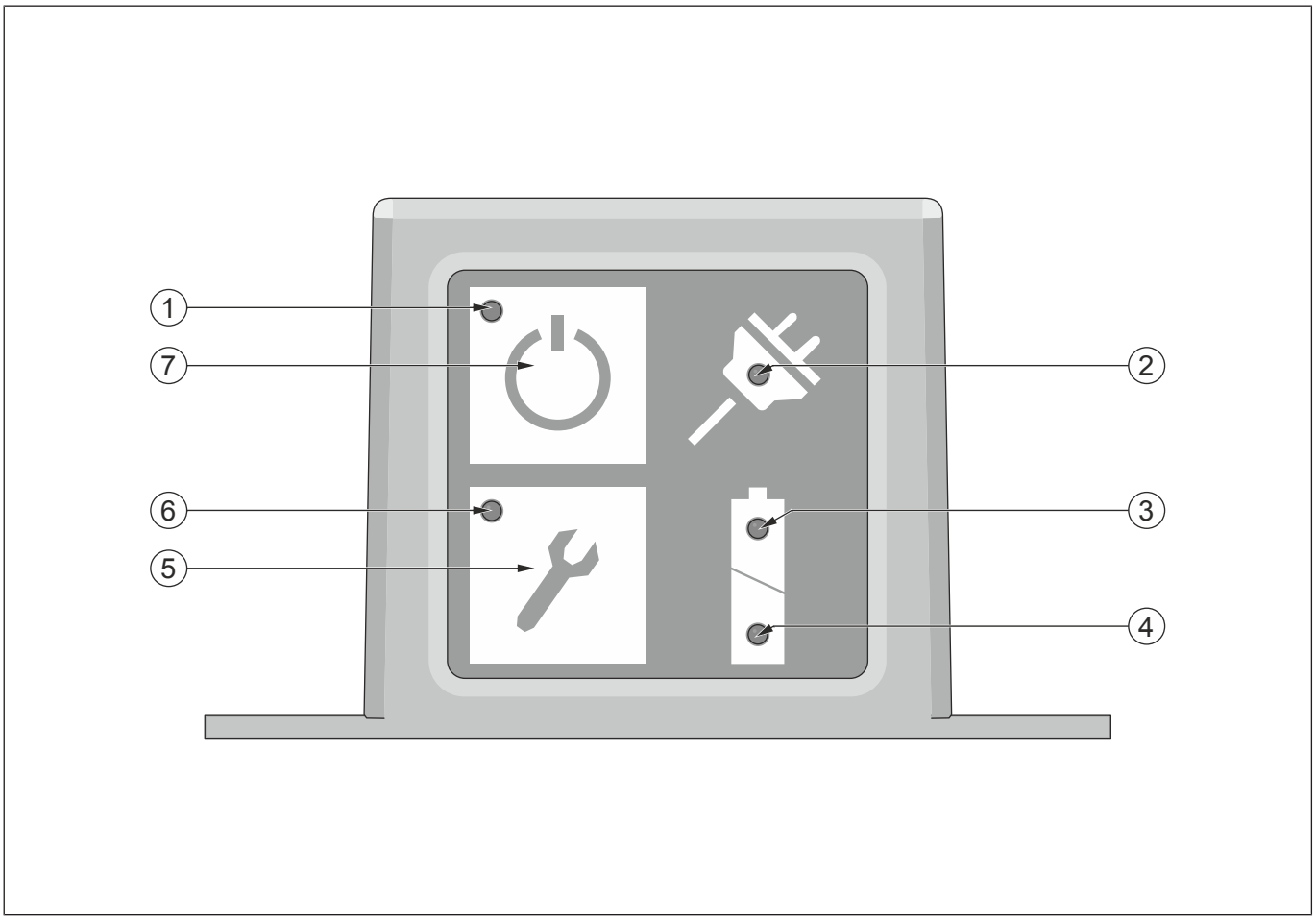

Figure 3-16: External Control Unit - Overview

1	On / Off LED	5	Service button
2	Main voltage LED	6	Service LED
3	Charging status LED (full)	7	On / Off Button
4	Status UPS LED		

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3.3.1.1 Functions of the External Control Unit

On / Off Button

The On / Off button switches the system on and off.

The start-up/ shutdown of the system may take a few seconds. A possibly still running transaction (e.g. payment to a customer) is completed before the system is completely shut down.

Table 3-2: Functions of the On/Off button

Action	Description
Push-button operation (with On/Off Led switched on)	System shuts down in a controlled way
Push-button operation (with On/Off Led switched off)	System starts
Push-button operation (longer than 5 seconds)	Forced shutdown (system shuts down uncontrolled)

Service button

The Service button is used to call the product-specific software (T/SOP) of the system. Use T/SOP to perform system and module maintenance procedures.

Main voltage LED

The main voltage LED indicates the operating status of the UPS.

- If the LED is green, the system is operated via the normal main supply.
- If the LED lights up yellow, UPS operation is active.

Battery Status Indicator

The battery status indicator consists of two LEDs, which can indicate different battery statuses (see *Figure 3-16*).

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3.3.1.2 LED Codes

3.3.1.2.1 Battery Status Indicator (with active Main Power Supply)

State of charge LED (full)	Status UPS LED	Description
OFF	OFF	Indicates that no battery backup (UPS) is present.
ON	OFF	Indicates that the UPS is present and the battery is fully charged.
OFF	ON	Indicates that the UPS is present and the battery is being charged.
OFF	FLASHING	Indicates that the UPS is present and the batteries are severely discharged. Batteries are being charged.

3.3.1.2.2 Battery Status Indicator (with active Battery Power Supply)

State of charge LED (full)	Status UPS LED	Description
ON	OFF	Battery has more than 40% capacity remaining.
OFF	ON	Battery has 40% or less capacity remaining.

3.3.1.2.3 Main Voltage and On / Off LED

Main voltage LED	On / Off LED	Description
OFF	OFF	Main voltage off, battery charger off or not connected
ON	OFF	Main voltage switched on, system switched off
ON	FLASHING	Main voltage switched on, system starts or shuts down
ON	ON	Main voltage switched on, system ready for operation
OFF	ON	System runs in battery mode
OFF	FLASHING	System runs in battery mode, System shuts down

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3.3.1.2.4 Service LED

Service LED	Description
ON	T/SOP is active, or emulated switch is in service position.
FLASHING	T/SOP is active, 36V and/or 25V are switched off
OFF	T/SOP is inactive and emulated switch is in "in operation" position.

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3.4 Components in the Safe

The following devices are installed inside the safe of the system (for example, see *Figure 3-17* and *Figure 3-18*). Some devices are optional and may not be installed in your system.

- Recycling module lower module (vertical) (*Section 3.4.1*)
- Recycling module recycling cassettes (vertical) (*Section 3.4.2*)
- Recycling module All-In cassette with multi-purpose bin (vertical) (*Section 3.4.3*)
- Recycling Module, Generation Four Vertical (RM4V) Cassette Physical Description (*Section 3.4.4*)
- Recycling module lower module (horizontal) (*Section 3.4.5*)
- Recycling module recycling cassettes (horizontal) (*Section 3.4.6*)
- Recycling module All-In cassette (horizontal) (*Section 3.4.7*)
- Recycling Module, Generation Four Horizontal (RM4H) Cassette Physical Description (*Section 3.4.8*)
- CMD-V6C cash dispenser lower module (*Section 3.4.9*)
- CMD-V6C cash dispenser supply cassette (*Section 3.4.10*)
- CMD-V6C cash dispenser reject/retract cassette (*Section 3.4.11*)
- CMD-V6C cassette physical description (*Section 3.4.12*)
- CMD-V6A Cash Dispenser Lower Module (*Section 3.4.13*)
- CMD-V6A Cash Dispenser Supply Cassettes (*Section 3.4.14*)
- CMD-V6A Divert Bin (*Section 3.4.15*)
- CMD-V6A Cassette Physical Description (*Section 3.4.16*)
- Safe lock (*Section 3.4.17*)
- System switches (*Section 3.4.18*)
- Alarm sensors (*Section 3.4.19*)
- Seismic detectors (*Section 3.4.20*)
- Third party alarms (*Section 3.4.21*)
- Heat thermostat (*Section 3.4.22*)
- Optional remote status indicator (*Section 4*)

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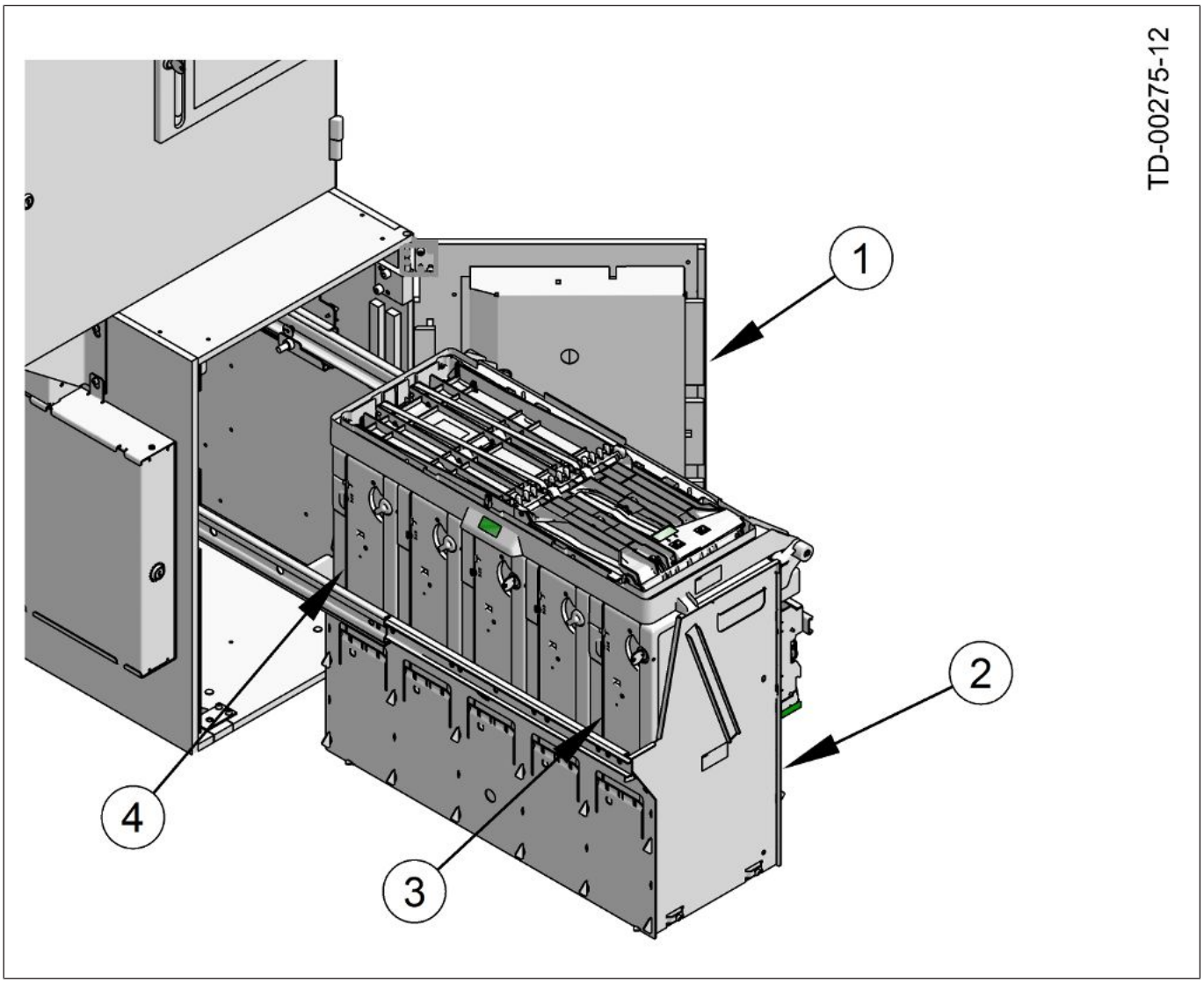

Figure 3-17: Devices Located in the Safe (with RM4V)

1	Safe lock
2	Recycling module lower unit (vertical)
3	Recycling module recycling cassettes
4	Recycling module All-In cassette with multi-purpose bin

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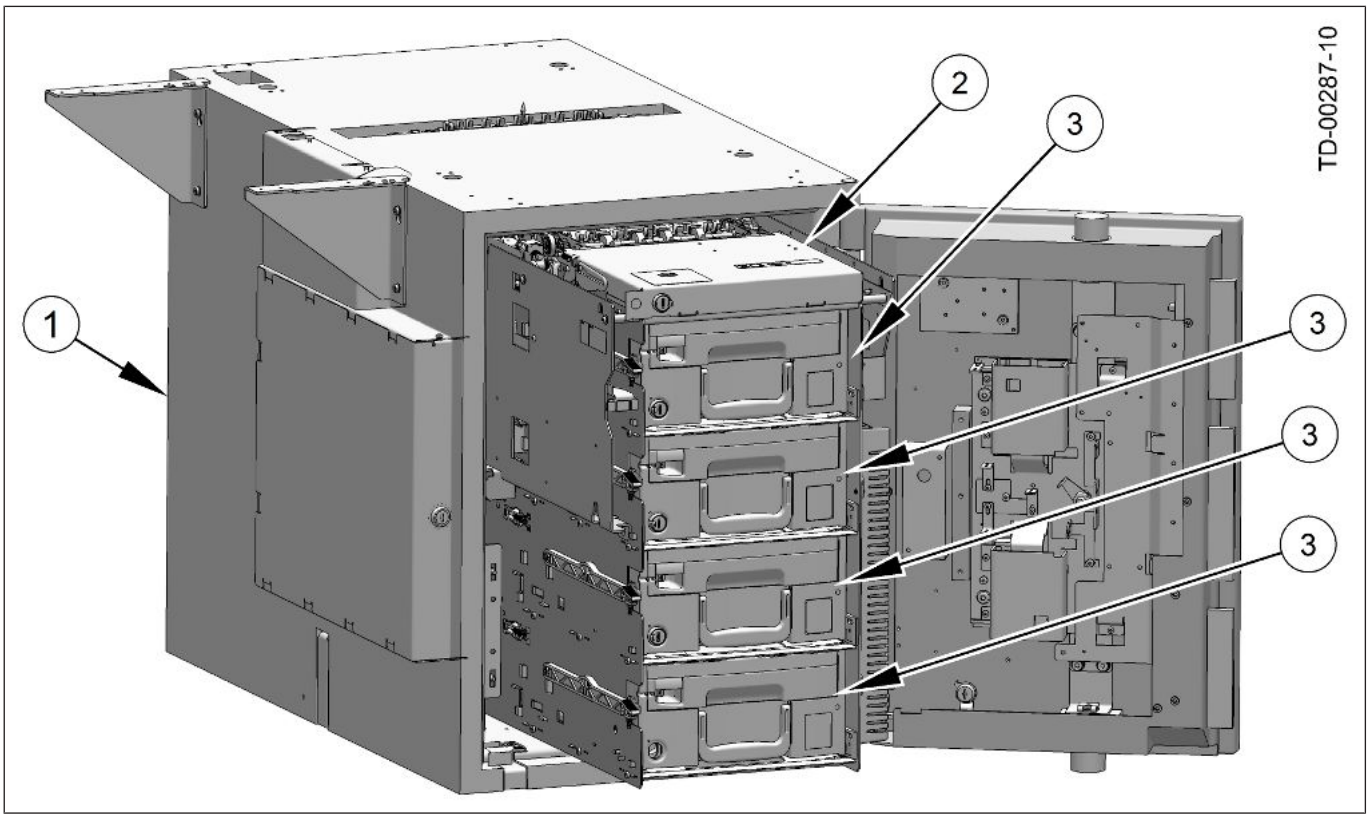

Figure 3-18: Devices Located in the Safe (RM4H)

1	Safe
2	Recycling module lower unit (horizontal)
3	Recycling module recycling cassettes

3.4.1 Recycling Module RM4V, Lower Module Overview

The lower module of the RM4V recycling module is a recycling module for bank notes integrated into the system.

The lower module of the RM4V deposits media into cassettes and dispenses media to the consumer after the network or controller processes a consumer's request. During the deposit cycle the system denominates, validates, counts and stores the media in the recycle cassettes. The media is drawn from the cassettes and transported to the system's withdrawal area. If the media is too mutilated or crumpled to dispense, or if a multiple pick occurs, the RM4V recycling modules sends the media to the All-In cassette.

Refer to the *Recycling Module, Generation Four Vertical (RM4V) Lower Module Operating Manual* (Order Number 01750308109).

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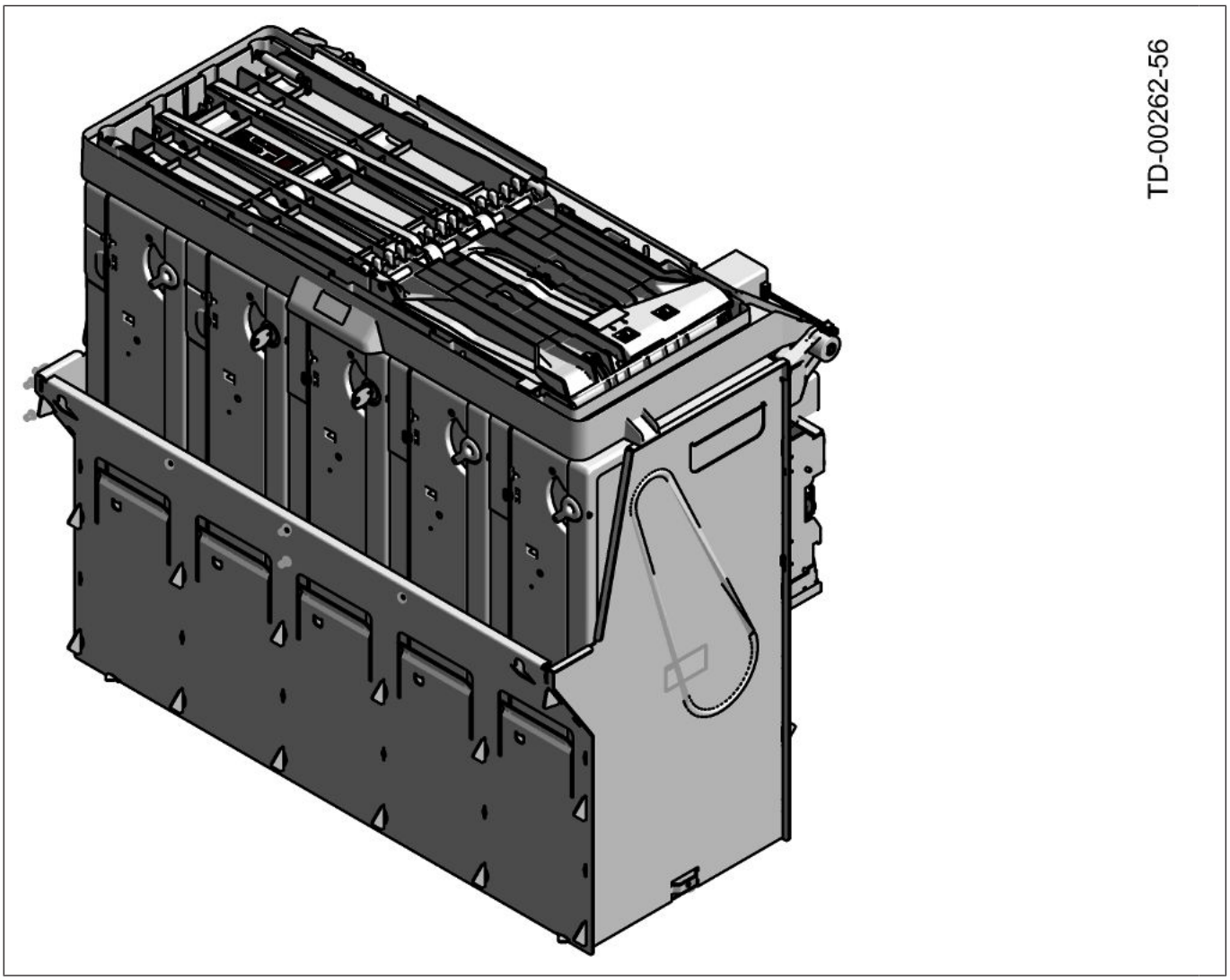

Figure 3-19: Recycling Module, Generation Four Vertical (RM4V) Lower Module

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3.4.2 Recycling Module RM4V, Recycling Cassettes

The front door on convenience recycling cassettes opens with a simple lever and can be pushed shut to close. The cassette can be converted into a secure cassette with a lock. The cassette can be removed and reinserted into the RM4V recycling module multiple times without having to reset a security feature.

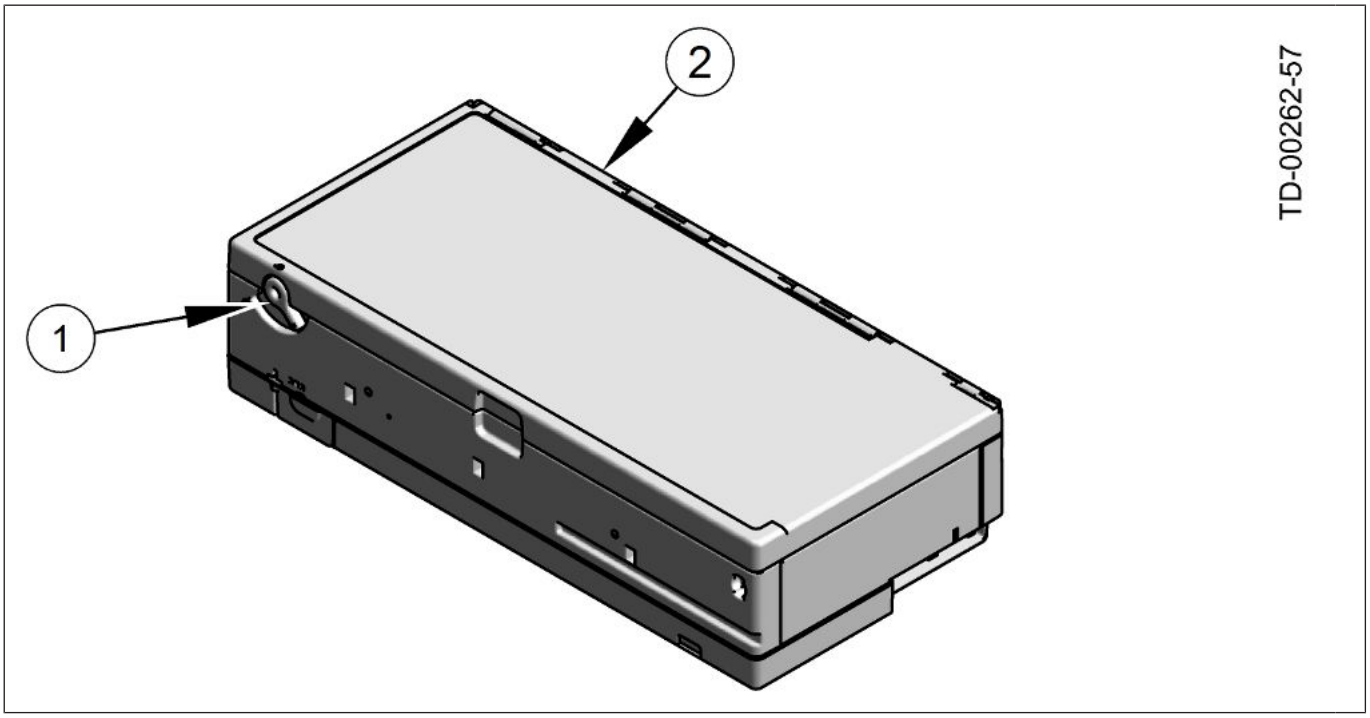

Figure 3-20: Convenience Recycling Cassette

1	Lever
2	Recycling convenience cassette

The secure cassette can use security seals to indicate tampering.

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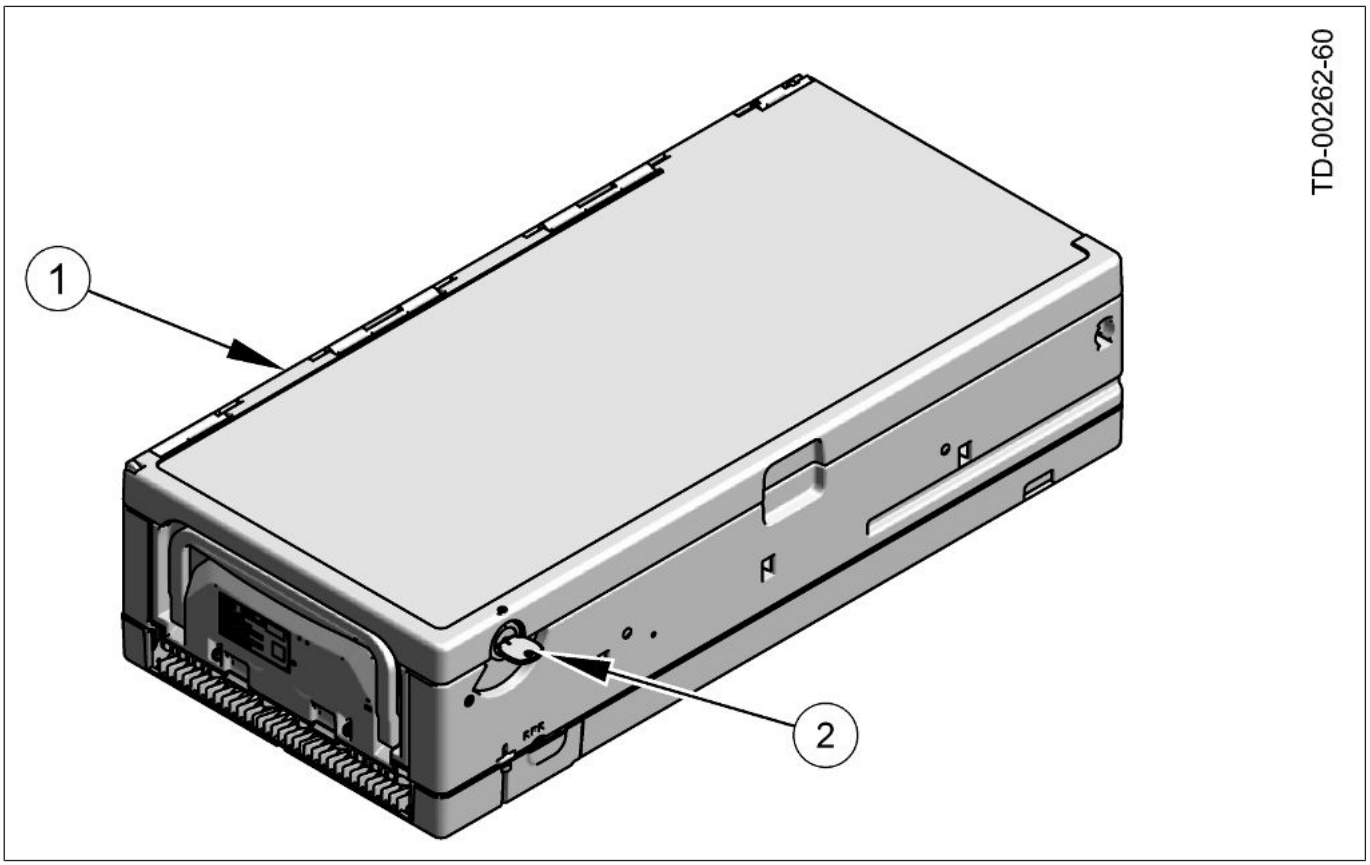

Figure 3-21: Secure Recycling Cassette

1	Secure recycling cassette
2	Lock

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3.4.3 Recycling Module RM4V, All-In Cassettes

The All-In cassette can be a secure or convenience cassette. The primary compartment latches or unlocks like the recycling cassette. If currency is not taken by the customer, the currency is retracted into the multi purpose/retract bin on the back of the All-in cassette.

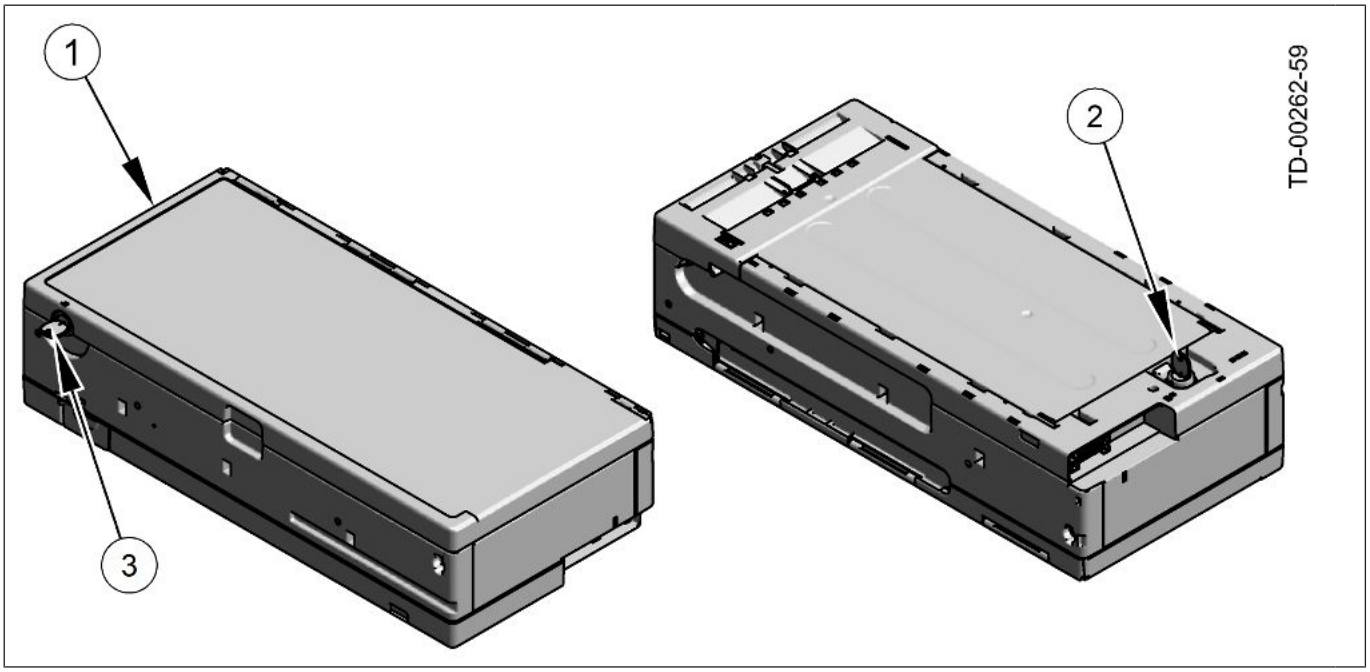

Figure 3-22: All-In Cassette (Secure Cassette Shown)

1	All-In cassette
2	Cassette lock
3	Multi purpose/retract bin lock

3.4.4 Recycling Module RM4V, Cassette Physical Description

Table 3-3: Dimensions of the Cassette

Dimension	Measurement
Length	531 mm (20.90 inches)
Width (All-In cassette)	251.8 mm (9.88 inches)
Height	128 mm (5.03 inches)

Table 3-4: Weight of the Cassette

Weight	State
3.49 Kg (7.7 pounds)	Empty recycling cassette
5.90 Kg (13.02 pounds)	Loaded with Fit Currency (2500 notes = 2.50 Kg (5.51 pounds)
6.98 Kg (15.4 pounds)	Loaded with New Currency (3500 notes = 3.50 Kg (7.72 pounds)

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Table 3-4: Weight of the Cassette (continued)

Weight	State
3.7 Kg (8.3 pounds)	Empty All-In cassette

Table 3-5: Media Accommodated by the Cassette

Dimension	Minimum	Maximum
Recycling cassette		
Width	120 mm (4.72 inches)	182 mm (7.16 inches)
Height	60 mm (2.36 inches)	85 mm (3.34 inches)
Thickness	0.08 mm to 0.18 mm	
All-In cassette		
Width	120 mm (4.72 inches)	182 mm (7.2 inches)
Height	60 mm (2.36 inches)	85 mm (3.34 inches)
Thickness	0.08 mm to 0.18 mm	

Table 3-6: Media Capacity of the Recycling Cassette

Size of media stack	300 note maximum
Capacity (US and Euro)	420 mm total capacity approximately 3500 notes

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3.4.5 Recycling Module RM4H, Overview

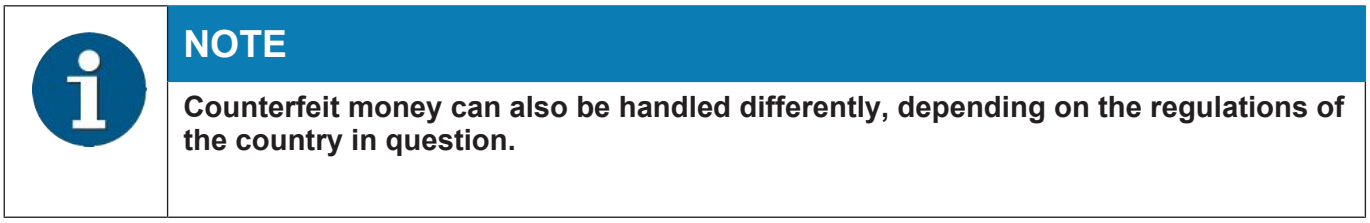
The RM4H is a cash-in/-out module for bank notes.

It is possible to deposit one or more banknotes. When there are several banknotes they are input as a bundle. A bundle can be a maximum of 300 banknotes, individual banknotes in a bundle do not have to be sorted.

To prevent malfunctioning, users must pay attention to the quality of banknotes that will be inserted. The RM4H allows slightly damaged banknotes to be processed. However, if the notes exceed the defined limits, the device will not be able to process the notes correctly.

Verification of the banknotes takes place in the banknote validator. Using loadable, country-specific currency data as a reference, the authenticity of the banknotes is checked here:

- Banknotes that are recognized as authentic are initially stored in the fixed position reel storage (escrow) after being deposited. This enables the banknotes to be returned if the deposit procedure is canceled. After the customer has confirmed the transaction the banknotes are once more verified in the banknote validator and transported to the cassettes in the safe unit for storage.
- Unsuitable banknotes that are deposited are removed from the processing procedure and returned to the customer.
- Deposited banknotes which are suspected to be counterfeit are placed in the head module in a separate head compartment (configuration-dependent).



- Banknotes which can not be clearly identified as well as banknotes forgotten or not removed by the customer in a withdrawal, are placed in the reject/retract cassette or in the All In Box (configuration-dependent).
- The input/output tray is protected by a shutter on the system side.

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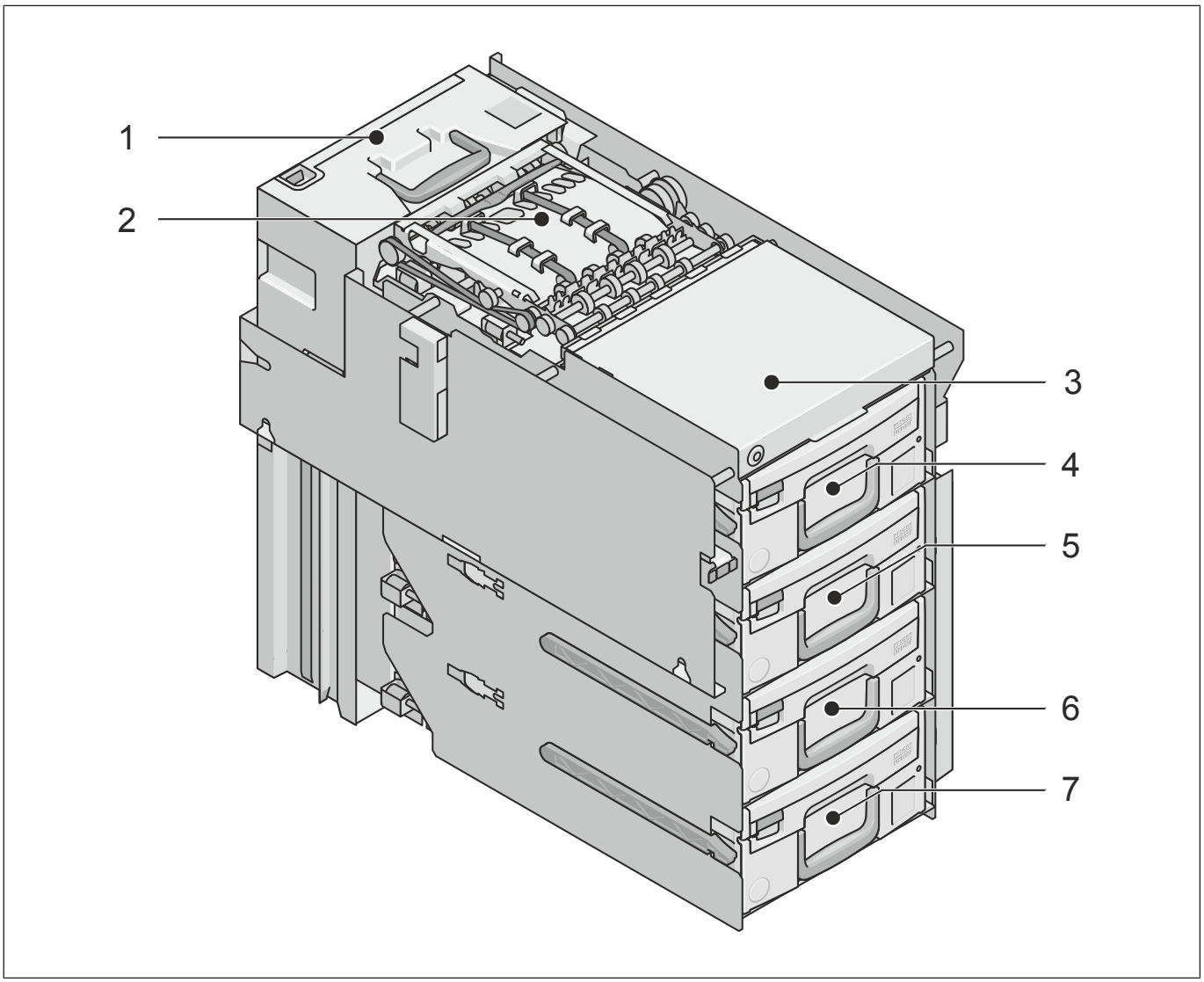

Figure 3-23: RM4H Lower Unit

1	All in Box
2	Distributor module
3	Safe compartment
4 through 7	Recycling cassettes

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3.4.6 Recycling Module RM4H, Standard Cassette

The cassettes are used for storing deposited banknotes and for storing banknotes for cash dispensing. The standard cassette is available in a basic, mid-range or high end configuration.

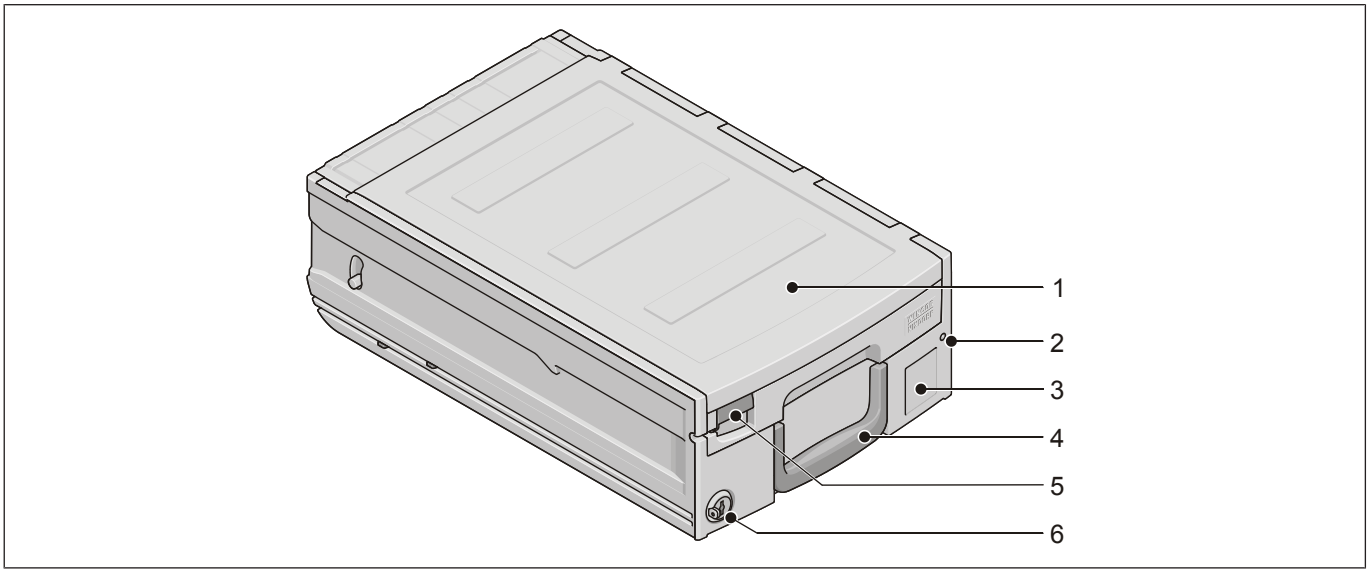

Figure 3-24: Standard Cassette Basic/Midrange

1	Cover
2	LED display - Status display (midrange only)
3	Location for rating/cassette label
4	Handle
5	Release lever
6	Lock (optional)

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3.4.7 Recycling Module RM4H, All-in Cassette

The All-in Cassette can be a secure or convenience cassette. The primary compartment latches or unlocks like the recycling cassettes.

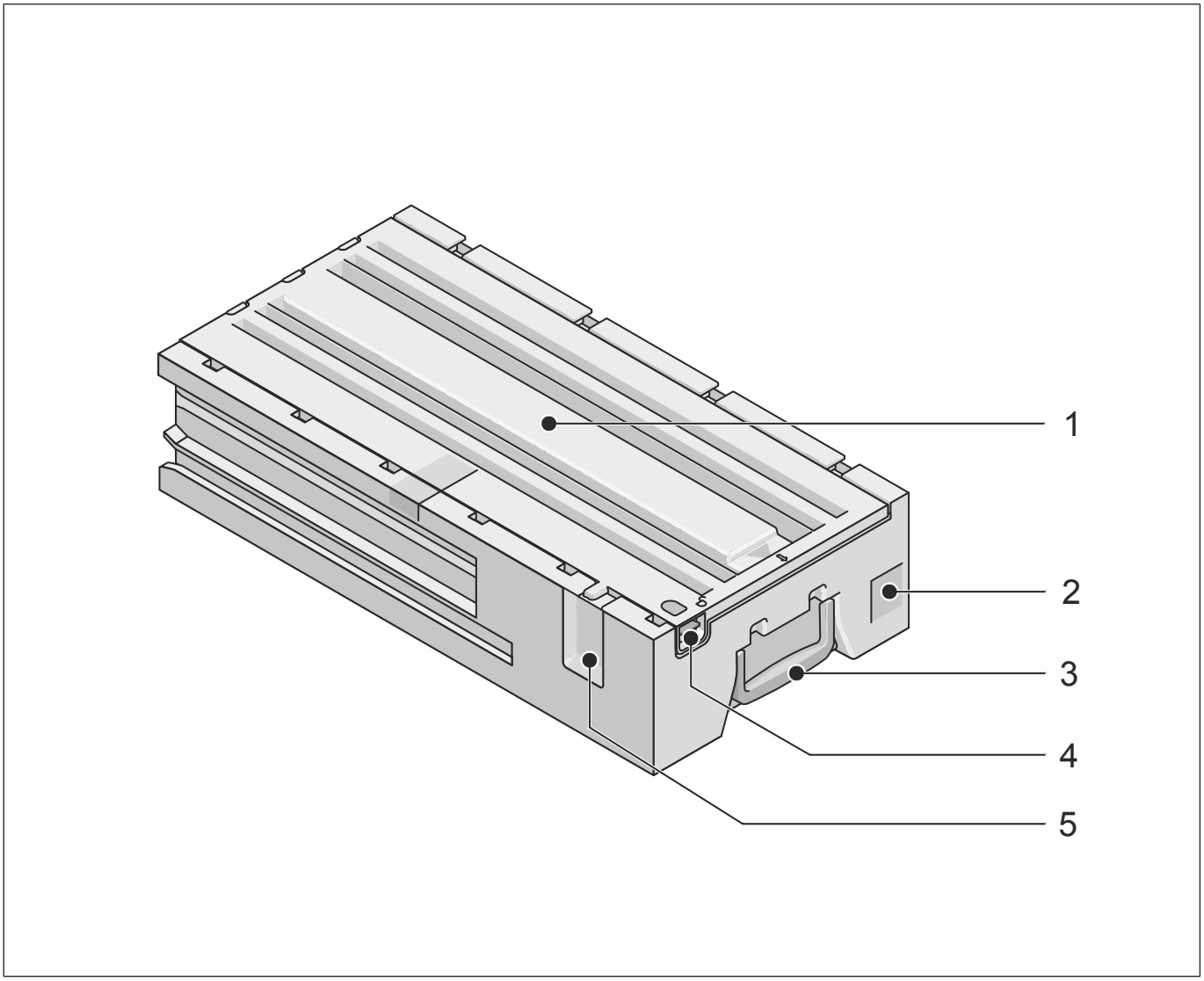

Figure 3-25: All-in Cassette

1	Cover
2	Location for rating /cassette label
3	Handle
4	Release lever of lock
5	Lead seal possibility

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3.4.8 Recycling Module RM4H, Cassette Physical Description

3.4.8.1 Technical Information

3.4.8.1.1 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 - 0.12 mm (0.003" - 0.005")
Stack length:	300 mm (11.81")
Storage capacity*:	More than 2400***
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)

3.4.8.1.2 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 (0.003" - 0.005")
Stack length:	200 mm (7.87")
Storage capacity*:	More than 1500***
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

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3.4.8.1.3 High End standard cassette

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 (0.003" - 0.005")
Stack length:	240 mm (9.45")
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)

3.4.8.1.4 High End compact cassette

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 (0.003" - 0.005")
Stack length:	140 mm (5.51")
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:	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

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3.4.8.1.5 Reel storage fixed position

Banknote length:	105 - 185 mm (4.13" - 7.28")
Banknote height:	58 - 85 mm (2.28" - 3.35")
Banknote thickness:	0.08 - 0.12 mm (0.003" - 0.005")
Storage capacity*:	200 - 400 banknotes
Weight:	
of an empty reel storage:	3.4 kg (7.5 lb)
eines vollständig gefüllten Rollenspeichers*/**:	3.9 kg (8.6 lb)

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

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

3.4.8.1.6 All In Box

Banknote length:	105 mm – 185 mm (4.13" - 7.28")
Banknote height:	58 mm – 85mm (2.28" - 3.35")
Banknote thickness:	0.08 mm – 0.12mm (0.003" - 0.005")
Stack length:	510 mm (20.08")
Storage capacity:	More than 4000***
Dimensions (L x W x H):	592 mm x 300 mm x 140 mm (23.31" x 11.81" x 5.51")
Weight:	
of an empty cassette:	5 kg (11.02 lb)
of a completely filled cassette:	9.5 kg (20.94 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

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3.4.9 CMD-V6C Cash Dispenser Lower Module

The CMD-V6C cash dispenser lower module delivers media (such as currency) to the consumer. The media is drawn from the supply cassettes and transported to an output tray behind the fascia of the system, where the consumer can receive it once the shutter is opened. If the media is too mutilated or wrinkled, or if multiple notes are picked at the same time, the notes go to the reject/retract cassette instead of being delivered to the consumer.

For more information, refer to the *DN Series™ CMD-V6C Cash Dispenser Operating Manual* (Order Number 01750342709).

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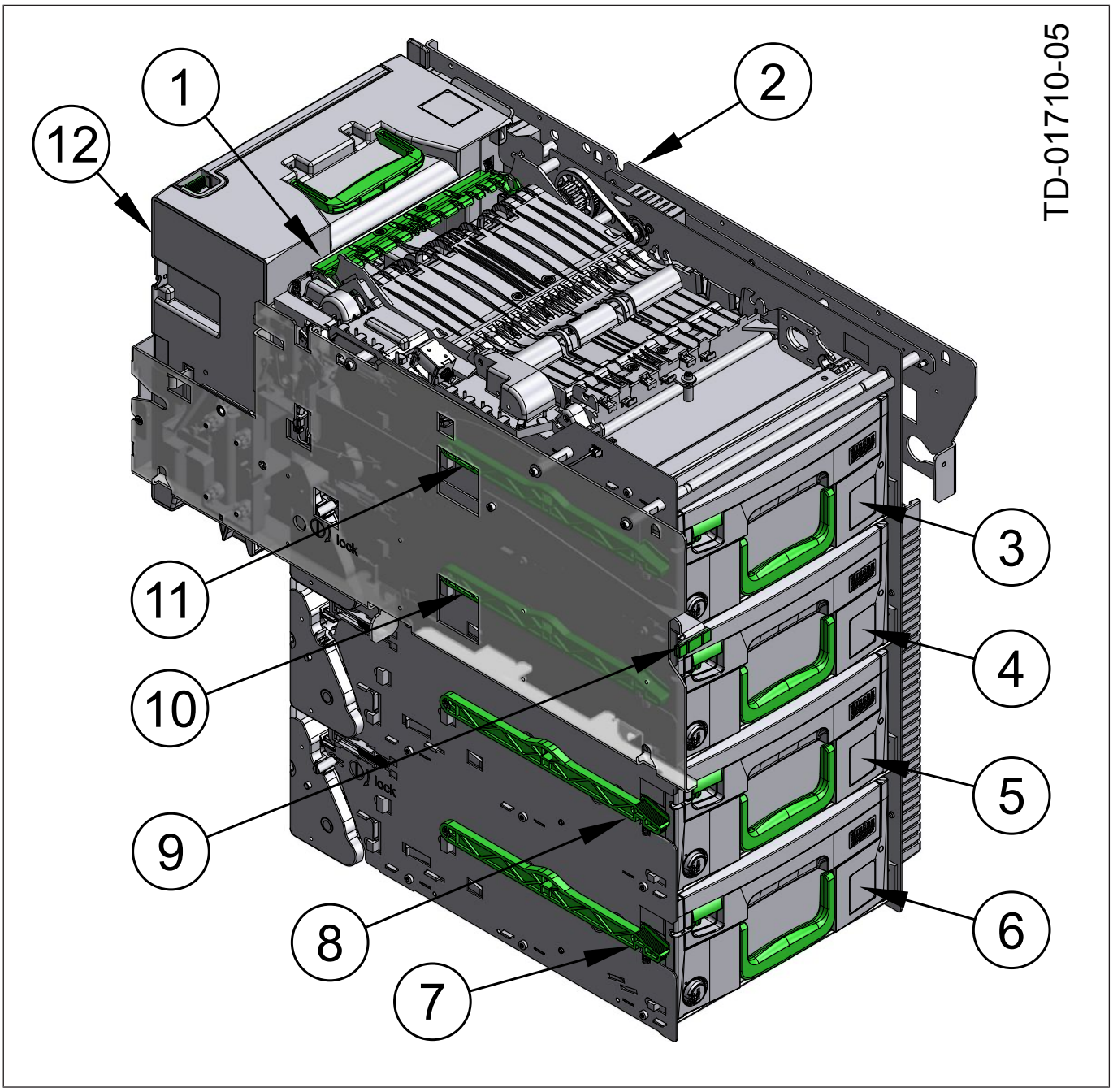

Figure 3-26: CMD-V6C Lower Module

1	Safe distribution transport release lever
2	CMD-V6C lower module
3	Supply cassette
4	Supply cassette
5	Supply cassette
6	Supply cassette
7	Supply cassette release lever
8	Supply cassette release lever

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9	Locking/release lever for CMD-V6C lower module
10	Supply cassette release lever
11	Supply cassette release lever
12	Reject/Retract cassette

3.4.10 CMD-V6C Cash Dispenser Supply Cassettes

The front door of the supply cassette opens with a simple lever and can be pushed shut to close. The cassette can be removed and reinserted into the CMD-V6C multiple times without having to reset a security feature.

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Figure 3-27: CMD-V6C Supply Cassette

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3.4.11 CMD-V6C Cash Dispenser Reject/Retract Cassette

Notes can be stored in the reject/retract cassette which were recognized as counterfeit money, damaged, or were not removed by the customer during the cash-out procedure.

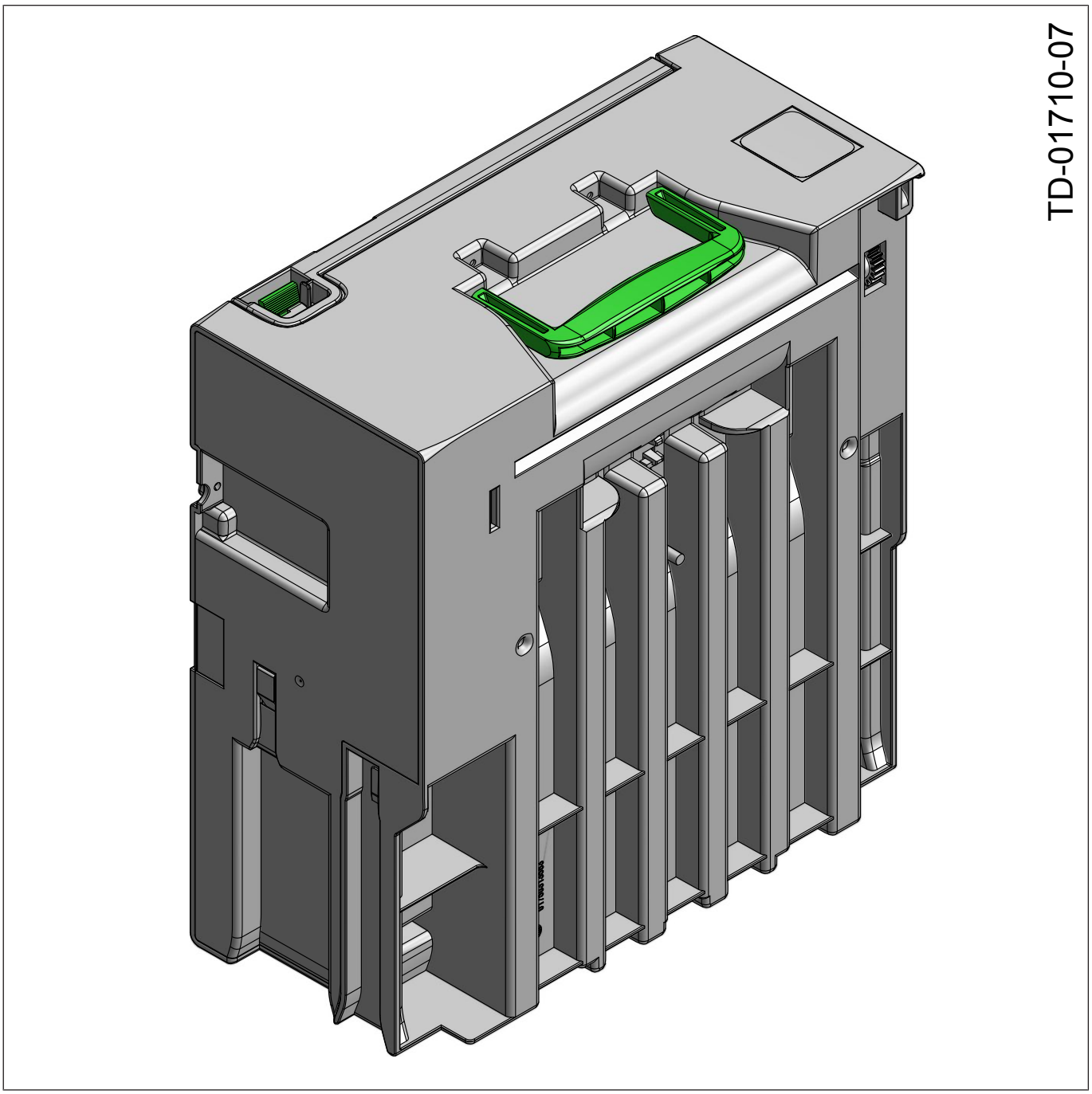

Figure 3-28: CMD-V6C Cash Dispenser Reject/Retract Cassette

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3.4.12 CMD-V6C Cassette Physical Description

Table 3-7: Dimensions of the Supply Cassette

Dimension	Measurement
Length	411 mm (16.18 inches)
Width	260 mm (10.24 inches)
Height	128 mm (5.06 inches)

Table 3-8: Weight of the Cassette

Weight	State
3.49 Kg (7.7 pounds)	Empty supply cassette
5.90 Kg (13.02 pounds)	Loaded with Fit Currency (2500 notes = 2.50 Kg (5.51 pounds)
6.98 Kg (15.4 pounds)	Loaded with New Currency (3500 notes = 3.50 Kg (7.72 pounds)
5 Kg (11.02 pounds)	Empty reject/retract cassette

Table 3-9: Media Accommodated by the Cassette

Dimension	Minimum	Maximum
Supply cassette		
Width	105 mm (4.13 inches)	185 mm (7.18 inches)
Height	58 mm (2.28 inches)	85 mm (3.35 inches)
Thickness	0.08 mm to 0.12 mm	
Reject/retract cassette		
Width	105 mm (4.13 inches)	185 mm (7.18 inches)
Height	58 mm (2.28 inches)	85 mm (3.35 inches)
Thickness	0.08 mm to 0.12 mm	

Table 3-10: Media Capacity of the Supply Cassette

Size of media stack	300 note maximum
Capacity (US and Euro)	420 mm total capacity approximately 3500 notes

Table 3-11: Media Capacity of the Retract/Reject Cassette

Size of media stack	110 notes for retract notes
Capacity (new 20 Euro)	400 notes for reject notes

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3.4.13 CMD-V6A Cash Dispenser Lower Module

The CMD-V6A cash dispenser lower module delivers media (such as currency) to the consumer. The media is drawn from the supply cassettes and transported to an output tray behind the fascia of the system, where the consumer can receive it once the shutter is opened. If the media is too mutilated or wrinkled, or if multiple notes are picked at the same time, the notes go to the divert bin instead of being delivered to the consumer.

For more information, refer to the *DN Series™ CMD-V6A Cash Dispenser Operating Manual* (Order Number 01750339307).

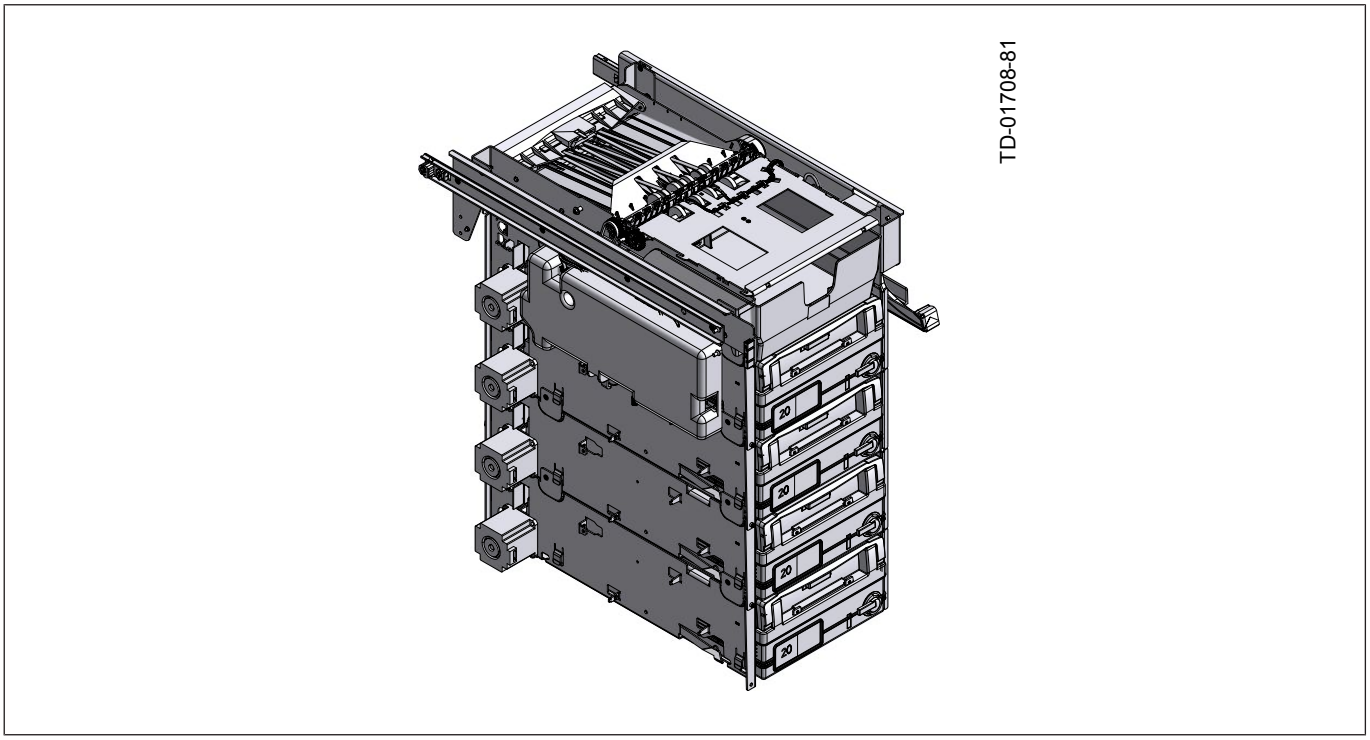

Figure 3-29: CMD-V6A Lower Module

3.4.14 CMD-V6A Cash Dispenser Supply Cassettes

The lid of the supply cassette opens with a simple lever (convenience cassettes) (*Figure 3-30*) or unlocked (tamper cassette) (*Figure 3-31*) and can be pushed shut to close. The cassette can be removed and reinserted into the CMD-V6A multiple times.

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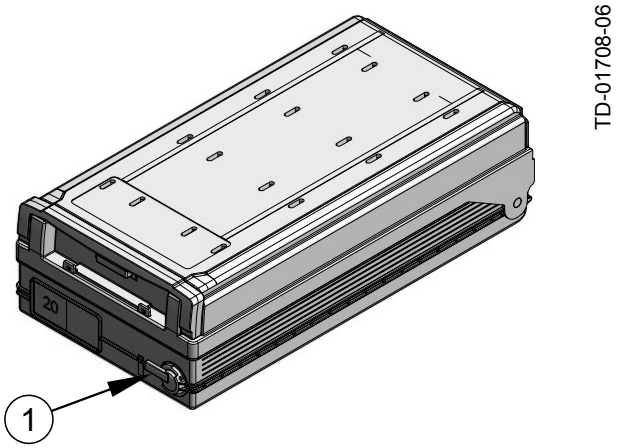

Figure 3-30: Convenience Supply Cassette

1	Lever

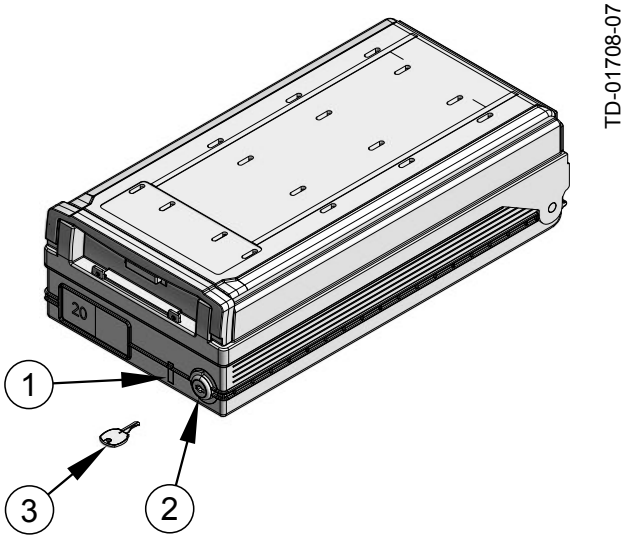

Figure 3-31: Tamper-indicating Supply Cassette

1	Red/green tamper indicator
2	Lock
3	Service key

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3.4.15 CMD-V6A Divert Bin

The divert bin has the following features:

- The bin is an open molded plastic receptacle, it does not have a lid, tambour door, or security features
- The bin can be inserted into the divert module in the dispenser
- The bin actuates the cassette present switch when it is inserted into the dispenser.
- The snap latch receptacle holds the bin in place.
- Customer contact points are green.

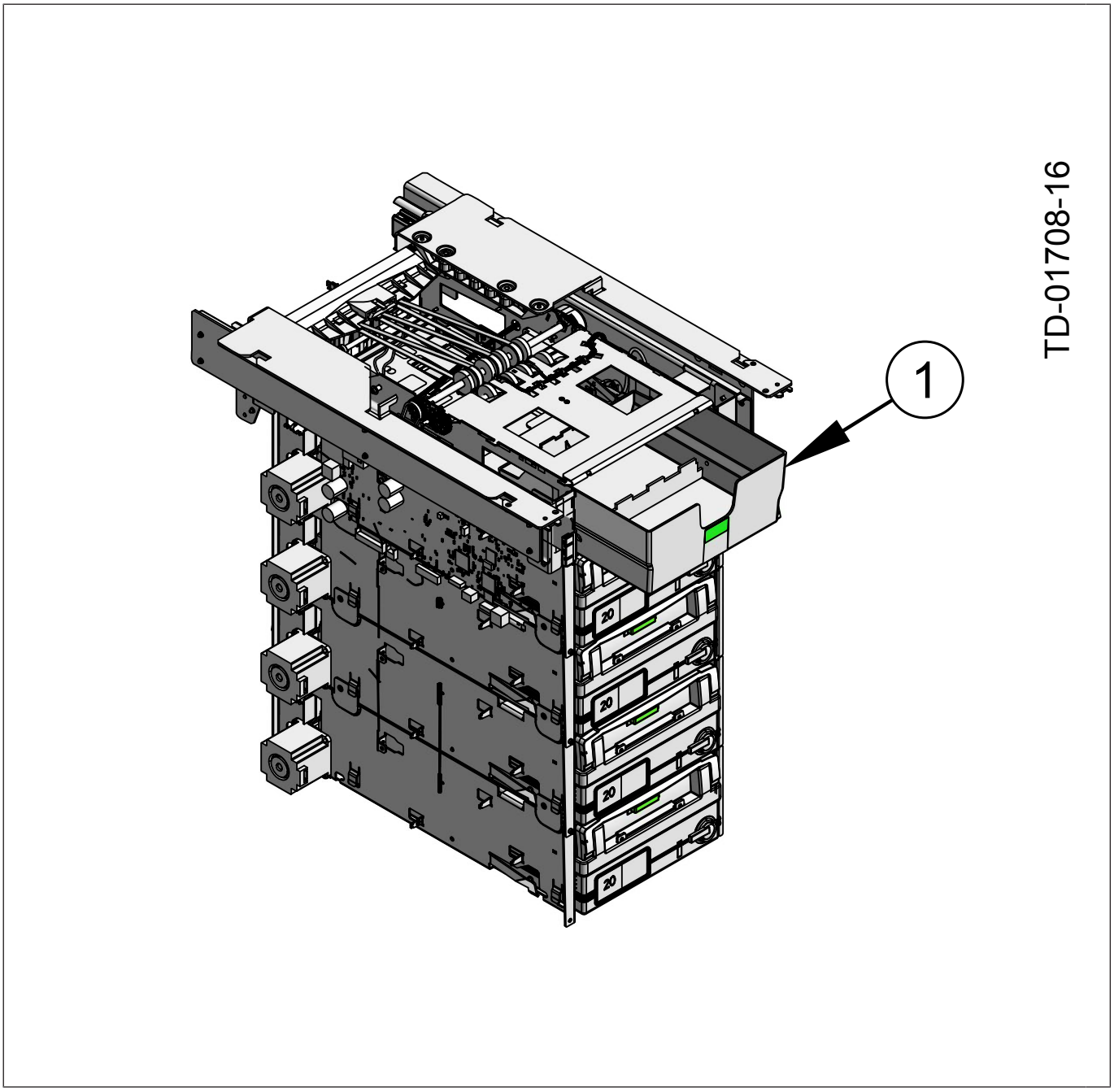

Figure 3-32: Divert Bin

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3.4.16 CMD-V6A Cassette Physical Description

The following table describes the media that can be used in the CMD-V6A.

Table 3-12: Dimensions of the Documents

	Minimum	Maximum
Width	58 mm (2.283 inches)	85 mm (3.346 inches)
Length	105 mm (4.133 inches)	185 mm (7.283 inches)
Thickness	0.06 mm (0.0024 inches)	0.25 mm (0.01 inch)
Weight (of cassette with media)	approximately 4.87 kg (10.75 pounds)	
Capacity	2000 fit notes to 2900 new notes	

3.4.17 Safe Lock

There are many types of safes and safe locks available for the system and is dependent upon customer requirements.

3.4.18 System Switches

System switches monitor the open or closed position of the system fascia, upper chassis rear door, and safe door.

3.4.19 Alarm Sensors

Alarm sensors with a network interface report to a network and send alarm signals to an alarm-monitoring system. Alarm sensors report during or after one of the following events:

- The safe door is opened or closed (door status).
- The safe door is opened, but the combination was not entered (burglary) available on single combination mechanical lock and on electronic locks.
- The duress combination is entered (anti-ambush) available on single combination mechanical lock and on electronic locks.
- Primary bolt work position sensor detects whether the bolt work is open or closed.
- Secondary lock bolt position sensor.

Alarm sensors with a network interface provide their own battery backup. The system uses the safe door switch to distinguish between an authorized or unauthorized entry before sending an alarm signal.

3.4.20 Seismic Detectors

Seismic detectors sense physical blows to the system safe. Alarm sensors with a network interface must be present for the seismic detectors to function.

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3.4.21 Third Party Alarms

Institutions may want to install their own alarm systems within the safe. An area within the safe is designated for third party alarm installation.

3.4.22 Heat Thermostat

The heat thermostat, integral to the basic alarms panel, senses when the temperature inside the system safe exceeds a certain level. If this level is exceeded, the heat thermostat initiates an alarm.

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4 Options

Remote Status Indicator

The system may be equipped with a remote status indicator (RSI) (*Figure 4-1* or *Figure 4-2*). This indicator can be installed physically separate from the system. It serves to inform the operator of the current status of the system. In contrast to the remote status indicator - standard, the remote status indicator - audio also features an acoustic signal generator. In the case of display 1 (red), an additional continuous tone is generated. It can be deactivated using the Audio Reset key. However, the optical display will still output.

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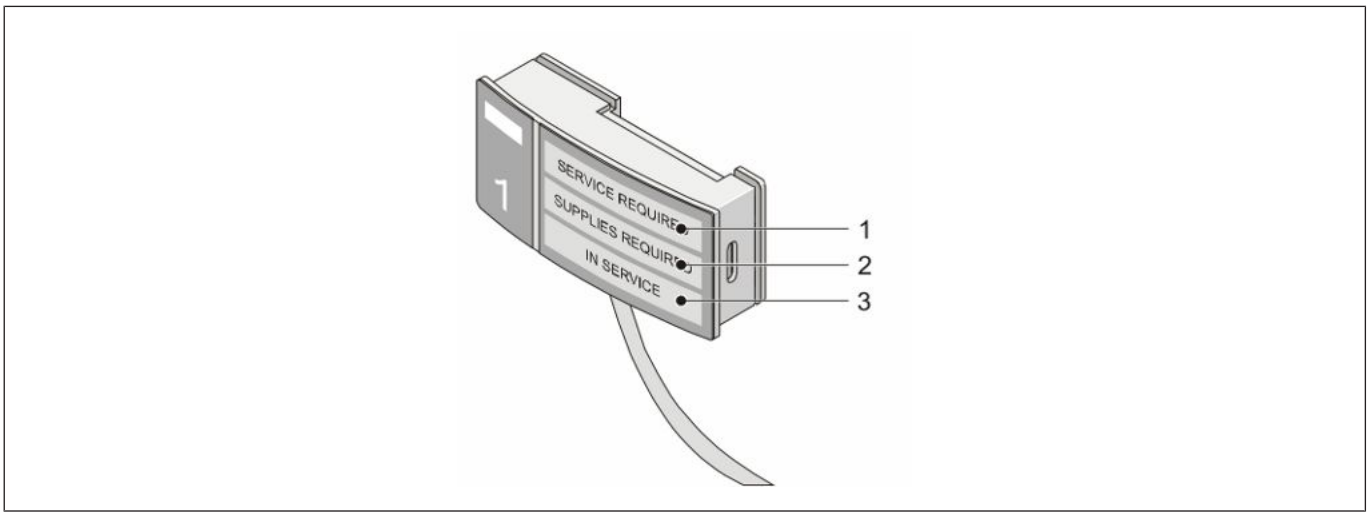

Figure 4-1: Default Remote Status Indicator

1	Red - Service Required	Follow the instructions displayed on the monitor. If an error occurs inform your service representative.
2	Yellow - Supplies Required	Follow the instructions displayed on the monitor.
3	Green - In Service	Device is in operation

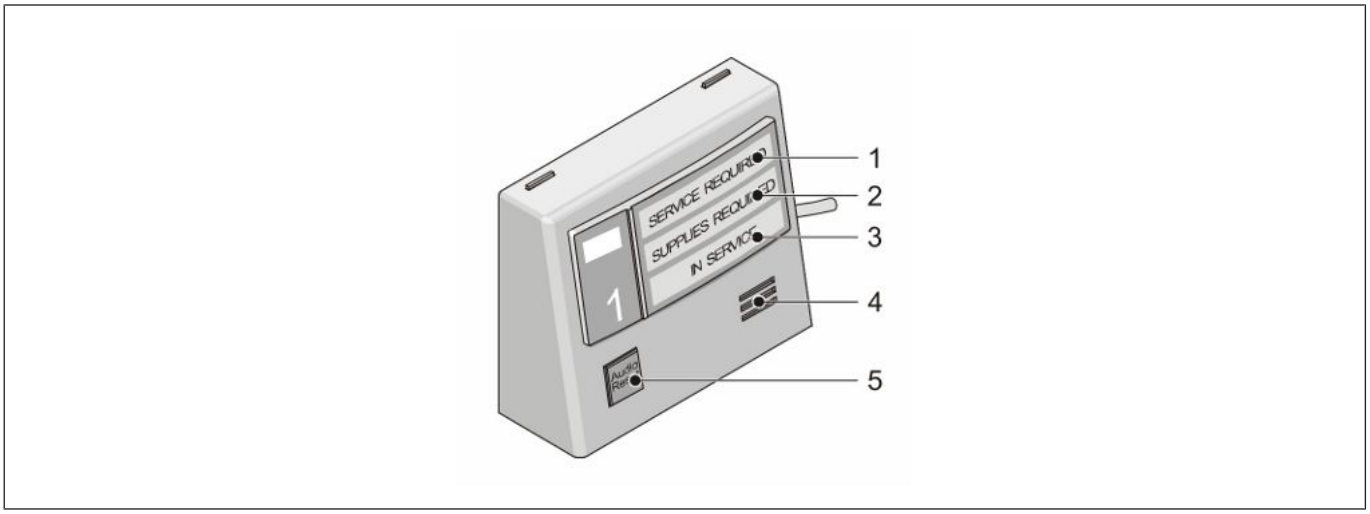

Figure 4-2: Remote Status Indicator with Audio

1	Red - Service Required	Follow the instructions displayed on the monitor. If an error occurs inform your service representative.
2	Yellow - Supplies Required	Follow the instructions displayed on the monitor.
3	Green - In Service	Device is in operation
4	Acoustic signal generator	Continuous tone with Service Required. Follow the instructions displayed on the monitor. If a error occurs inform your service representative.
5	Key - Audio Reset	Switches the continuous tone off.

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5 Operation

This section provides the following information:

System - shutting down and starting up	*Section 5.1.1.2*
Modules - shutting down and starting up	*Section 5.1.1.3*
Accessing the upper chassis	*Section 5.2*
System and device touch points	*Section 5.3*
Accessing the rear service display	*Section 5.4*
Pulling out /Pushing in cash components	*Section 5.5*
Accessing the check deposit module	*Section 5.6*
Accessing the card retain bin and receipt printer	*Section 5.7*
Accessing the coin dispenser	*Section 5.9*
How to read a bar code	*Section 5.10*
Accessing the safe	*Section 5.11*
Opening and closing the safe door with a factory setting lock	*Section 5.12.1*
Opening and closing the safe door with a customized lock	*Section 5.12.3*

Before proceeding, be sure you have the upper chassis door key and the correct lock combination.

⚠ WARNING

To avoid risk of death, severe personal injury, or equipment damage, always follow the written maintenance procedures for the system and its individual modules.

NOTE

For maintenance procedures for the individual system modules, refer to the module operating guides listed in *Appendix A* .

5.1 T/SOP

To use T/SOP, press the wrench button on the external control unit (External Control Unit) and follow the instructions on the rear service display.

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5.1.1 Startup and Shutdown

5.1.1.1 Starting up the System

NOTE

After shutting down the system, you must wait at least five minutes before starting up the system again.

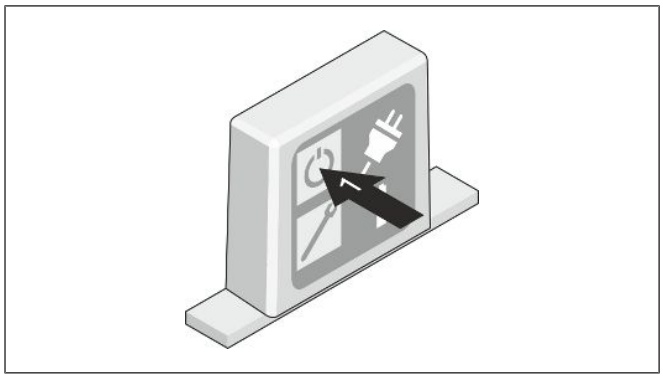

Figure 5-1: Switching off the System

✓ Gain access to the external control unit (see chapter “Description”, section "System overview").

✓ Make sure the power switch is on.

1. Press the on/off button on the external control unit (see chapter External control unit Overview).

The ON/OFF LED lights up green.

The system starts.

5.1.1.2 Shutting down the System

NOTE

Current transactions

A transaction that is still running (for example, payment to a customer) is completed before the system is completely shut down.

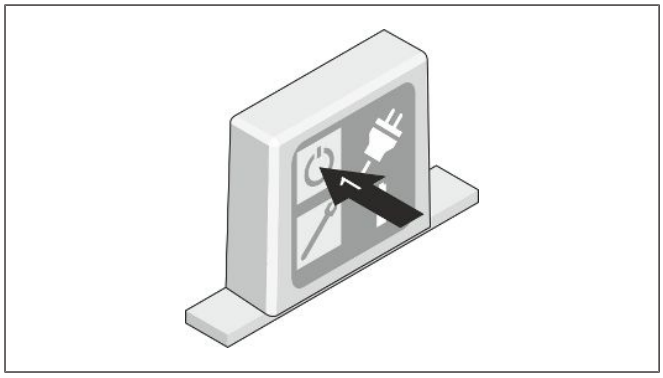

Figure 5-2: Turning off the System

✓ Gain access to the external control unit ("see chapter "Description, section "System overview").

1. Press the "On / Off" button on the external control unit (see chapter External control unit).

The "System LED" goes off as soon as the system has been shut down.

NOTE! System shutdown may take a few seconds depending on operating system and running transactions.

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5.1.1.3 Modules - Shutting Down and Starting Up

There are two ways to shut down and start up the modules in the system. One way is to press and hold the service (wrench) button for 5 seconds to turn the modules off. If the service (wrench) button is pressed and held again the modules will power back on.

The second way to shut down the modules is through T/SOP. T/SOP provides the ability to remove power from individual system devices using the external control unit. All modules that are powered by the power rails will have a power off or power on function available in T/SOP from the Device Overview screen (see *Figure 5-3*). This module-specific power off and power on function will be limited to power off and power on for the power rail that the powers the specific module. Notice that modules that share the same power rail will also be powered off and on.

Also refer to the *Technical Service and Operating (T/SOP) for ProBase/C and ProBase/J User Manual* for more information.

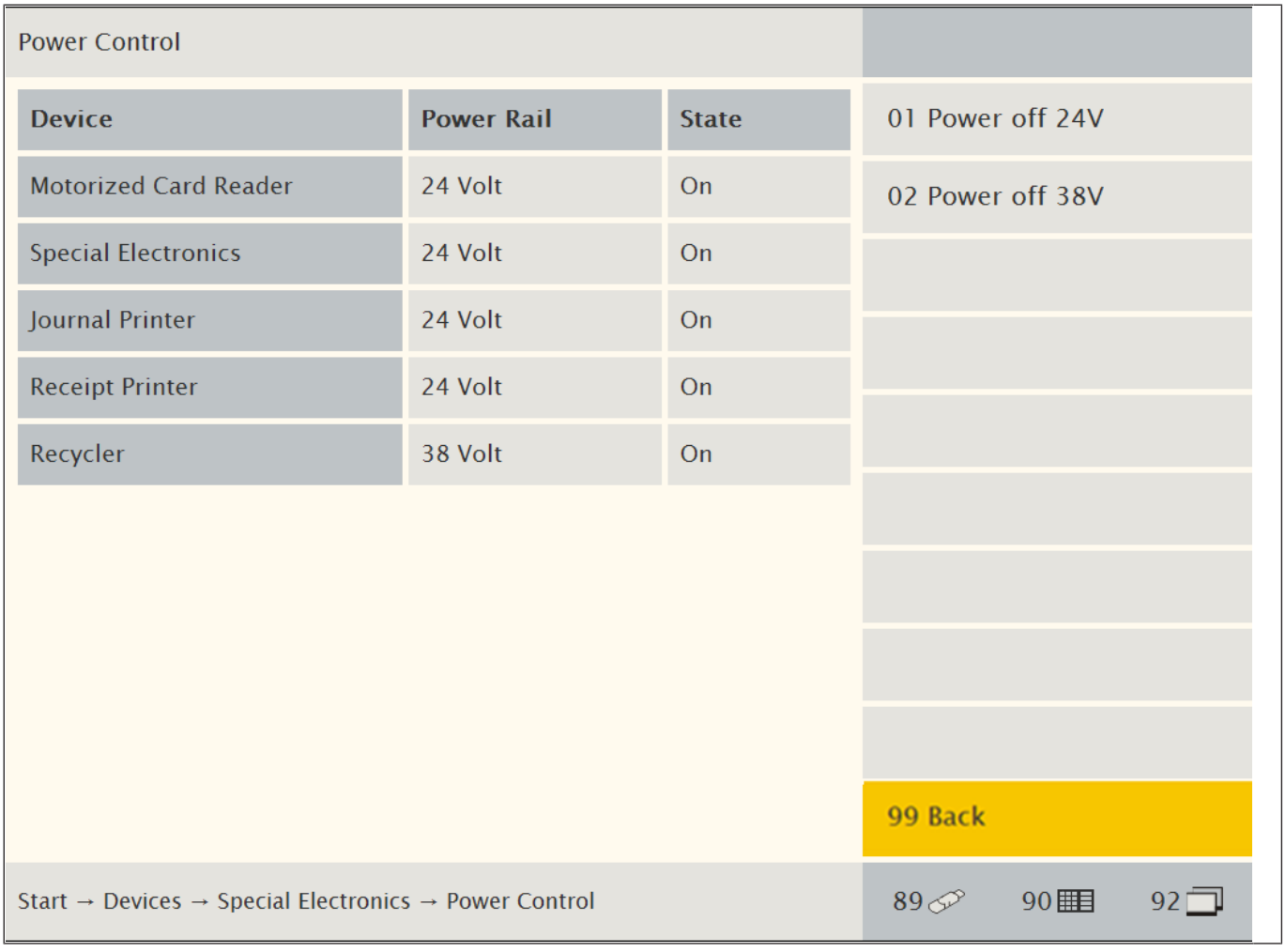

Figure 5-3: T/SOP Power Down at Device Overview Screen

1. To power down specific modules, press the wrench button on the external control unit (External Control Unit Overview).
2. Refer to T/SOP Device Overview screen to power down specific power rails (*Figure 5-3*).
3. Refer to T/SOP to power down specific modules (*Figure 5-4*).

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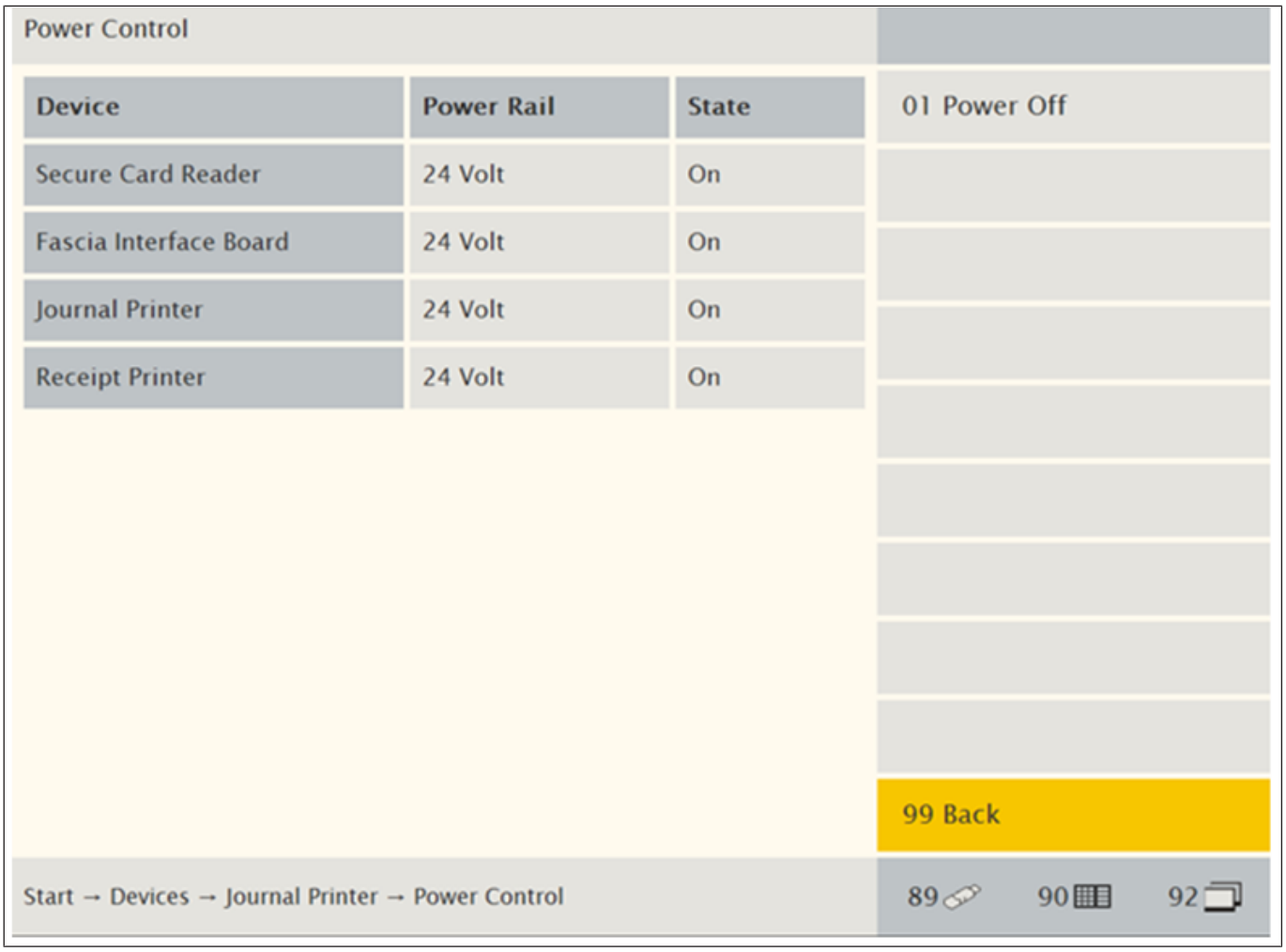

Figure 5-4: T/SOP Power Down Specific Modules Screen

5.2 Accessing the Upper Chassis

5.2.1 Accessing the Upper Chassis - Electro-mechanical (EM) Lock

The optional electro-mechanical (EM) upper chassis lock (*Figure 5-5*) protects against unauthorized opening and access. When trying to open the system, sensors are used to determine whether there are banknotes in the upper unit of the recycling module or cash dispenser. If there are banknotes in the upper unit, the upper chassis door is locked with both the EM-lock and upper chassis door key lock.

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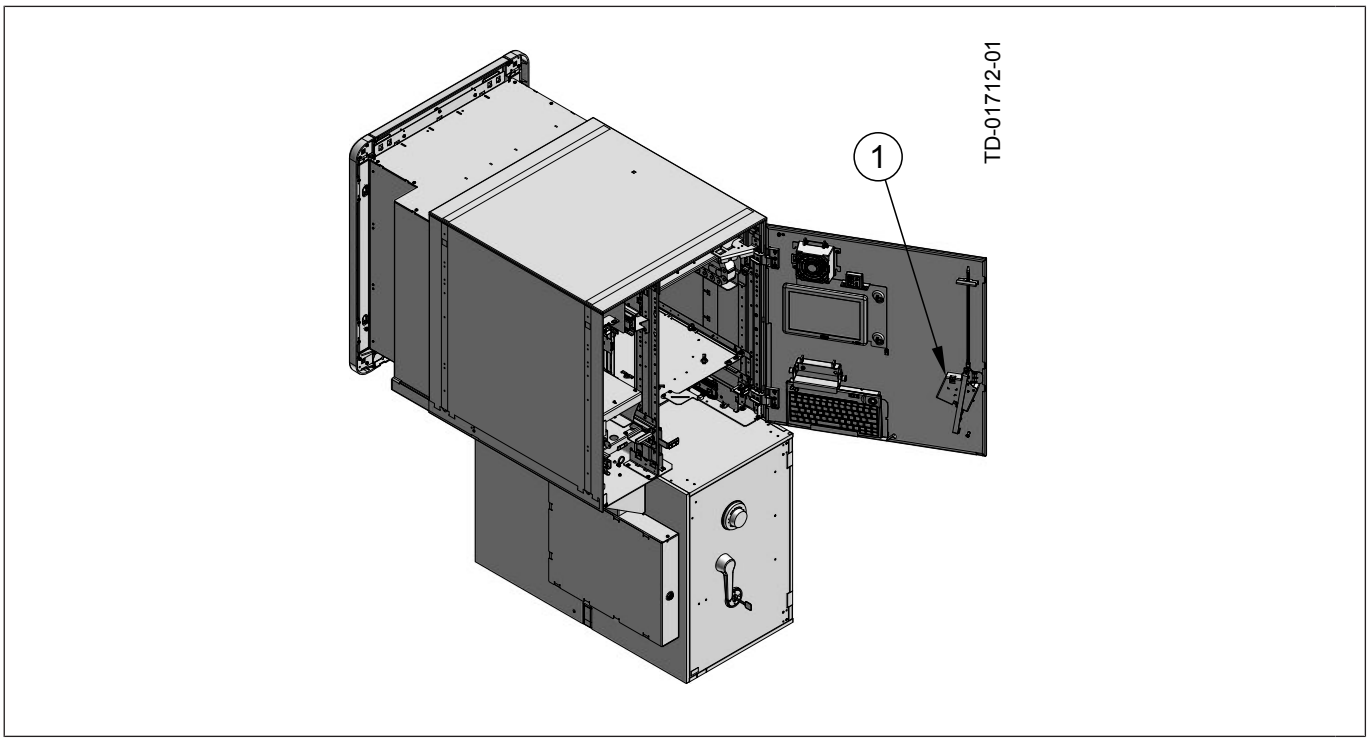

Figure 5-5: EM Lock Location

1	Electro-mechanical (EM) lock

NOTE

When using the electro-mechanical chassis lock, is not possible to open the upper chassis door lock with the key alone. The system can only be opened with the key and with additional authorization or activation of the electro-mechanical chassis lock.

Depending on the application, you have one of the following options for unlocking the electro-mechanical chassis lock:

- By opening the safe door
- By turning the key in the door lock of the upper chassis door

NOTE

After unlocking the electro-mechanical chassis lock, you can turn the key in the door lock of the upper chassis door.

Perform the following steps to unlock the EM-lock if there are banknotes in the upper unit, the upper chassis door is locked with both the EM-lock and upper chassis door key lock.

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NOTE

To unlock the electro-mechanical upper chassis lock you will need a 9V battery. The 9V battery is not included and must be obtained separately.

1. Open the safe door.

NOTE

When inserting the 9V battery, make sure that the battery contacts are assigned correctly.

2. Connect a 9V battery to the 9V battery contact in the safe (*Figure 5-6*).

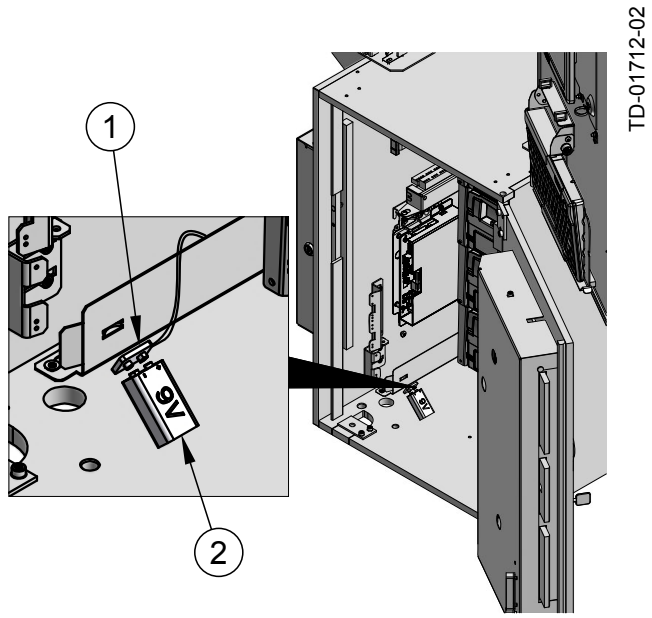

Figure 5-6: Connect Battery to Contacts

1	Battery contacts
2	Battery

3. The electro-mechanical chassis lock is unlocked.
4. Remove the 9V battery from the battery contacts.
5. Use the key to unlock the upper chassis door lock.

5.2.2 Opening the Upper Chassis Rear Door

Perform the following steps to open the upper chassis rear door and access the system modules.

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1. Insert the upper chassis door key into the lock on the upper chassis of the system. Unlock and open the door (see *Figure 5-7*).
2. Refer to T/SOP to place the system in the proper mode for maintenance.
3. Refer to the appropriate section in this manual to access the desired component.
4. Refer to the appropriate operating manual listed in *Appendix A* for information on completing the maintenance procedures for your system's modules.

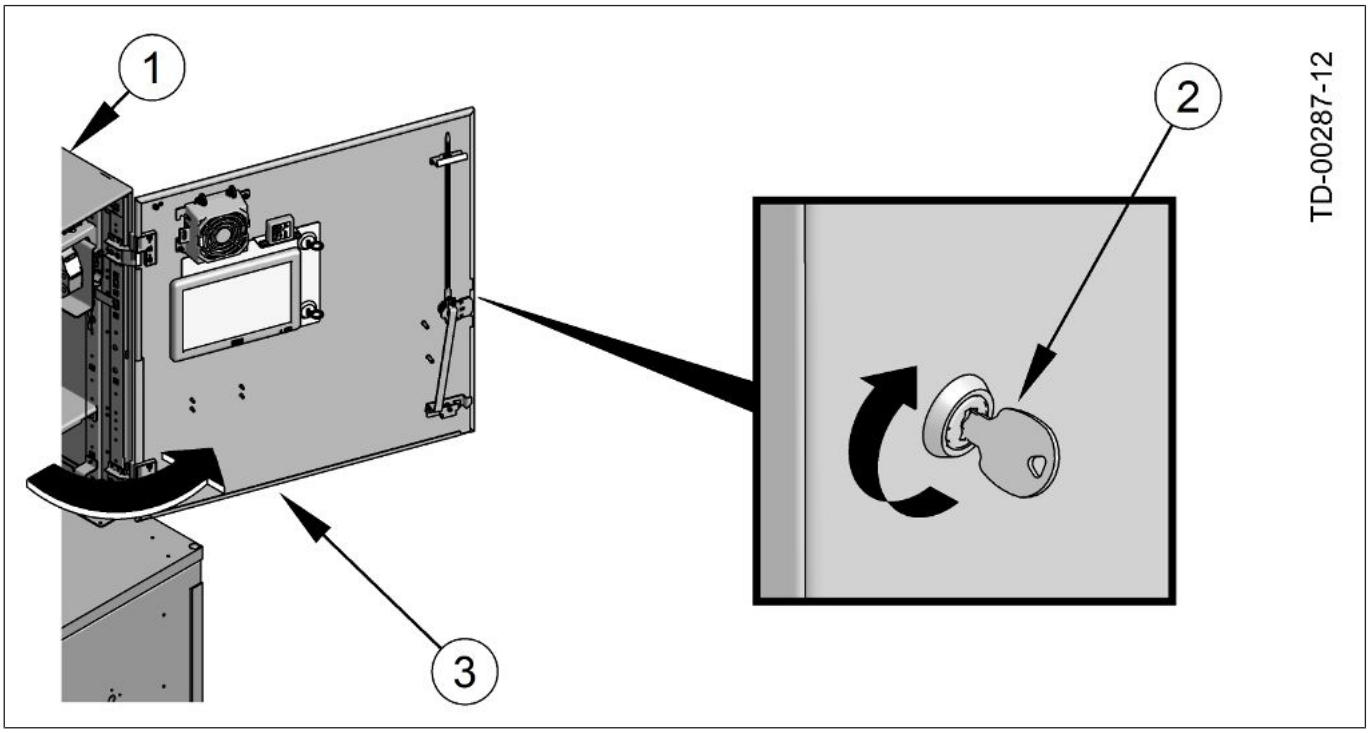

Figure 5-7: Opening the Upper Chassis Rear Door

1	System
2	Key for the upper chassis rear door lock (turn key clockwise)
3	Upper chassis rear door in open position

5.2.3 Closing the Upper Chassis Rear Door

Perform the following steps to close the upper chassis rear door.

1. Release any mounting tray latches and push the mounting trays back into the system until they latch in place.
2. Close and lock the upper chassis door (see *Figure 5-8*).
3. Tug gently on the rear door after it is closed to make sure it is properly closed.

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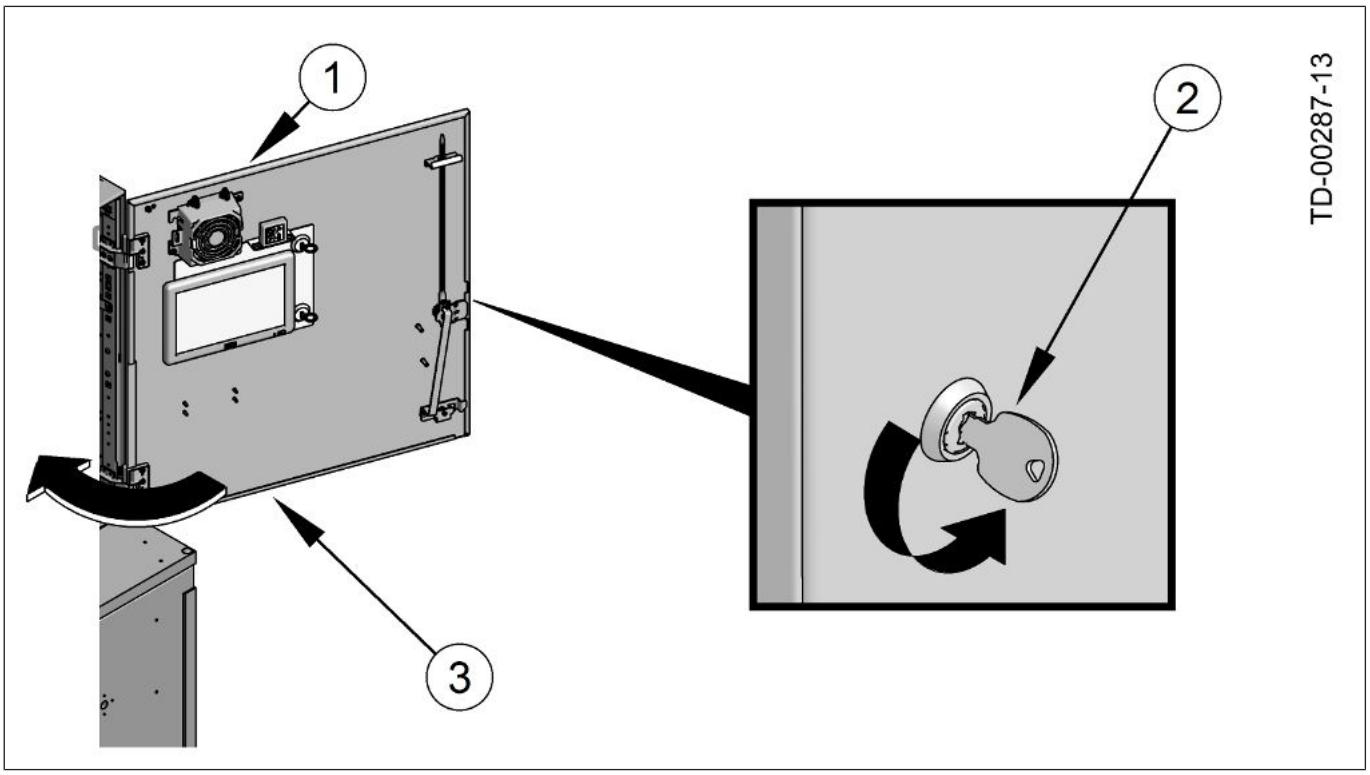

Figure 5-8: Closing the Upper Chassis Rear Door

1	System
2	Key for the upper chassis rear door lock (turn key counterclockwise)
3	Upper chassis rear door in open position

5.3 System and Device Touch Points

Touch points are designated areas designed for accessing and handling the system devices during the standard system maintenance procedures. Touch points are color coded green and include, but are not limited to, slide assembly release levers, module handles, device levers, knobs, etc. See *Figure 5-9* through *Figure 5-13* for examples of these touch points.

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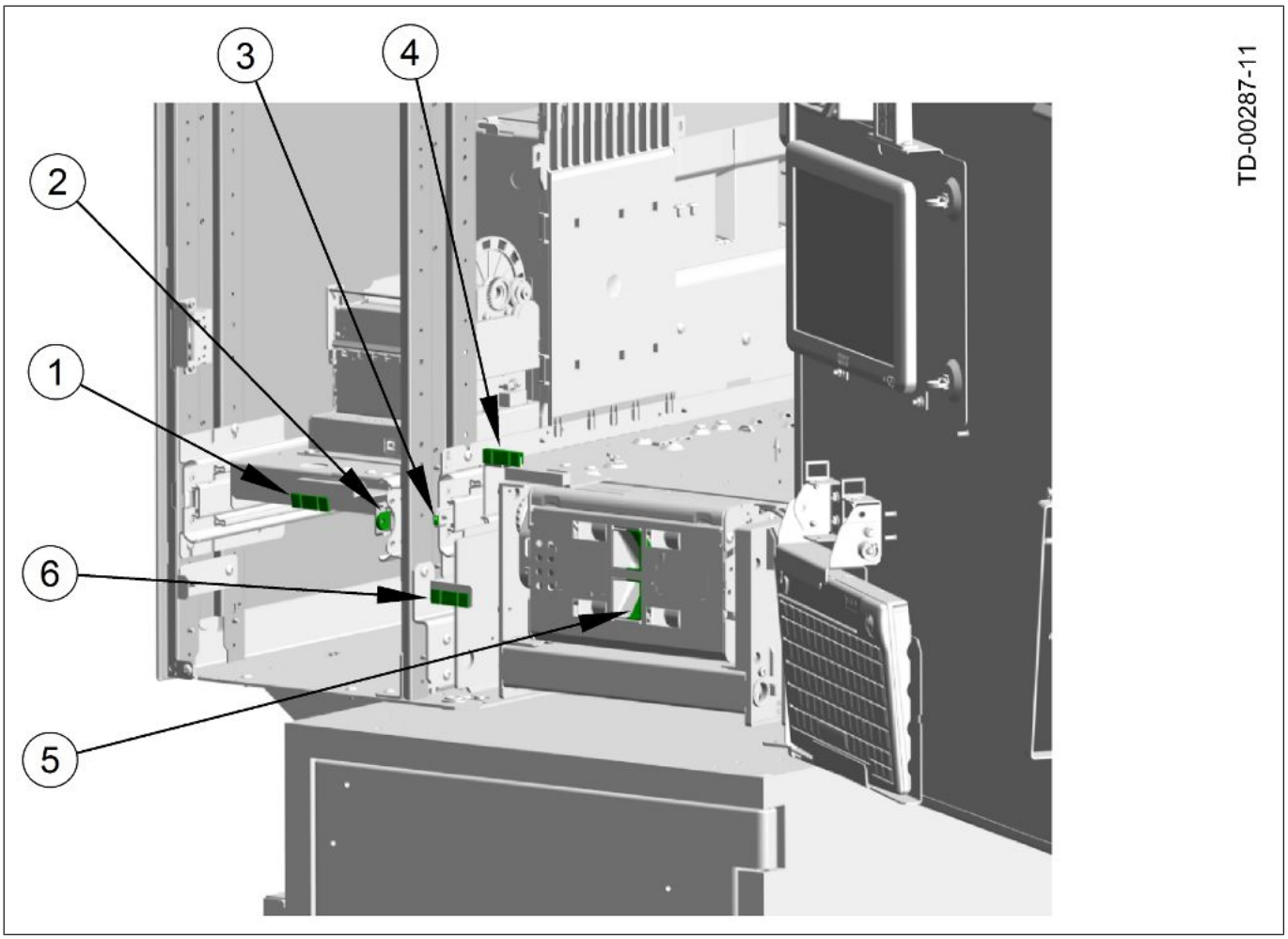

Figure 5-9: Upper Chassis Touch Points

1	Coin tray handle
2	Coin tray release latch
3	Component tray release latch
4	Component tray handle (motorized card reader, check deposit module, receipt printer)
5	RM4 upper head unit handle
6	RM4, CMD-V6C or CMD-V6A cash dispenser upper head unit release latch (RM4 shown)

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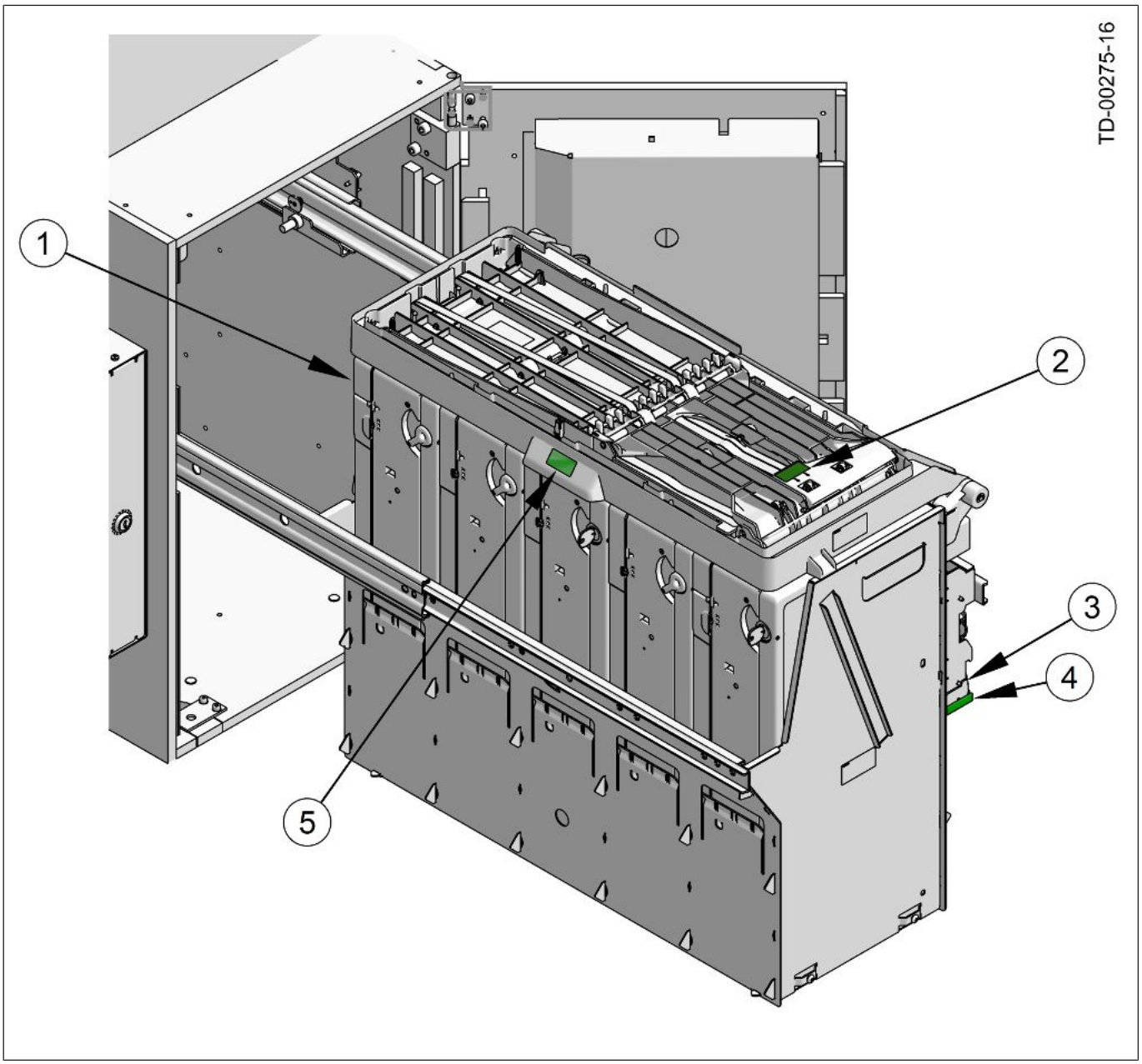

Figure 5-10: Safe Touch Points With RM4V Recycling Module

1	RM4V Recycling module cassettes
2	Loopback transport release latch
3	RM4V Recycling module lower unit release latch
4	RM4V Recycling module lower unit handle
5	Chest horizontal transport handle

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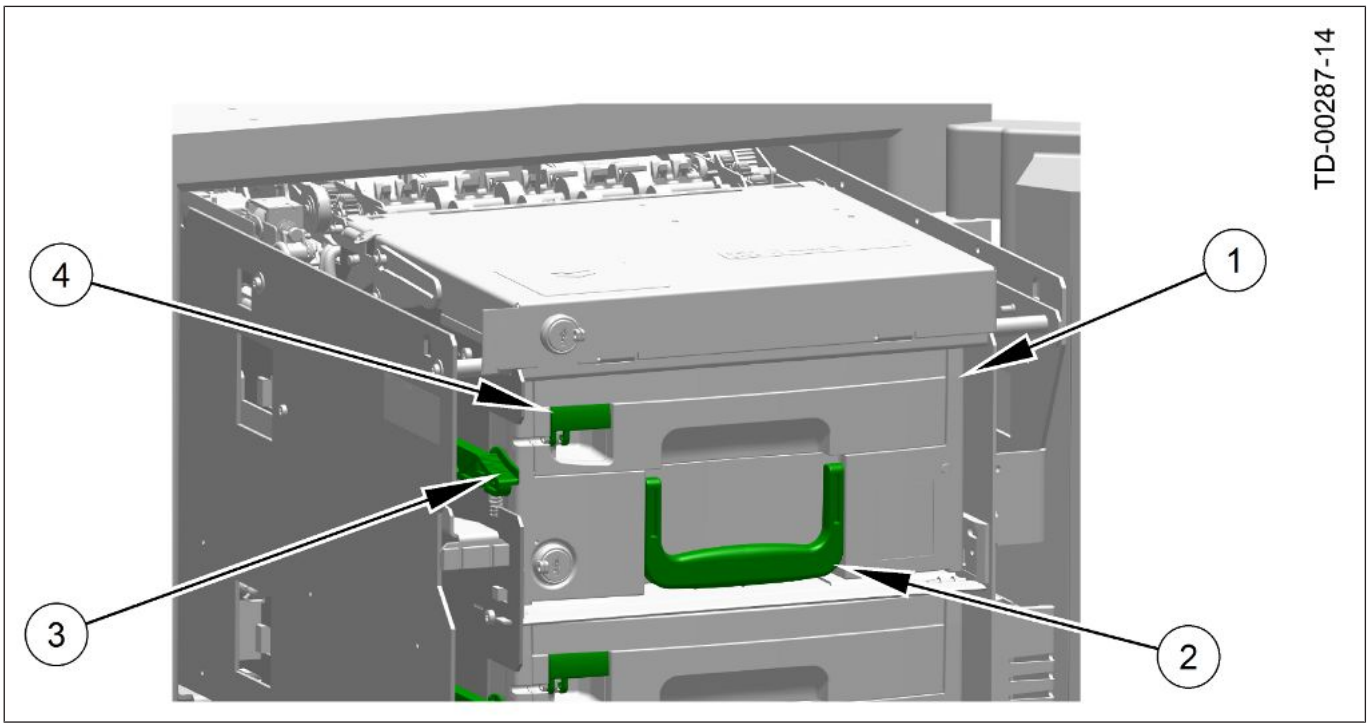

Figure 5-11: More Safe Touch Points With RM4H Recycling Module

1	RM4H Recycling module cassettes
2	RM4H Recycling module cassette handle
3	RM4H Recycling module cassette release latch (press down an inch back from the end of the lever)
4	RM4H Recycling module cassette lid release latch

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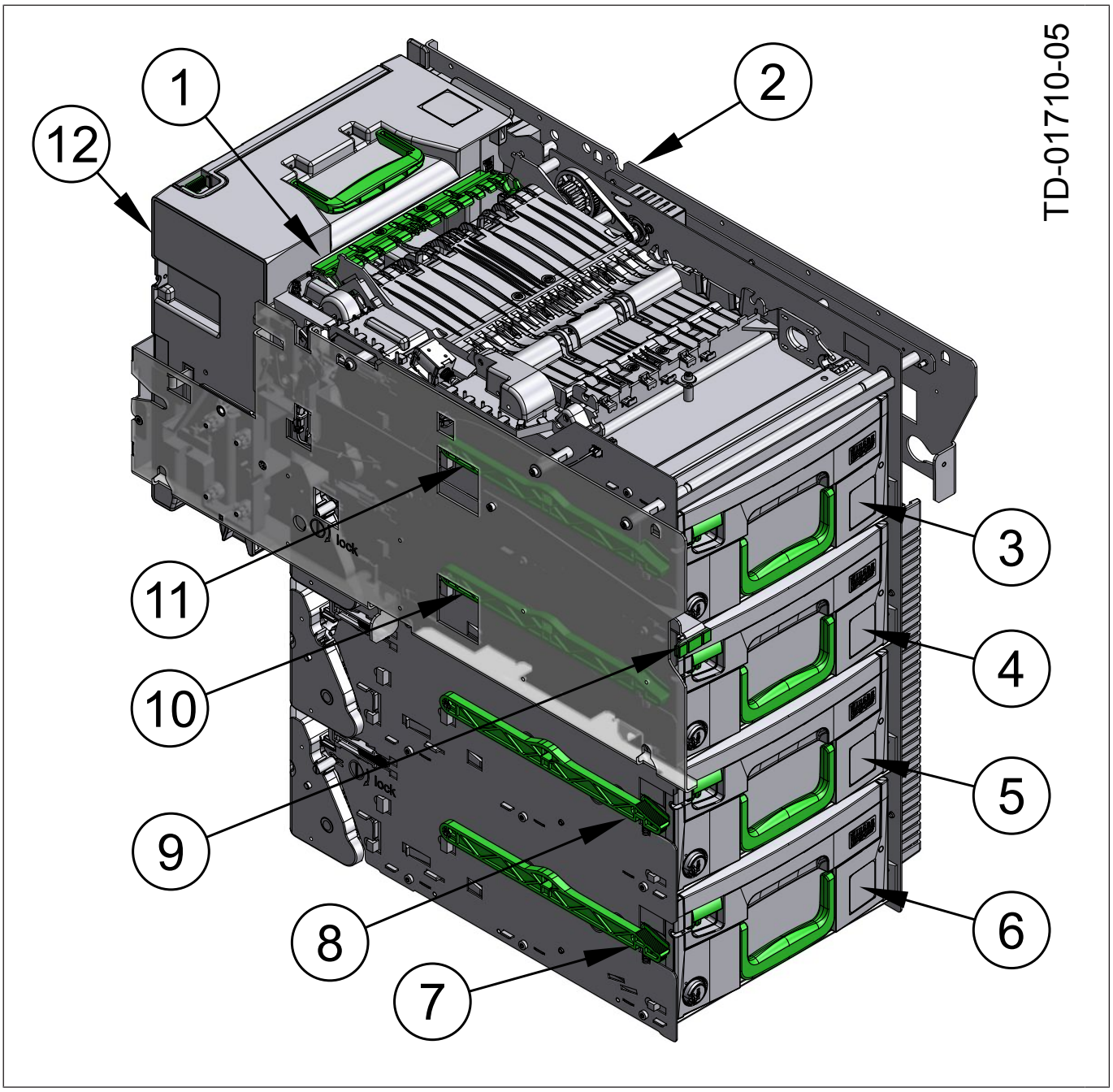

Figure 5-12: More Safe Touch Points with CMD-V6C

1	Safe distribution transport release lever
2	CMD-V6C lower module
3	Supply cassette
4	Supply cassette
5	Supply cassette
6	Supply cassette
7	Supply cassette release lever
8	Supply cassette release lever

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9	Locking/release lever for CMD-V6C lower module
10	Supply cassette release lever
11	Supply cassette release lever
12	Reject/Retract cassette

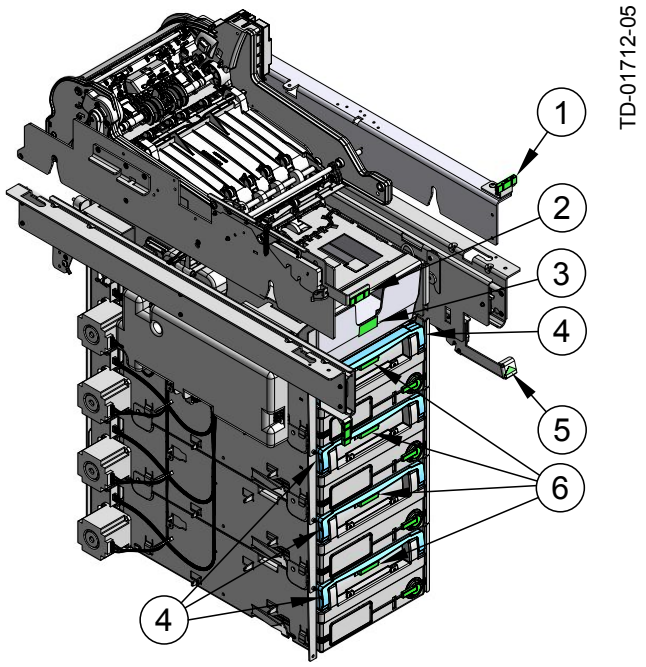

Figure 5-13: More Safe Touch Points with CMD-V6A

1	Handle
2	Head transport release lever
3	Divert bin handle
4	Supply cassette handle
5	CMD-V6A release latch
6	Supply cassette lid release latch

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5.4 Accessing the Rear Service Display

There are two versions of the rear service display. The rear service display can be located and used through the upper chassis rear door (*Figure 5-14*) , or used inside of the upper chassis rear door (*Figure 5-15*). The display can be used to perform certain maintenance procedures.

NOTE

For information about operating the rear service display to perform specific maintenance procedures using T/SOP, refer to the *Technical Service and Operating (T/SOP) for ProBase/C and ProBase/J User Manual* for more information.

5.4.1 Accessing Rear Service Display Through the Upper Chassis Rear Door

Perform the following steps to access the rear service display through the upper chassis rear door.

1. Insert the upper chassis door key into the lock on the rear service display cover.
2. Unlock and open the clear cover (*Figure 5-14*).
3. Use the rear service display.
4. Close and lock the clear cover.

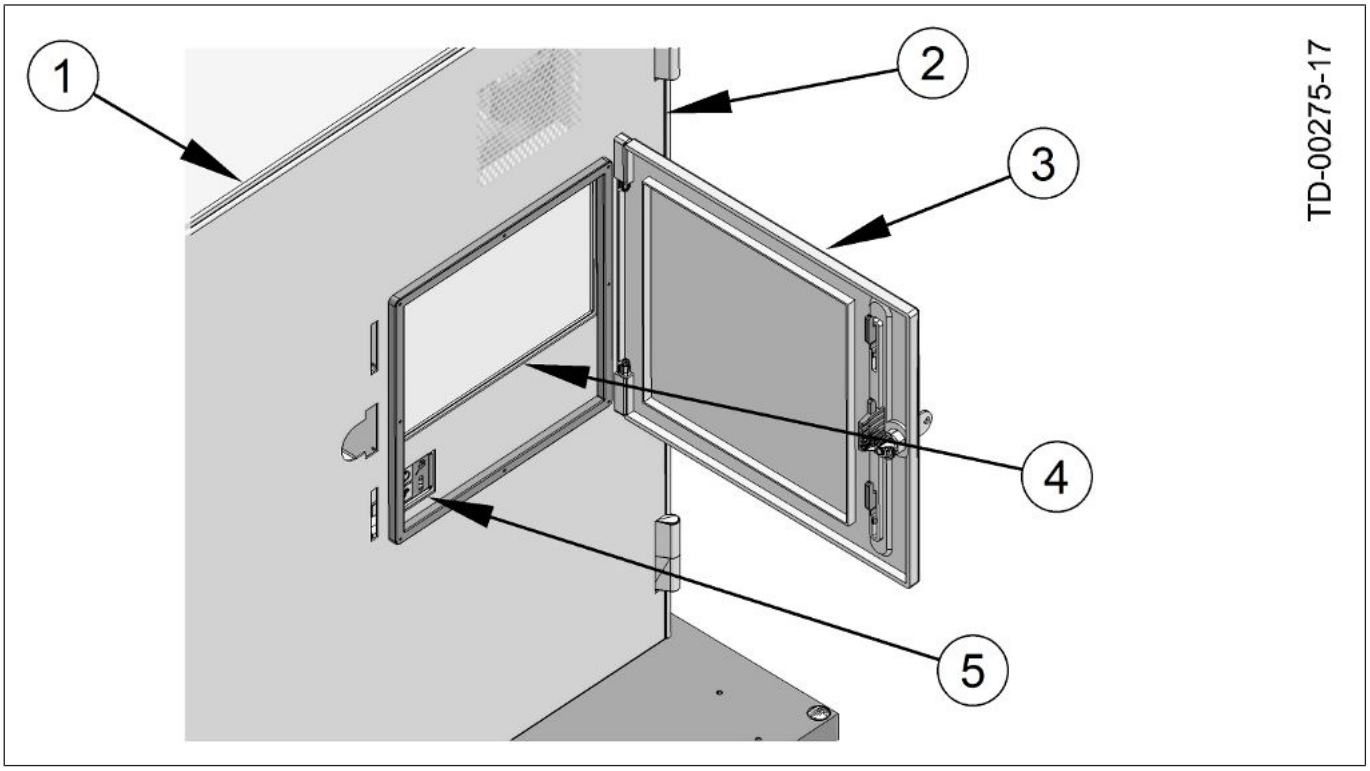

Figure 5-14: Accessing Rear Service Display Through the Upper Chassis Rear Door

1	Upper chassis
2	Upper chassis rear door in closed position
3	Rear service display clear cover

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4	Rear service display
5	External control unit

5.4.2 Accessing Rear Service Display Inside of the Upper Chassis Rear Door

Perform the following steps to access the rear service display inside of the upper chassis rear door.

NOTE

For information about operating the rear service display to perform specific maintenance procedures using T/SOP, refer to the *Technical Service and Operating (T/SOP) for ProBase/C and ProBase/J User Manual* for more information.

1. Open the upper chassis rear door. Refer to *Section 5.2.2*.
2. The rear service display is in the operation position (*Figure 5-15*).
3. Close the upper chassis rear door (*Section 5.2.3*).

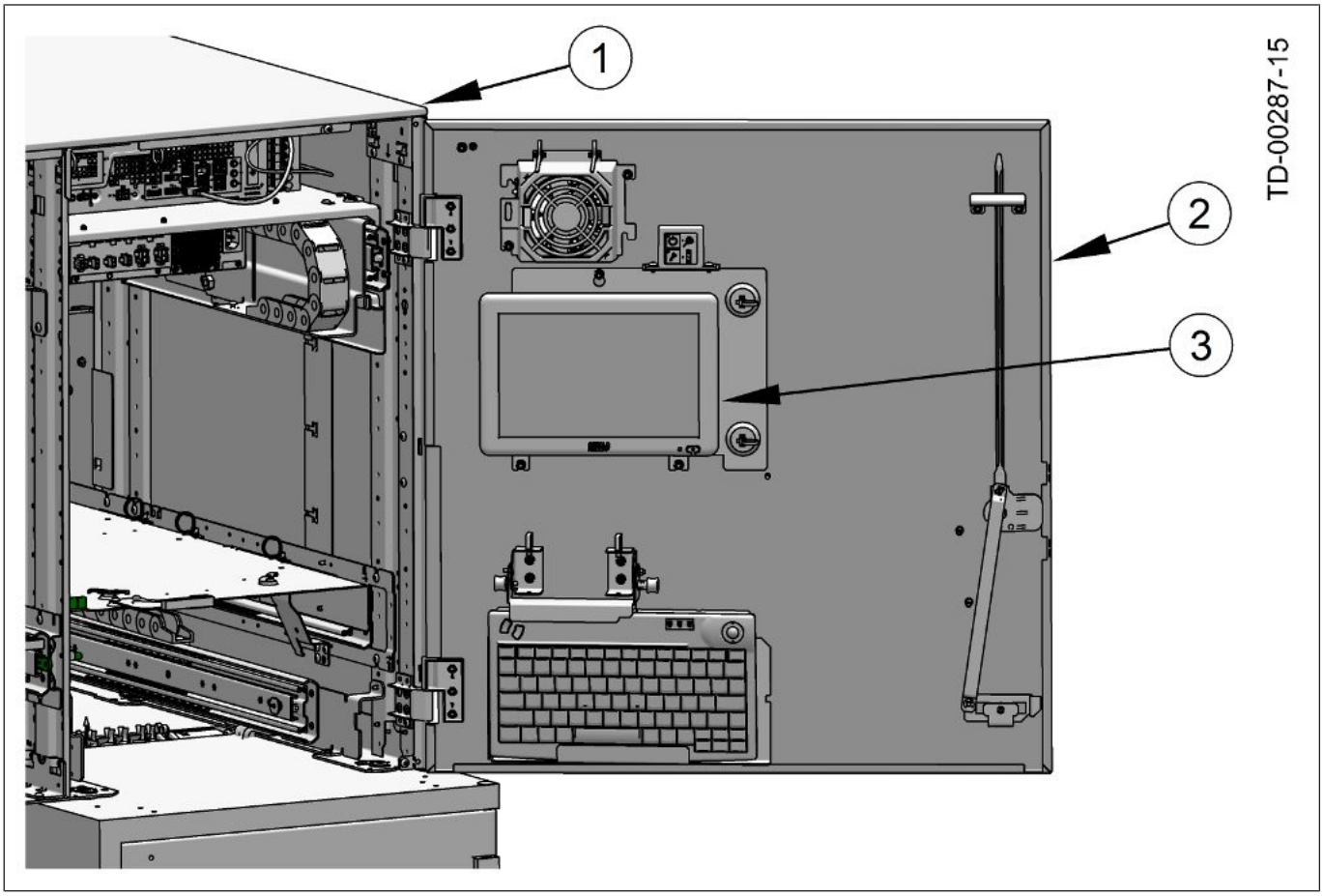

Figure 5-15: Accessing the Rear Service Display Inside of Upper Chassis Rear Door

1	Upper chassis
2	Upper chassis rear door in open position

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3	Rear service display in operational position

5.5 Pulling out / Pushing in Cash Components

NOTE

Cash Components

Different cash components are available for the DN Series. In the following figures the cash components are shown schematically.

The operation and maintenance of the cash components is described in the component-specific operator manual.

5.5.1 Pulling out / Pushing in upper unit

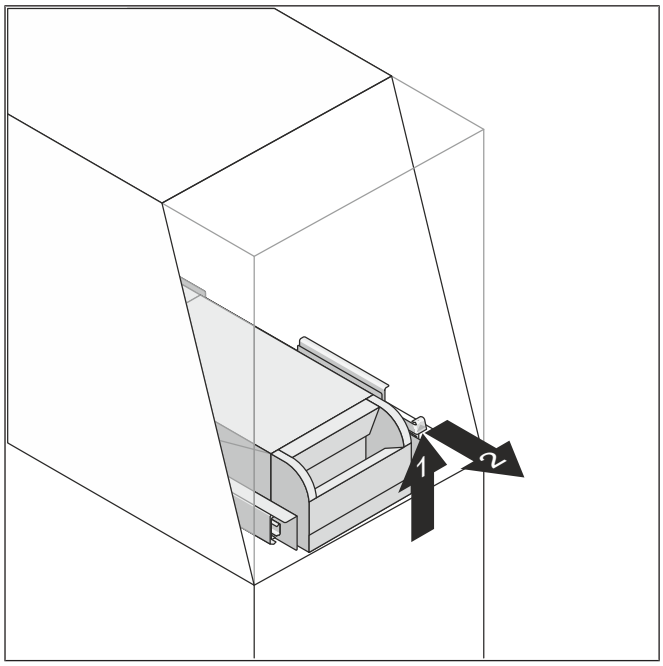

Figure 5-16: Pulling out the Upper Unit

1. Unlock the upper unit by the release lever (1).
2. Pull the upper unit out of the system by using the release lever (2).

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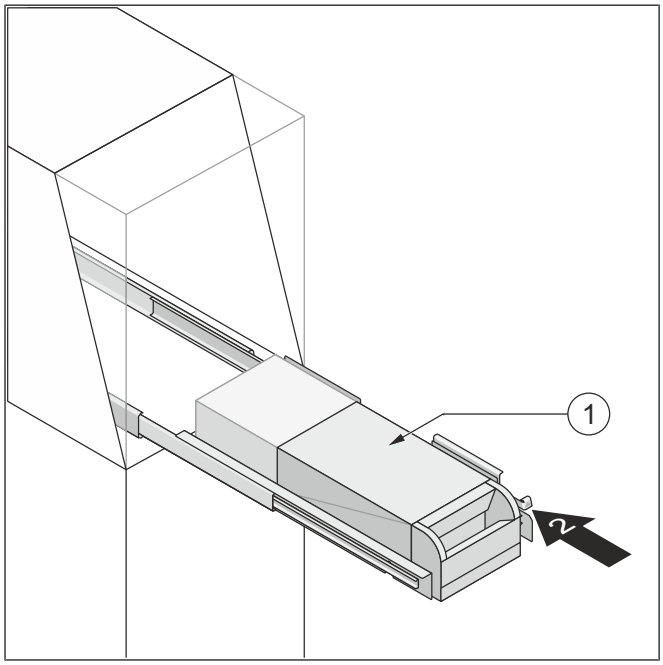

Figure 5-17: Pushing in the Upper Unit

3. Push the upper unit (1) into the system by using the release lever (2) .

5.5.2 Pulling out / Pushing in the Lower Unit

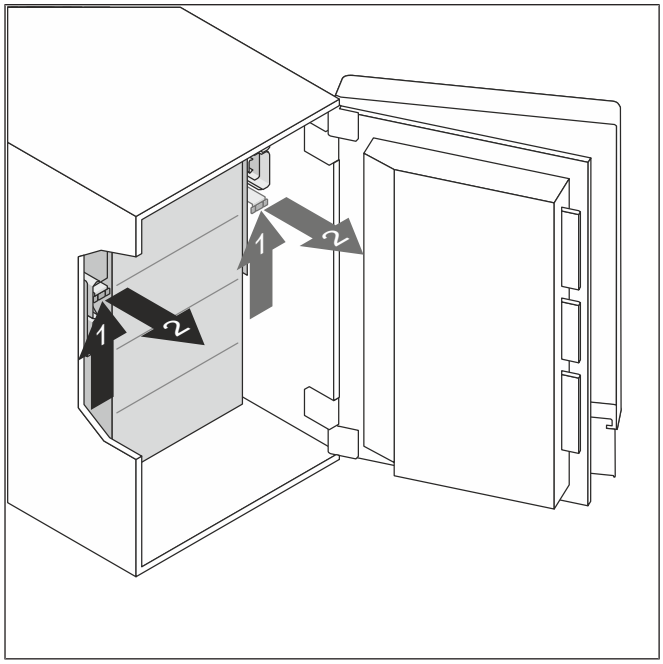

Figure 5-18: Pulling out the Lower Unit

✓ Note the different positions of the release lever (1). Depending on the component, the release lever can be located on the left or right side of the component. The release lever is marked green.

1. Pull the release lever upwards (1).
2. Pull the lower unit out of the system by using the release lever (2).

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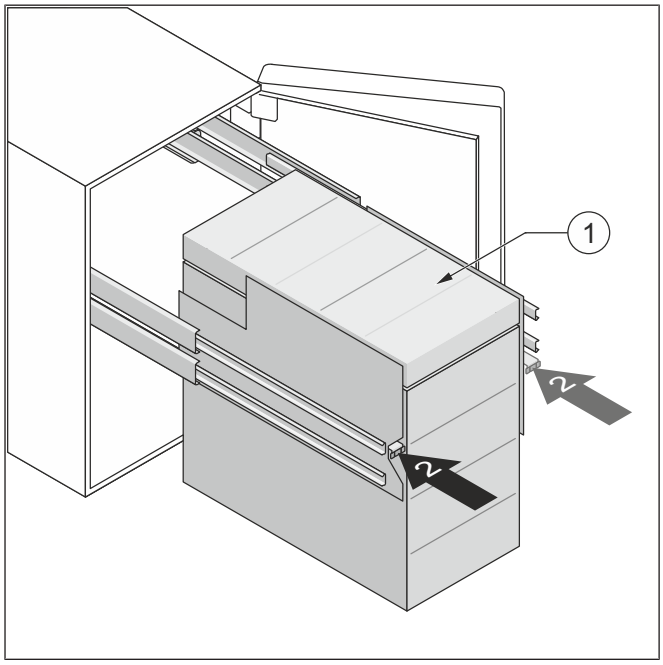

Figure 5-19: Pushing in the Lower Unit

3. Push the lower unit (1) into the system by using the release lever (2).

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5.6 Accessing the Check Deposit Module

Perform the following steps to access the check deposit module.

1. Unlock and open the upper chassis rear door (refer to *Section 5.2.2*).
2. Slide out the main component tray (see *Figure 5-20*).
3. Perform specific maintenance procedures on the check deposit module. Refer to the module operating manuals listed in *Appendix A* for specific maintenance procedures for this module.
4. Push the main component tray completely into the upper chassis until it latches securely in place.
5. Close and lock the upper chassis rear door (refer to *Section 5.2.3*).

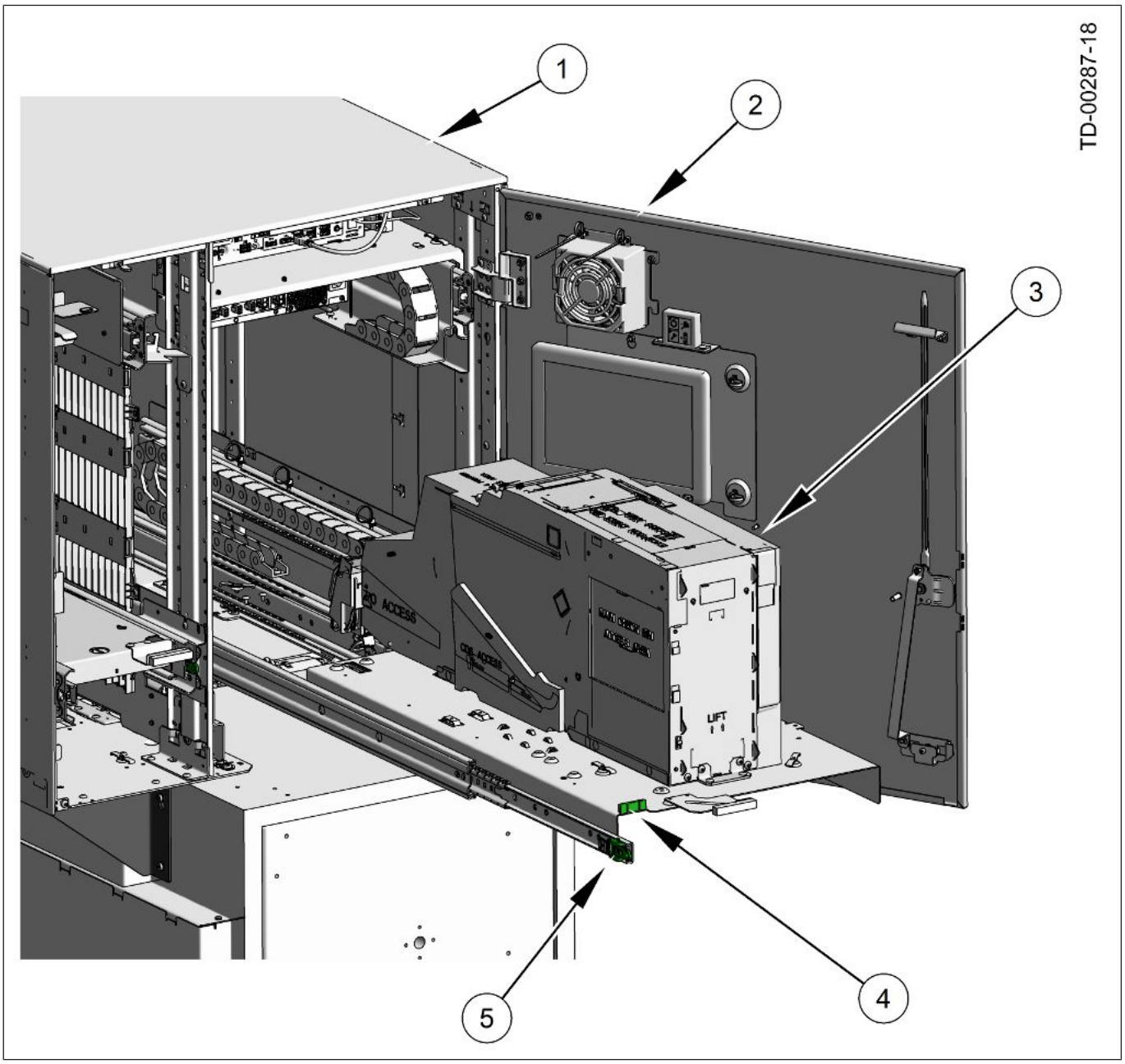

Figure 5-20: Accessing the Check Deposit Module

1	Upper chassis	4	Main component tray release handle
2	Upper chassis rear door	5	Main component tray release latch

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3	Check deposit module on component tray		

5.7 Accessing the Card Retain Bin and the Receipt Printer

Perform the following steps to access the card retain bin and the receipt printer.

1. Unlock and open the upper chassis rear door (refer to *Section 5.2.2*).
2. Release the green latch for the main component tray and use the handle to extend the tray (see *Figure 5-21*).
3. Perform the necessary maintenance activity. Refer to the module operating manuals listed in *Appendix A* for specific maintenance procedures for these modules.
4. Push the component tray back into the system until it latches securely in place.
5. Close the upper chassis rear door (refer to *Section 5.2.3*).

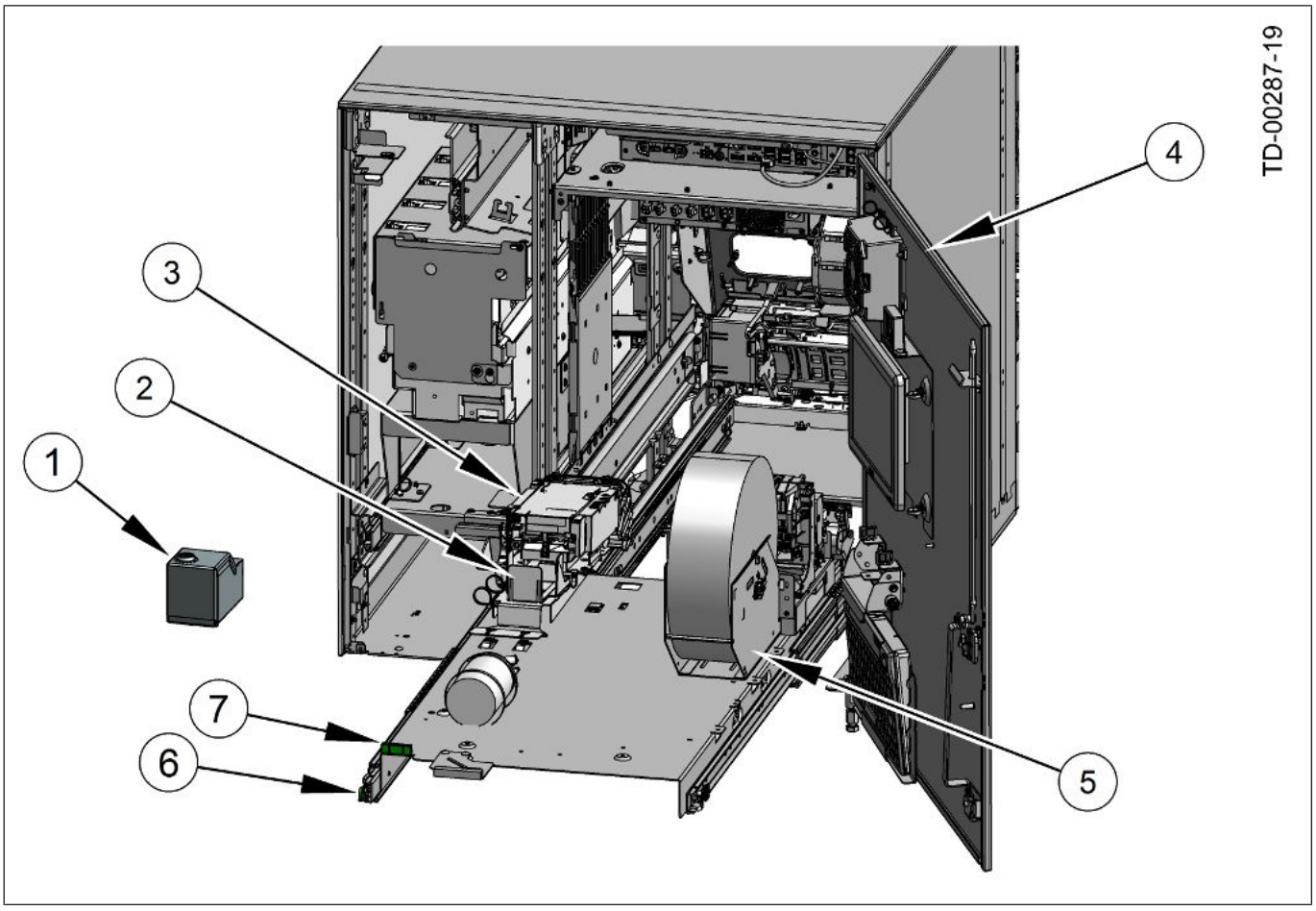

Figure 5-21: Accessing the Card Retain Bin and the Receipt Printer

1	Lockable card retain box or lockable/removable card box	5	Receipt printer
2	Card retain bin	6	Component tray release latch
3	Motorized card reader	7	Component tray handle
4	Upper chassis rear door		

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5.8 Accessing the Lockable/Removable Card Box

Perform the following steps to access the lockable/removable card box.

1. Pull the card box from its mount in the direction of the arrow (*Figure 5-22*).

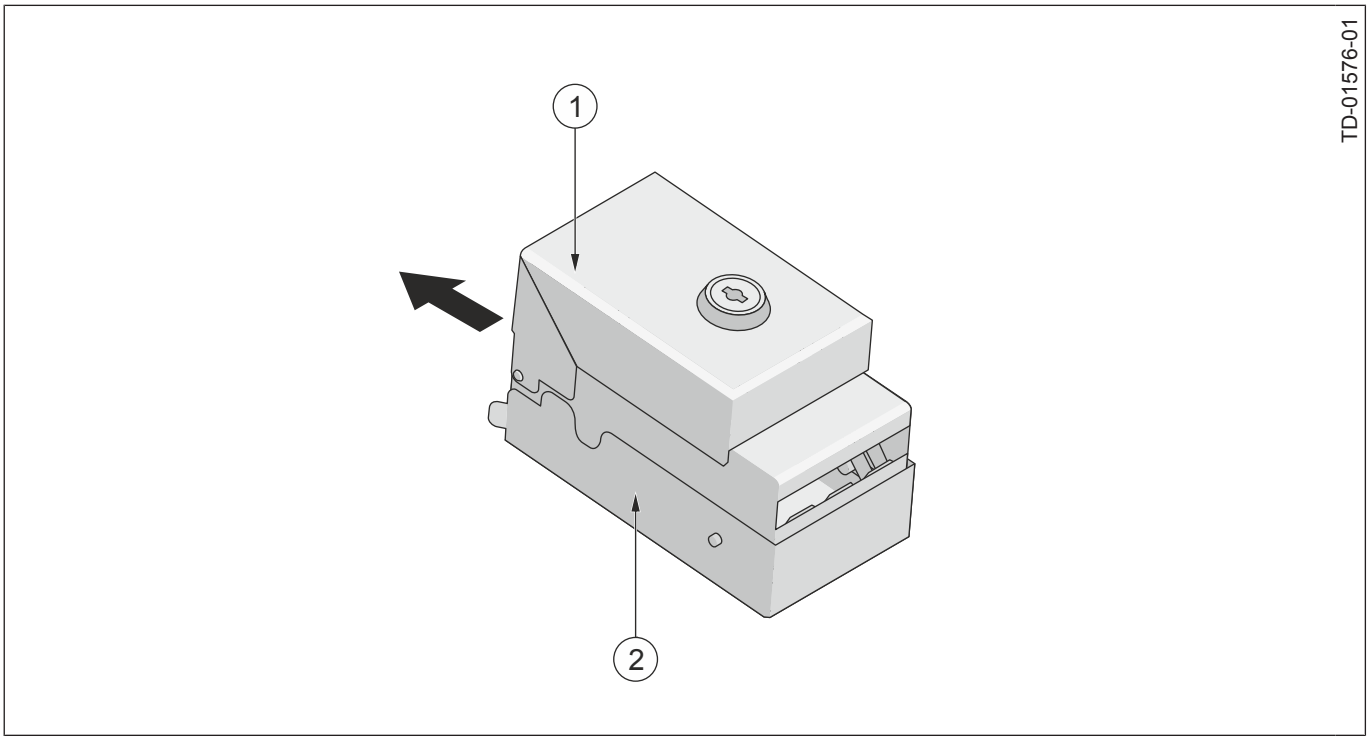

Figure 5-22: Removing the Card Box

1	Card box lockable cover
2	Card box

2. Unlock the card box and open the cover. Remove any cards.
3. Close and lock the card box cover.
4. Push the card box into its mount until it audibly locks into place (*Figure 5-23*).

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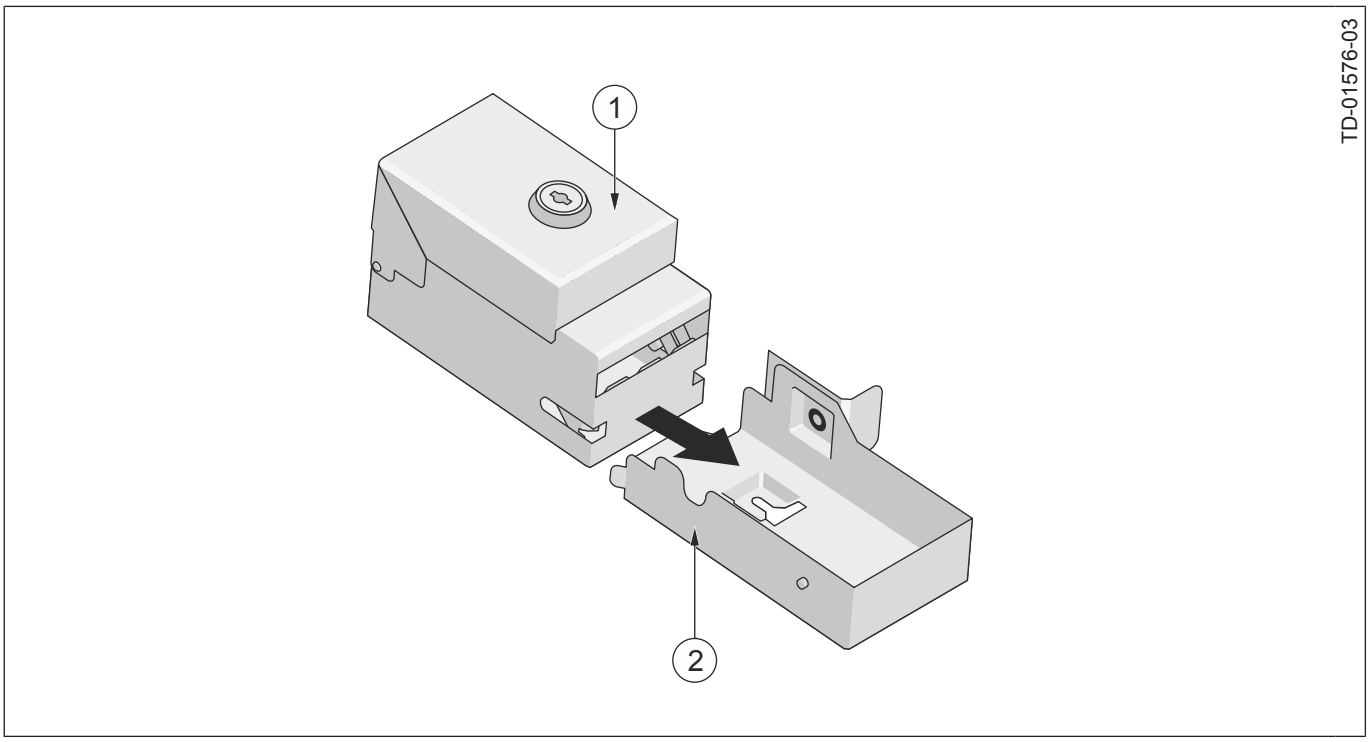

Figure 5-23: Reinstalling the Card Box

1	Lockable/removable card box
2	Card box mount

5.9 Accessing the Coin Dispenser

Perform the following steps to access the coin dispenser tray.

1. Unlock and open the upper chassis rear door (refer to *Section 5.2.2*).
2. Release the latch for the coin mounting tray (see *Figure 5-24*).
3. Use the mounting tray green handle to extend the tray to the service position. The coin dispenser is now accessible.
4. Perform the necessary maintenance activity. Refer to the module operating manuals listed in Related Documentation for specific maintenance procedures for the module.
5. Push the coin dispenser tray back into the system until it latches securely in place.
6. Close and lock the upper chassis rear door (refer to *Section 5.2.3*).

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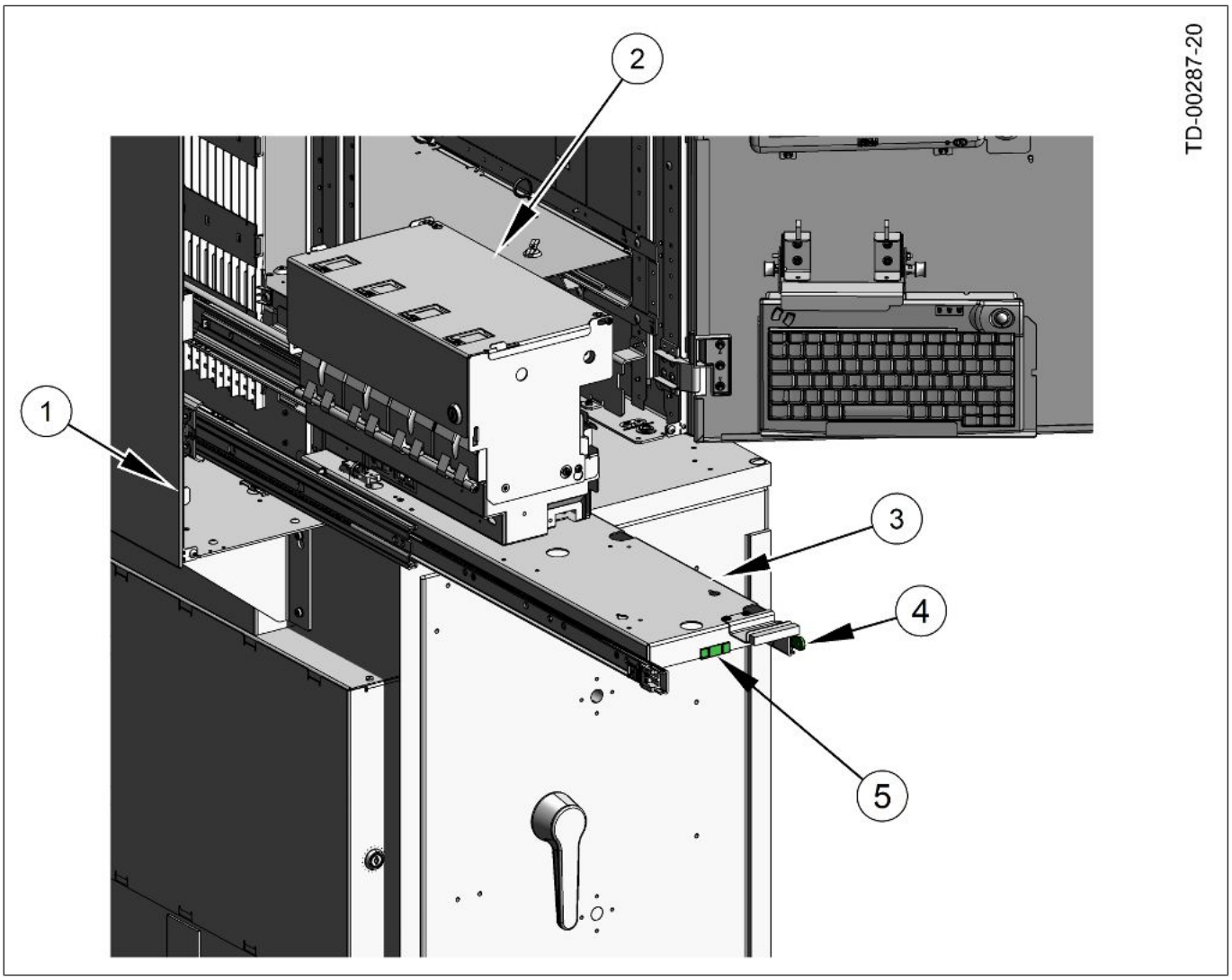

Figure 5-24: Accessing the Coin Dispenser

1	Upper chassis
2	Coin dispenser
3	Coin dispenser mounting tray
4	Mounting tray release latch
5	Mounting tray handle

5.10 How to Read Bar Codes

Perform the following steps to read a bar code.

1. Check to make sure the bar code scanner light is active.
2. Bring the bar code to the scanner to be read.
3. Place the scanner light at the center of the bar code and wait for the scanner to pick up the data (*Figure 5-25*).
4. You may have to move the scanner light up and down the bar code to get a reading.

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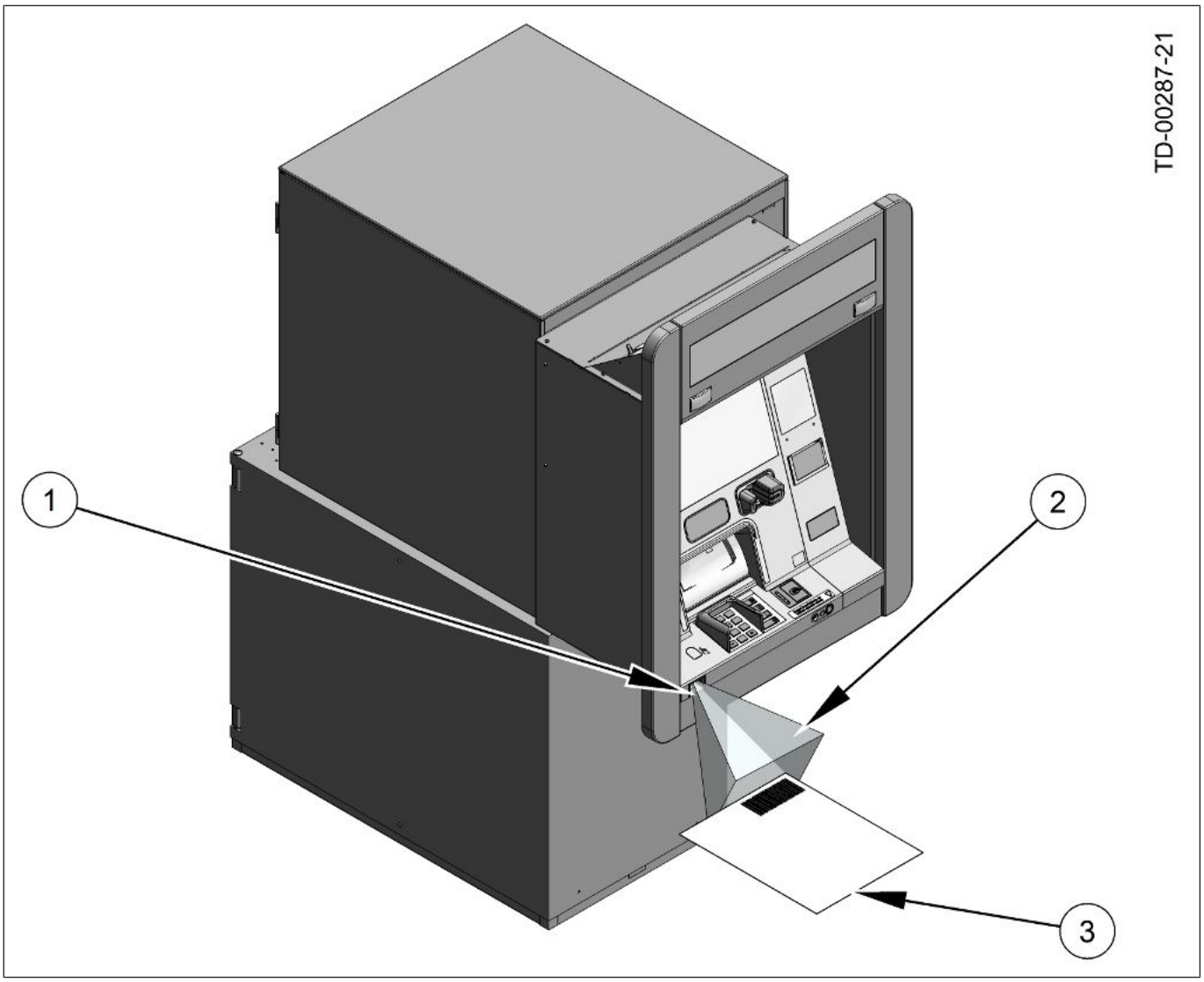

Figure 5-25: How to Read Bar Codes

1	Bar code scanner
2	Light
3	Bar code

5.11 Accessing the Safe

There are many types of safes and safe locks available for the system and is dependent upon customer requirements. The safe and locks discussed in this manual are the most commonly used among our customers.

Mechanical Keylock

A removable key may be used to unlock the safe door lock bolt. Then the handle is turned to open the safe door. A mechanical keylock can also be used before entering the combination for the combination lock.

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Mechanical Combination Lock

This lock requires a combination to be entered manually through the lock dial. When the code is successfully entered, the lock dial is turned to the right to release the lock bolt. Then the handle can be turned to open the safe.

Safe Opening Handle

Safe opening handles are present with single mechanical combination locks and with electronic combination locks. Safe opening handles are used to release the safe door after you enter the correct combination on the mechanical combination lock or electronic combination lock keypad.

5.12 Opening/closing the safe door

5.12.1 Opening/closing the safe door (with factory setting)

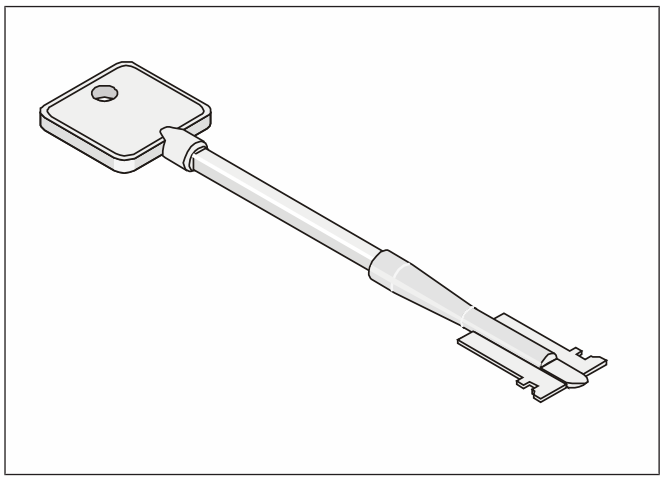
NOTE

The safe can be fitted either with one number combination lock and one key-operated lock or, optionally, with two number combination locks. The second number combination lock is opened in the same way as the first one.

An electronic lock is also optionally available. In this case, please refer to the manufacturer's operating instructions included with the system.

NOTE

The standard key supplied with the device is used to open the safe door for the first time. The key-operated lock must then be set to the original key. It is not allowed to use the standard key several times or even permanently.



Standard key

This key is used to open the safe door with the factory-preset number combination lock.

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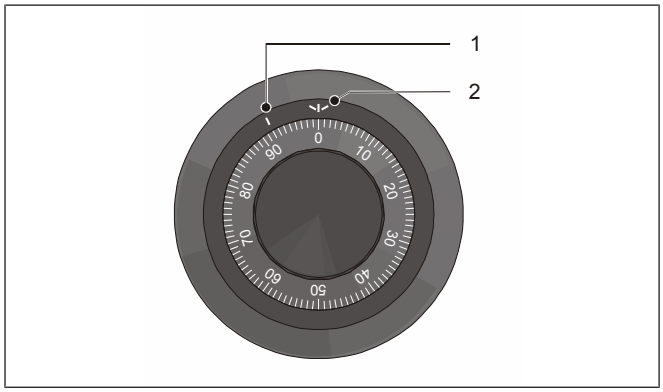
5.12.1.1 Opening the safe door (with factory setting)

1. Activate the product-specific software (see system manual, chapter "Basic operation", section "Calling up product-specific software").
2. Call up the function for the measure you require on .

NOTE

If the safe is connected to an alarm system, opening the safe or discarding the number combination may be blocked. In this case, you will have to disarm the intruder alarm system first.

Indexes on the number combination lock



1 = Changing index

2 = Opening index

Setting the number combination on the number combination lock

NOTE

Turn the dial slowly and steadily. Never use force and do not turn the dial backwards. If you turn past a number in the combination, you will have to re-dial the entire combination. Do not count the number of turns but the number of times the numbers appear below the opening index.

The number combination lock is preset at the factory.

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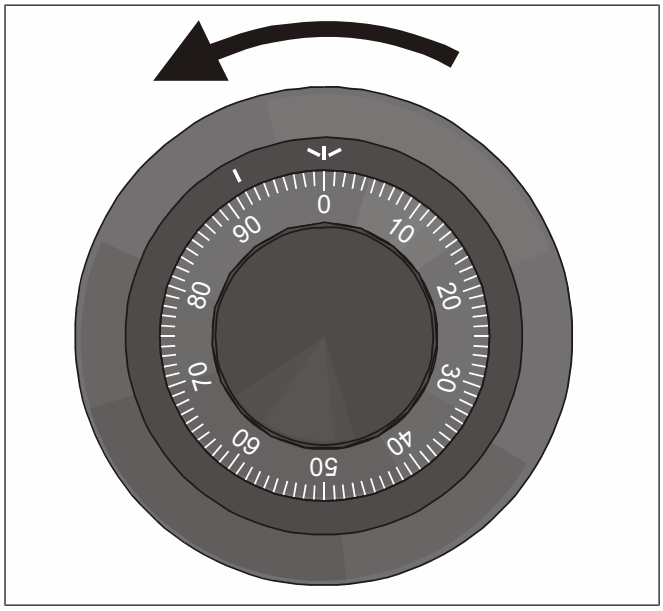
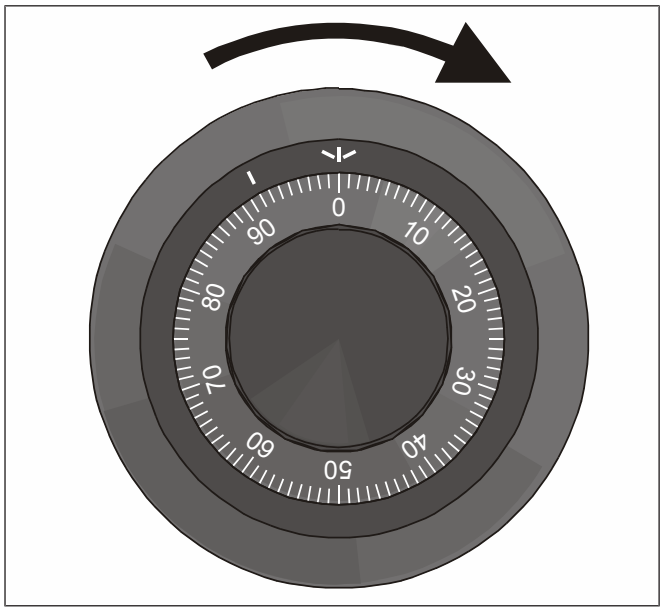
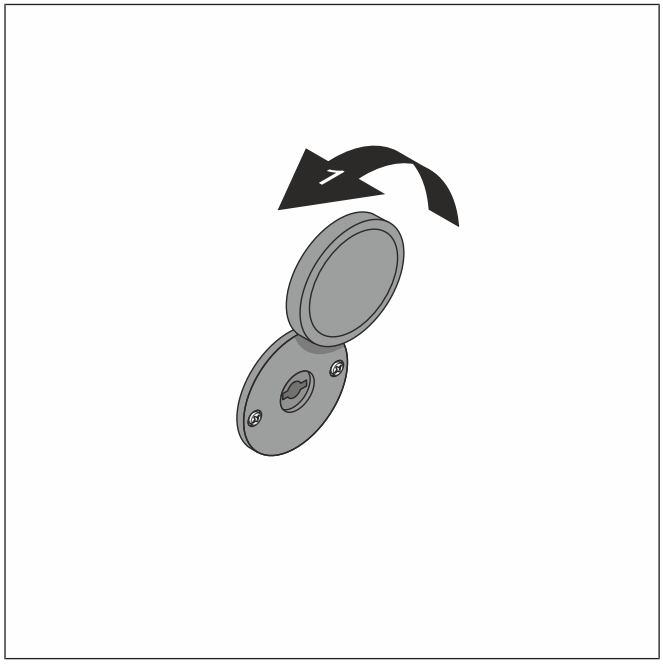


3. Turn the dial of the number combination lock four complete turns counterclockwise and stop with '50' positioned exactly below the opening index.



4. Then turn the dial of the number combination lock clockwise as far as possible.

This releases the number combination lock.



5. Open the key-operated lock cap (if installed).

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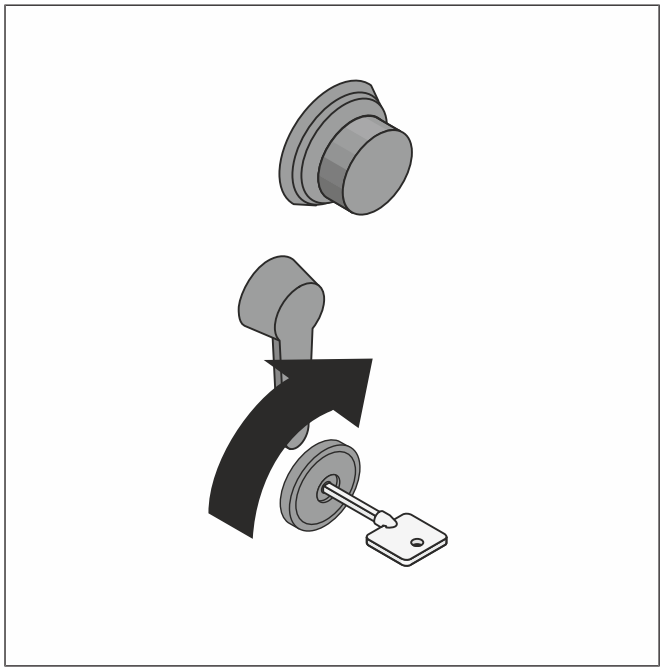
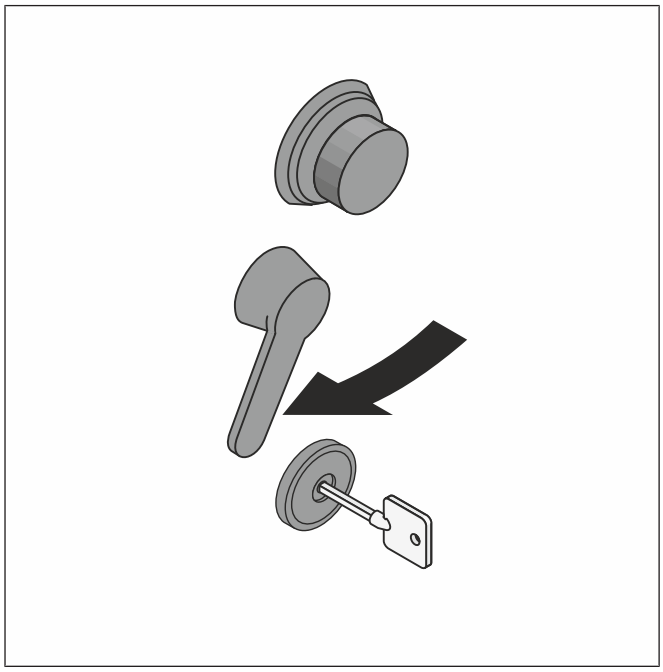


6. Insert the standard key into the lock.
7. Turn the key clockwise as far as possible.



8. Turn the locking/unlocking lever or wheel counterclockwise as far as possible.
9. Open the safe door as far as possible.

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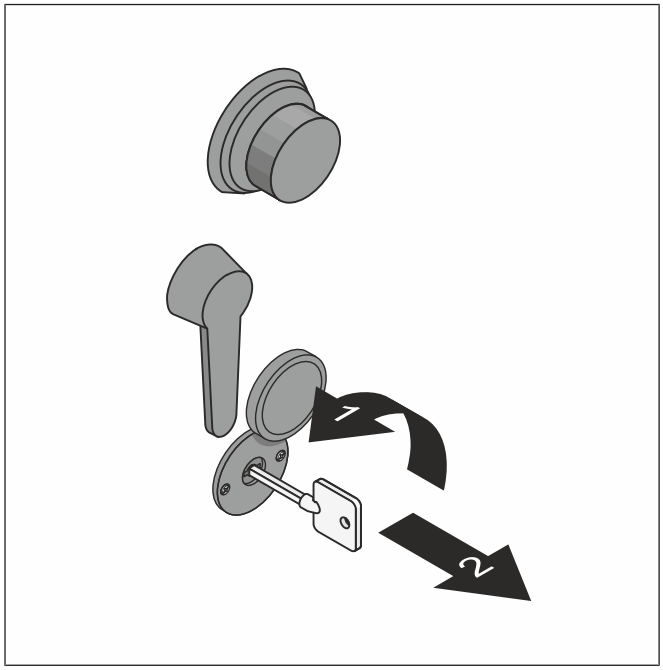
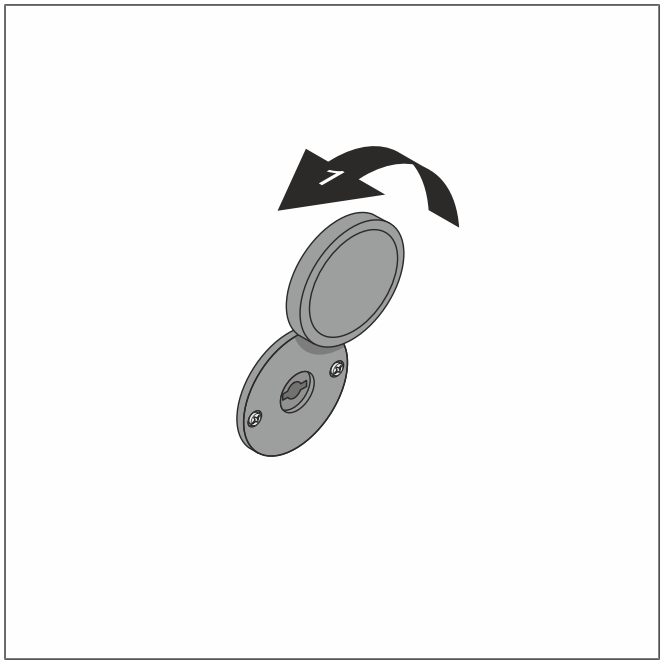
5.12.1.2 Closing the safe door (with factory setting)

1. Close the safe door.
2. Turn the locking/release lever to clockwise as far it goes.
3. Exit the product-specific software.



4. Turn the key counter-clockwise as far as possible (1).
5. Remove the key from the lock (2).



6. Close the cap of the lock (if installed).

NOTE

To change the number combination, you must turn the dial at least one full turn to the left and then four full turns to the right.

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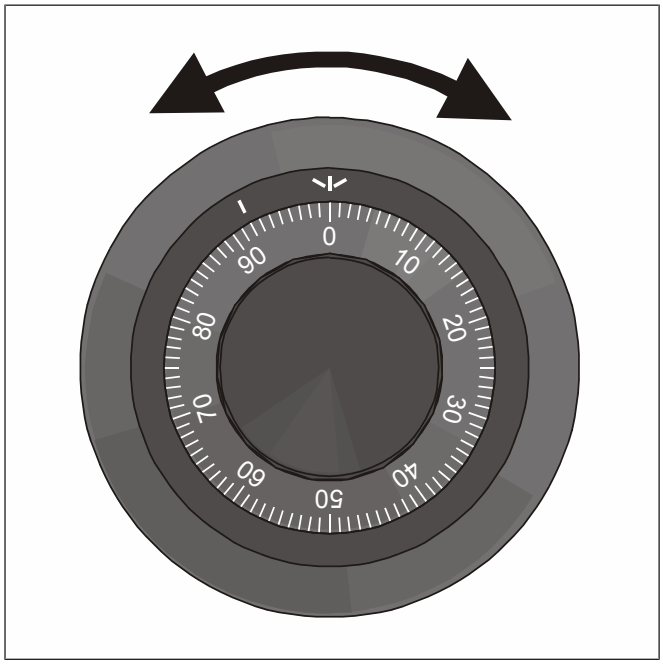

Changing (discarding) the number combination

7. To discard the number combination rotate the dial at least one full turn counterclockwise and then at least four turns clockwise.

8. Close the system (see section "Opening/closing the system doors")

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5.12.2 Customizing the key and number combination locks

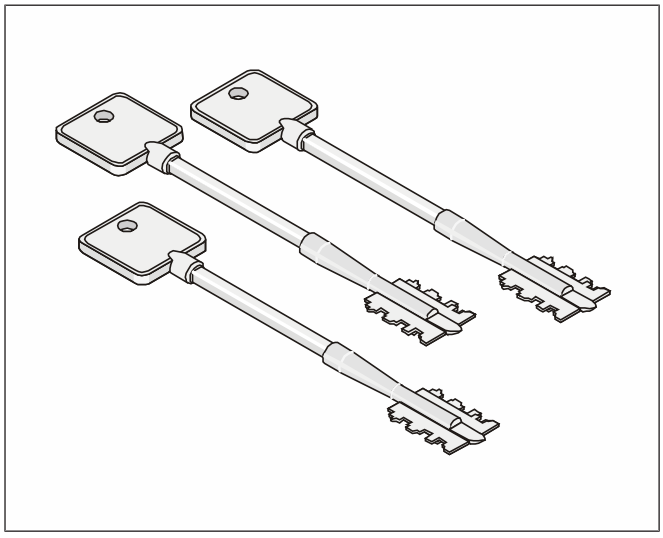
NOTE

After the system is installed, the key lock must be set to fit the three original keys and the combination lock must be set to a new and/or your own number combination.

NOTE

The safe can be fitted either with one number combination lock and one key-operated lock or, optionally, with two number combination locks. The second number combination lock is customized the same way as the first one.

An electronic lock is also optionally available. In this case, please refer to the manufacturer's operating instructions included with the system.



3 Original keys:

These keys are used to open the safe door after system installation.

5.12.2.1 Customizing the key-operated lock

NOTE

- Read this section carefully before customizing the lock.

- Customize the lock with the safe door open. To open the safe door, refer to the descriptions in the respective sections ("Opening/closing the safe door (with factory setting)" or "Opening/closing the safe door (with customized lock)"), depending on the installation status.

- Never force the lock or key.

- Always keep your keys in a safe place.

- If you lose or misplace a key, always change the lock to fit a new key immediately, even if the original key (the previous key) is recovered.

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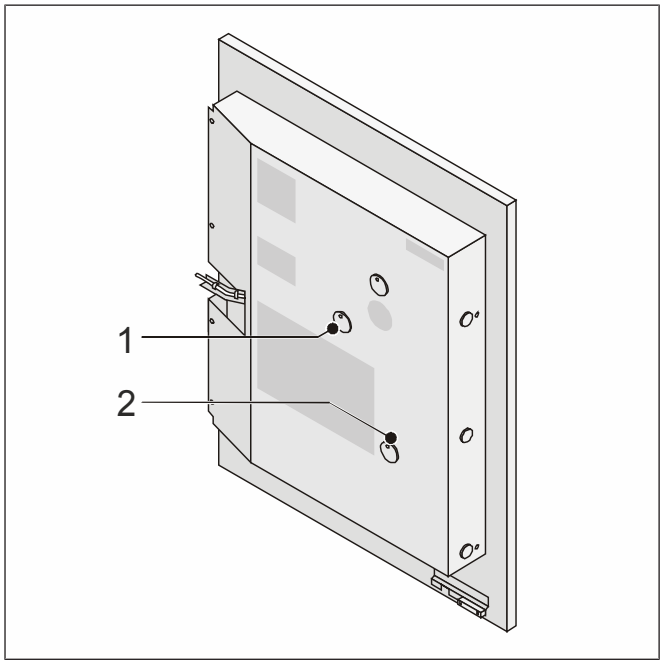
Customization process

1. Open the safe door and close the bolt work (by turning the locking/release lever clockwise as far as possible).
2. **With the safe door open**, turn the valid key counterclockwise as far as possible (closing).
3. Remove the key.

NOTE

The position of the service opening on the inside of the safe door depends on the safe type used. The illustration shows possible locations (1) or (2) of the sealing plug or the flap.



4. On the inside of the safe door either remove the sealing plug of the service opening or push the flap of the service opening aside.
5. Press the pushbutton behind the sealing plug or the flap and keep it pressed.
6. Insert the old key and turn it clockwise as far as possible (opening; approx. 180 degrees).
7. Release the pushbutton and remove the key (without turning the key again!).
8. Insert the new key and turn it counterclockwise as far as possible (closing; approx. 180 degrees).
9. Remove the key.

The lock is now set to the new key.

NOTE

Before you close the door, check at least three times that the lock works correctly with the new key.

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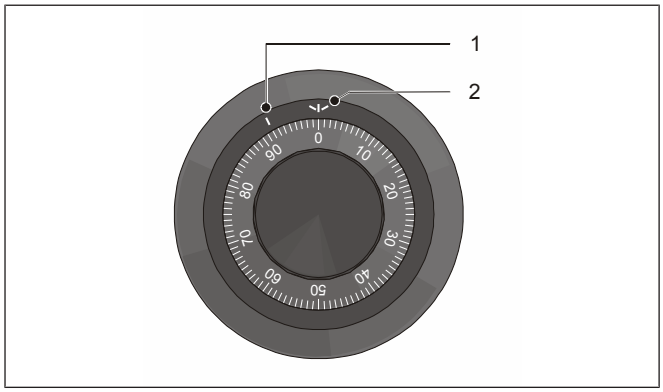
5.12.2.2 Customizing the number combination lock

NOTE

Turn the dial slowly and steadily. Never use force and do not turn the dial back if you turn past a number in the combination. Restart the whole procedure. Do not count the number of turns but the number of times the numbers appear below the opening index.

Indexes on the number combination lock



1 = Changing index

2 = Opening index

1. Open the lock with the existing combination (see sections "Opening/closing the safe door (with factory setting) or (with customized lock)").
2. Open the safe door.
3. Close the lock with the safe door open.
4. Now dial the existing combination on the **changing index**. Stop at the third, i.e. the last, number on the **changing index.**

NOTE

The position of the service opening on the inside of the safe door depends on the safe type used. The illustration shows possible positions (1) or (2) of the service opening for the reset key.

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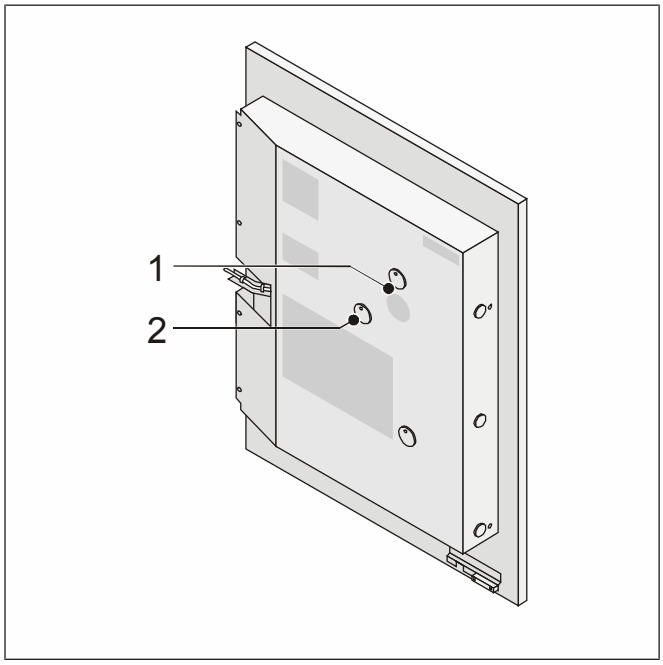

5. Insert the reset key included with the device as far as possible into the service opening on the inside of the safe door.
6. Turn the reset key 90 degrees counter-clockwise.

5.12.2.3 Setting the new 3-digit code, e.g. 60 - 33 - 43

NOTE

The safe door must remain open until you have tested the new combination at least three times. The third number must not be between 95 and 20.

1. Rotate the dial counterclockwise until '60' is under the **changing index** for the fourth time.
2. Rotate the dial clockwise until '33' is under the **changing index** for the third time.
3. Rotate the dial counterclockwise until '43' appears under the **changing index** for the second time.
4. Turn the reset key 90° clockwise (original position) and remove it.
5. Test the new combination on the **opening index** at least 3 times with the safe door open.

The new code is now set.

NOTE

Test the new combination on the opening index at least 3 times **with the safe door open**.

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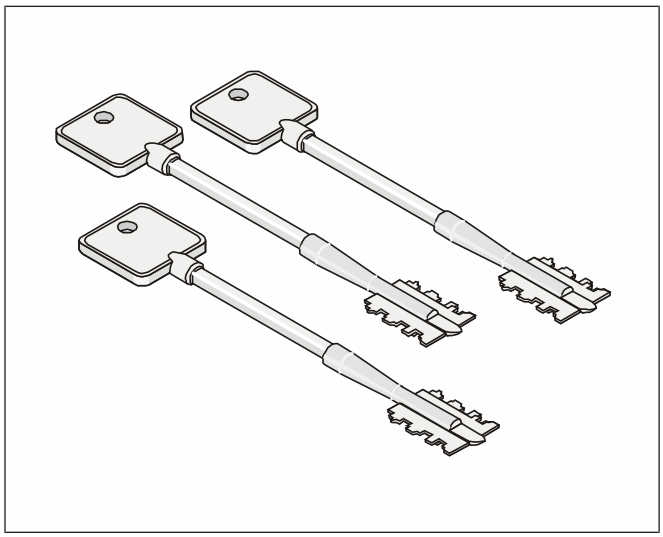
5.12.3 Opening/closing the safe door (with customized lock)

NOTE

The safe can be fitted either with one number combination lock and one key-operated lock or, optionally, with two number combination locks. The second number combination lock is opened in the same way as the first one.

An electronic lock is also optionally available. In this case, please refer to the manufacturer's operating instructions included with the system.

The system comes with three original keys, which are used to open and close the safe door after installation:



3 Original keys:

These keys are used to open the safe door after system installation.

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5.12.3.1 Opening the safe door (with customized lock)

1. Activate the product-specific software (see system manual, chapter "Basic operation", section "Calling up product-specific software").
2. Call up the function for the measure you require on .

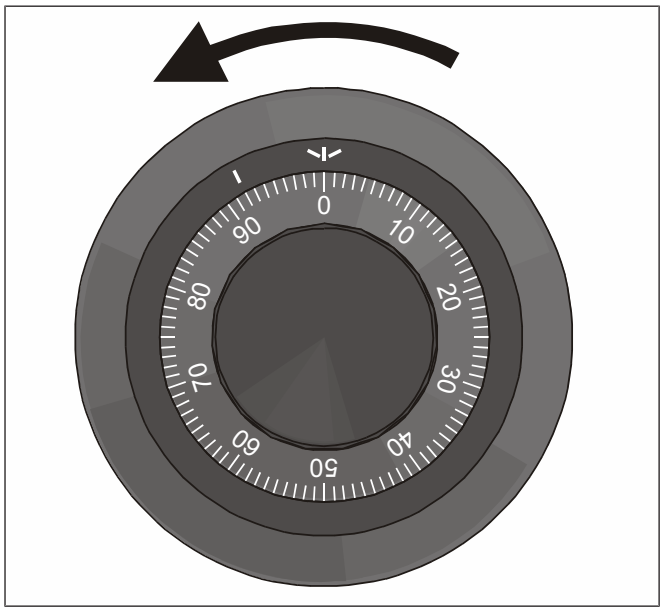
NOTE

If the safe is connected to an alarm system, opening the safe or discarding the number combination may be blocked. In this case, you will have to disarm the intruder alarm system first.

Opening the number combination lock with 3-digit code

NOTE

Turn the dial slowly and steadily. Never use force and do not turn the dial back if you turn past a number in the combination. Restart the whole procedure. Do not count the number of turns but the number of times the numbers appear below the opening index.



3. Turn the dial counterclockwise until the first number appears exactly below the opening index for the fourth time.

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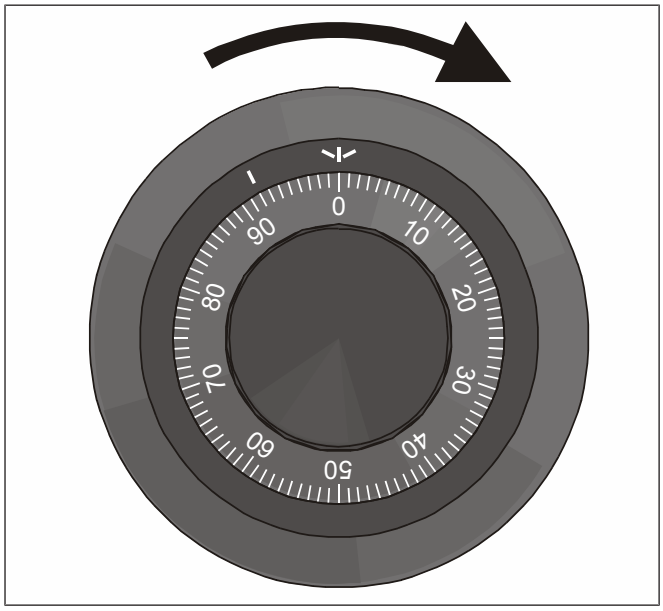
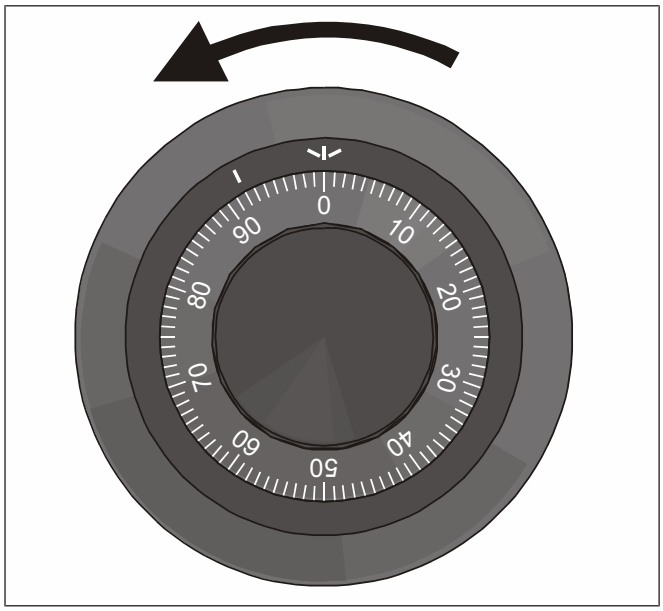
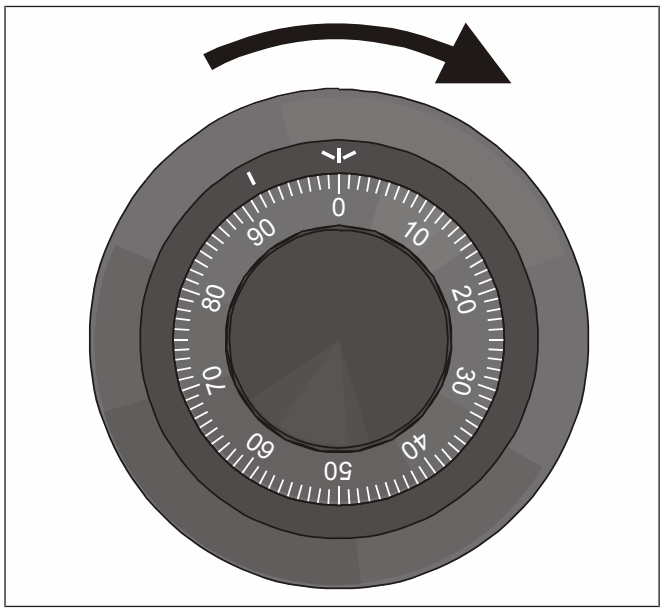


4. Turn the dial clockwise until the second number appears exactly below the **opening index** for the third time.



5. Turn the dial counterclockwise until the third number appears exactly below the **opening index** for the second time.



6. Then turn the dial clockwise as far as possible.

This releases the number combination lock.

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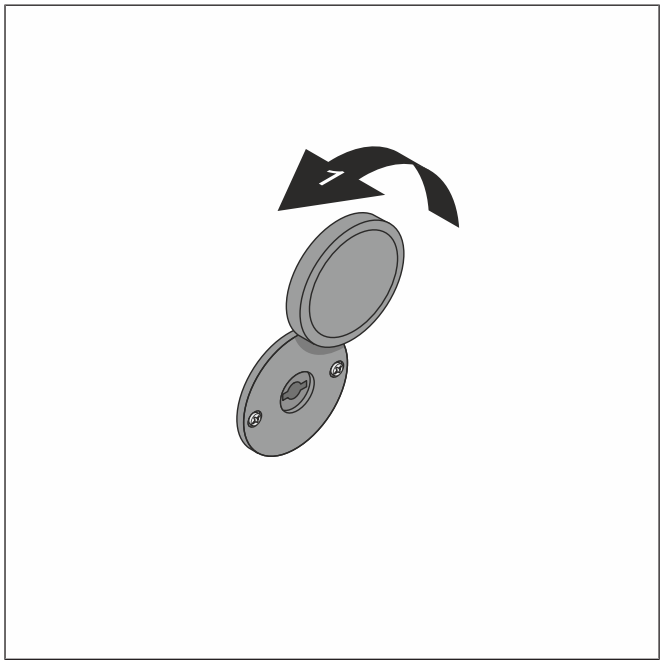
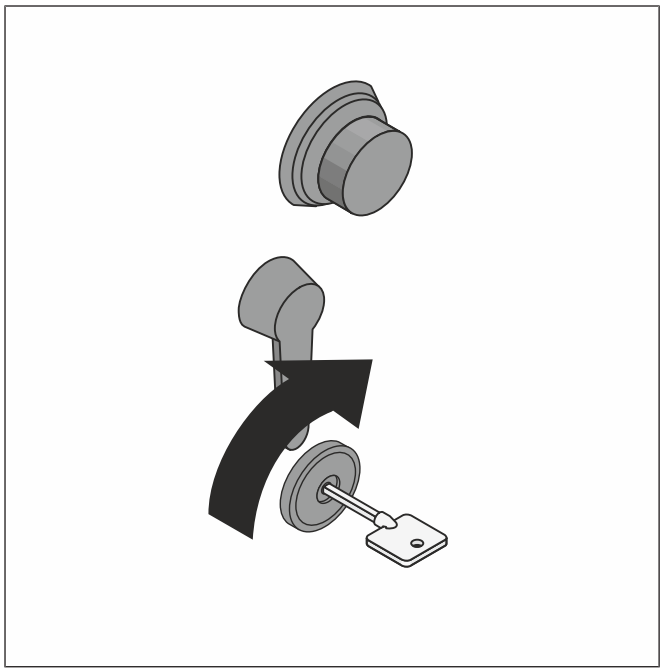


7. Open the key-operated lock cap (if installed).



8. Insert the original key into the lock.
9. Turn the key clockwise as far as possible.

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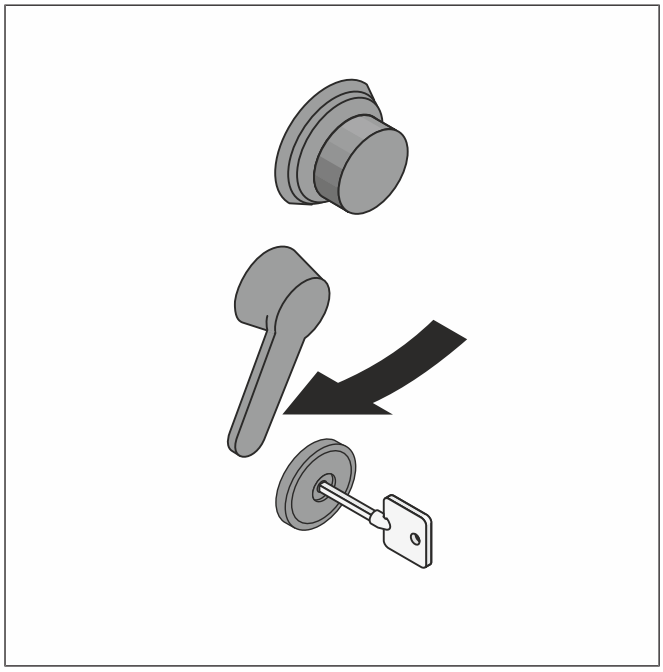

10. Turn the locking/unlocking lever or wheel counterclockwise as far as possible.
11. Open the safe door as far as possible.

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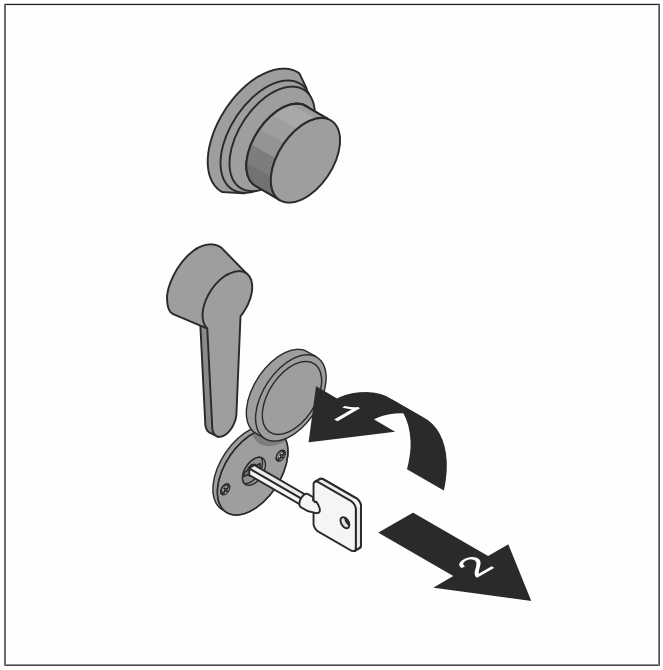
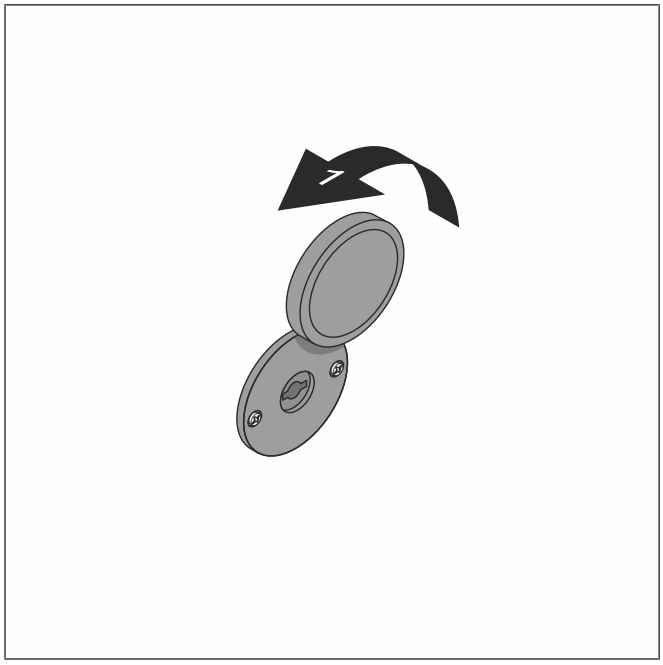
5.12.3.2 Closing the safe door (with customized lock)

1. Close the safe door and turn the locking/release lever clockwise as far as possible.
2. Exit the product-specific software.



3. Turn the key counter-clockwise as far as possible (1).
4. Remove the key from the lock (2).



5. Close the cap of the lock (if installed).

NOTE

To change the number combination, you must turn the dial at least one full turn to the left and then four full turns to the right.

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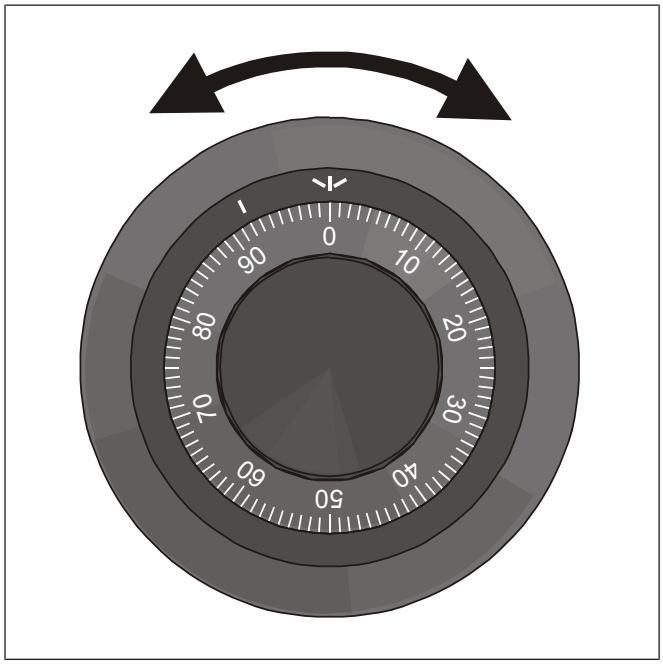

Changing (discarding) the number combination

6. To discard the number combination rotate the dial at least one full turn counterclockwise and then at least four turns clockwise.

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6 Maintenance

6.1 Cleaning the System Housing

- Use only mild soap and water with a soft cloth
- Wipe completely dry with a soft cloth
- **DO NOT** use harsh chemicals such as solvents or paint thinners
- **DO NOT** use abrasive cleaning compounds
- **DO NOT** use abrasive scouring pads (such as steel wool, Scotch Brite®, and so forth)
- **DO NOT** use high-pressure cleaning systems (such as power washers)
- On systems not rated for weather exposure, use caution when cleaning exterior surfaces. **DO NOT** use more liquids than necessary.
- Do not spray cleaners directly onto the system surface, spray the cleaner onto a cleaning cloth, then use the damp cloth to wipe the surface.

6.2 Cleaning the Displays

Commercial glass cleaners can be used (with a lint free cloth) on the consumer display (vandal shield or touch screen), if necessary.

6.3 Cleaning the Keyboards

Clean the keyboard surface with a soft cloth lightly moistened with a liquid non-aggressive detergent.

6.4 Cleaning the Printers

Remove paper dust from the printers using an air duster or a cleaning cloth with isopropyl alcohol.

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A Related Documentation

Refer to the following documents for more information. Documents can be ordered on the Diebold Nixdorf website at https://www.dieboldnixdorf.com/en-us/customer-service/documentation-services/requests.

Table A-1: Related Hardware Documentation

Manual Title	Order Number
DN Series™ ActivEdge Secure Card Reader Operator Manual	01750332042
DN Series™ Check Deposit Module Operator Manual	01750333061
DN Series™ Coin Dispenser Operator Manual	01750333943
DN Series™ Dip Card Reader Operator Manual	01750332044
DN Series™ Motorized Card Reader Operator Manual	01750330805
DN Series™ Recycling Module (RM4V) Dispenser Operator Manual	01750308109
DN Series™ Recycling Module (RM4H) Dispenser Operator Manual	01750306327
DN Series™ TP29 Journal Printer Operator Manual	01750333697
DN Series™ TP30 Receipt Printer Operator Manual	01750333701
DN Series™ TP31 Receipt Printer Operator Manual	01750333705
DN Series™ Fingerprint Scanner Operator Manual	01750336258
DN Series™ CMD-V6C Cash Dispenser Operator Manual	01750342709
DN Series™ CMD-V6A Cash Dispenser Operator Manual	01750331826

Available in English language only

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B Technical Data

B.1 Electrical Characteristics

Table B-1: Electrical Characteristics

Supply voltage range	100-240 V
Rated frequency	50/60 Hz
Network type	TN (network with PE conductor)
Permissible tolerance for rated voltage	+/- 10%
Permissible tolerance for rated frequency	+/- 1%

B.2 System Conditions

Numbers in the following table do not include the heater.

Table B-2: System Conditions

	110-120V		**220-240V**	
Without UPS	Idle Mode	Operation (maximum)	Idle Mode	Operation (maximum)
Rated current consumption (depends on system configuration)	1.2 A	2.4 A	0.6 A	1.4 A
Active Power	120 W	330 W (without heater) [1]	110 W	330 W (without heater) [1]
With UPS				
Rated current consumption	2.3 A	3.5 A	1.2 A	2.0 A
Active Power	250 W	460 W	240 W	460 W
Protection Class	1		1	
Type of system connection (wall outlet)	Country-specific safety plug		Country-specific safety plug	
Fuse	20A automatic circuit breaker		16A automatic circuit breaker	
Degree of protection according to EN 60529:	IP X0		IP X0	
[1] A heater would add 700W.				

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B.3 Installation Specifications

Table B-3: Installation Specifications

Dimensions:	
Height with signage	1603 mm (63.11 inches)
Height without signage	1457 mm (57.36 inches)
Width	719 mm (28.3 inches)
Depth (360 mm wall)	1321 mm (52 inches)
Depth (203 mm wall)	1164 mm (45.82 inches)
Operation and Maintenance Space	0.446m2
Weight [1]	
CEN I safe	
Device Weight	618 kg (1362 pounds)
Surface Load	13.59 kN/m2
Maximum fan capacity (depends on temperature)	m3/h
UL safe	
Device Weight	568 kg (1253 pounds)
Surface Load	15.13 kN/m2
Maximum fan capacity (depends on temperature)	m3/h
[1] The weight specifications indicate the empty weight of the system and the installation version free-standing	

Table B-4: Plinth Weights

Part Number	Description	Weight
01750296970	Mounting set CEN_UL 300	1.9 Kg
1750309735	DN OFA Rahmen 25mm UL	30 Kg
1750310045	DN OFA Rahmen 25mm CEN	31.5 Kg
1750340816	DN OFA Sockel CEN 120mm	49 Kg
1750340921	DN OFA Sockel CEN 191mm	65 Kg
1750342755	DN OFA Sockel UL 120mm	36.5 Kg
1750343032	DN OFA Sockel UL 191mm	49Kg
01750340241	DN OFA adj. plinth 155 – 240mm CEN	73 Kg

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Table B-4: Plinth Weights (continued)

Part Number	Description	Weight
01750341166	DN OFA adj. plinth 115 – 160mm CEN	65 Kg
1750334215	Inst.-Sockel 25mm DN OFA-S CEN kpl.	27 Kg
1750334219	inst.Rahmen 25mm DN OFA-S UL kpl.	26.5 Kg

B.4 Effective Power and Heat Output

Table B-5: Effective Power and Heat Output

System	Effective Power (W)		Heat Output (W)
DN Series™ 450	Idle Speed	Operation	190
	168	250	

B.5 Mechanical Environmental Conditions

Table B-6: Mechanical Environmental Conditions

	Class	Notes
Operation	3M2	Building without significant vibrations caused by other objects
Transport (in original packing)	2M2	All types of commerce vehicles and trailers as well as rail and air transport
Storage (in original packing)	1M3	Noticeable vibration and bumps caused, for example, by machines or passing vehicles

B.6 Environmental Conditions

Noise emissions should be taken into account when selecting the installation site. Fans in operation or the noise produced during a transaction could disturb people in the immediate vicinity of the system and may therefore need to be diminished with soundproofing. These must comply with the environmental conditions that apply to the specific system and the maintenance spaces.

Table B-7: Environmental Conditions

Climatic Environmental Conditions		
	Air Temperature degree C (degree F)	Relative Air Humidity (%)

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Table B-7: Environmental Conditions (continued)

Operation	(Outside) -40C to 50C (-40F to 122F)	5 to 85
	(Inside) 0C to 40C (32 F to 104F)	
Transport	-25 C to +60 C (-13 to 140 F)	5 to 98
Storage	-10 C to +60 C (14 to 140 F)	5 to 95
Noise Emissions		
Characteristic noise value according to ISO 9296	45 dB(A) Idle mode	57.1 dB(A) Operation (typical operating cycle)
Workplace-related sound pressure level	LpAm (at adjacent workplace)	

B.7 Compliance with Standards and Approvals

Standards Met

- IEC 60950 / IEC 62368
- EN 60950 / EN 62368
- CSA C22.2-60950 / CSA C22.2-62368
- UL 60950 / UL 62368
- BSMI Standard CNS 14336

EMC Standards

- EN 55032 / class b
- EN 55024
- FCC CFR 47, part 15, subpart B, class A
- ICES-003 (CSA 108.8)
- BSMI-Standard CNS 13438 class B

Conformity

The CE mark of conformity attached to the product or its package indicates that the product complies with the requirements of the following EC directives:

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EC
- RoHS Directive 2011/65/EU

The corresponding statement of compliance has been issued by:

Heinz Nixdorf Ring 1
33106 Paderborn
Germany

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Notes Concerning Radio Interference Suppression and Electrical Safety

All other devices connected to this product must comply with the EMC Directive 2014/30/EU and the Low Voltage Directive 2014/35/EU.

Certification for Data Transmission

The certification number or CE mark of the data transmission module (if available) is attached directly to the DT card or to the housing of the system unit.

B.8 Environmental Protection

Environmentally and recycling-friendly product development

This product has been designed according to our in-house specification regarding environmentally and recycling-friendly product development.

This means that crucial criteria such as long life, choice of material and its labeling, energy efficiency, emissions, packaging, ease of disassembly and recyclability have been taken into account. This conserves resources and lessens the impact on the environment.

Saving energy

Please switch on Systems 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 and at the end of work.

Disposing of used consumables

Please dispose of printer consumables, used batteries as well as cleaning and maintenance materials in accordance with national regulations (where relevant complying with vendor specifications).

Used batteries should not be disposed of as normal municipal waste within the EU (crossed-out wheeled bin symbol). The chemical names of certain pollutants, if included in the batteries, can be found underneath the symbol of the crossed-out wheeled bin. Examples here include: (Pb) lead, (Cd) cadmium and (Hg) mercury. Used batteries can be disposed of free of charge throughout the EU.

Labels on plastic parts of the housing

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

Returning, remarketing, recycling and disposal

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

Please observe the respective national regulations with regard to the disposal of electrical equipment.

Electrical equipment should not be disposed of as normal municipal waste within the EU (crossed-out wheeled bin symbol).

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For information regarding the possible repurchase of used systems, please contact:
contact.remarketing@dieboldnixdorf.com

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C Appendix - Advanced Upper Cabinet and Extended Window Trim System

C.1 Introduction

C.1.1 Using this Appendix

This appendix provides the following information:

- A description of devices used in the system (*Appendix C.2*)
- Options (*Appendix C.3*)
- Accessing the upper chassis and safe (*Appendix C.4*)
- Cleaning the exterior of the system (*Appendix C.5*)
- Related documentation (*Appendix C.6*)

For information on maintenance procedures for an individual component, refer to the module operator manual listed in (*Appendix C.6*).

⚠ WARNING

This unit has more than one power supply cord. To reduce the risk of electrical shock disconnect both power cords before servicing.

C.2 System Description

C.2.1 System Overview

This section describes the devices available on the advanced upper cabinet and extended window trim System that are located in either the fascia, upper chassis or safe. For more information about individual devices, refer to the documents listed in *Appendix C.6* .

NOTE

Your system might not contain all the devices described in this section. Some devices are optional and some devices cannot be used in combination with other devices (mutually exclusive).

The DN Series™ 450 through-the-wall walk-up system, with an advanced upper cabinet and extended window trim, is a rear-load system. The system dispenses cash and presents transaction records to the consumers, accepts cash and check deposits and has cash recycling capability. It is designed with a recessed fascia so that consumers can walk up to the system, view the options, and perform transactions.

Supplies are replenished and service is performed from the rear of the system (see *Figure C-1*).

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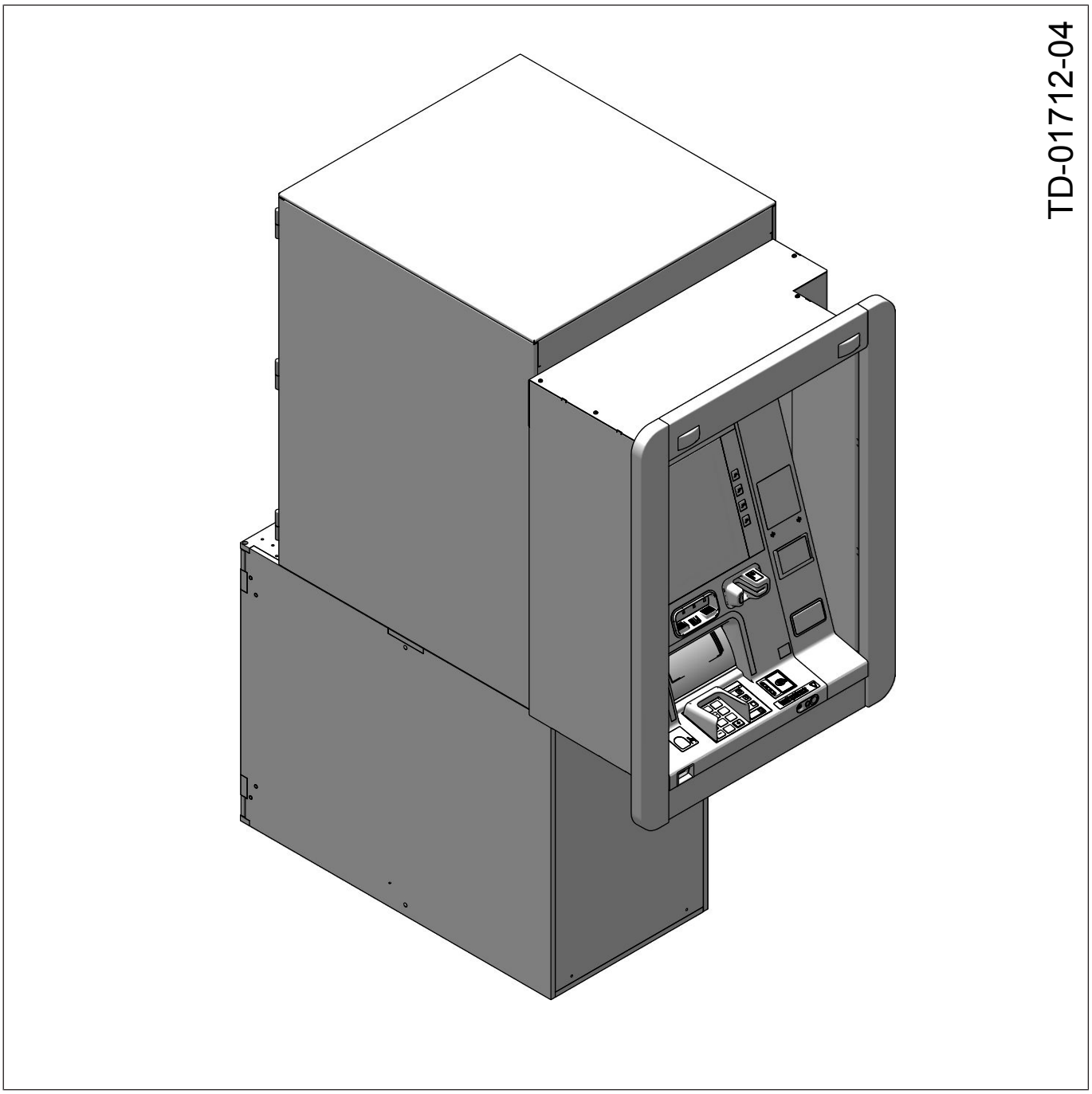

Figure C-1: DN Series™ 450 Through-the-Wall Walk-up System with Advanced Upper Cabinet and Extended Window Trim

C.2.1.1 Before Performing Maintenance Procedures on the System

Performing maintenance procedures on the advanced upper cabinet and extended window trim system is the same as the standard DN Series™ 450 system. Refer to *Section 3.1.1*.

C.2.1.2 Maintenance Tasks

The maintenance tasks for the advanced upper cabinet and extended window trim system are the same as the standard DN Series™ 450 system. Refer to *Section 3.1.2*.

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C.2.1.3 Device Usage

Table C-1 lists the devices in the system and who would generally use them. *Appendix C.2.2* , *Appendix C.2.3* , and *Appendix C.2.4* contain a brief description of some of the devices.

The operator interface devices are used to perform routine servicing operations such as daily balancing, supply replenishment, and problem determination. These devices can also be used for occasional operations such as setup and problem diagnosis of the system.

The operator maintenance interface for the system is the rear service display. The operator uses the buttons on the external control unit with the operator interface to perform routine maintenance procedures.

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Table C-1: Device Usage

Device	Used By...	
	Consumer	Operator
Motorized card reader	X	X
Dip card reader	X	X
ActivEdge card reader	X	X
Encrypting PIN pad V8 (consumer keypad)	X	
Headphone jack (and volume control)	X	
Cash recycler	X	X
Coin dispenser	X	X
Check deposit module	X	X
Receipt printer	X	X
Journal printer		X
TP20 Form printer	X	X
Passbook printer	X	X
External control unit (system power (on/off) button)		X
Speakers	X	
Near Field Communication (NFC) contactless card reader	X	
User guide lights (UXL)	X	
Rear service display		X
Safe devices (locks)		X
ID scanner (driver license)	X	X
Bar code scanner	X	X
Consumer display	X	
Biometric finger print scanner	X	
Microphone	X	
CMD-V6C cash dispenser	X	X
CMD-V6A cash dispenser	X	X

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C.2.2 Fascia Components

The fascia functions as an interface that allows the consumer to interact with the system. The consumer selects transactions, specifies amounts, receives currency or other dispensable media and receipts, and requests information using the fascia. The devices and features on the fascia either have labels that help the consumer to use the device or user experience lights (UXL) to guide the consumer through the transaction.

The location of some devices and features can vary, depending on how they are installed on the system. A typical configuration of the fascia is shown in *Figure C-2*.

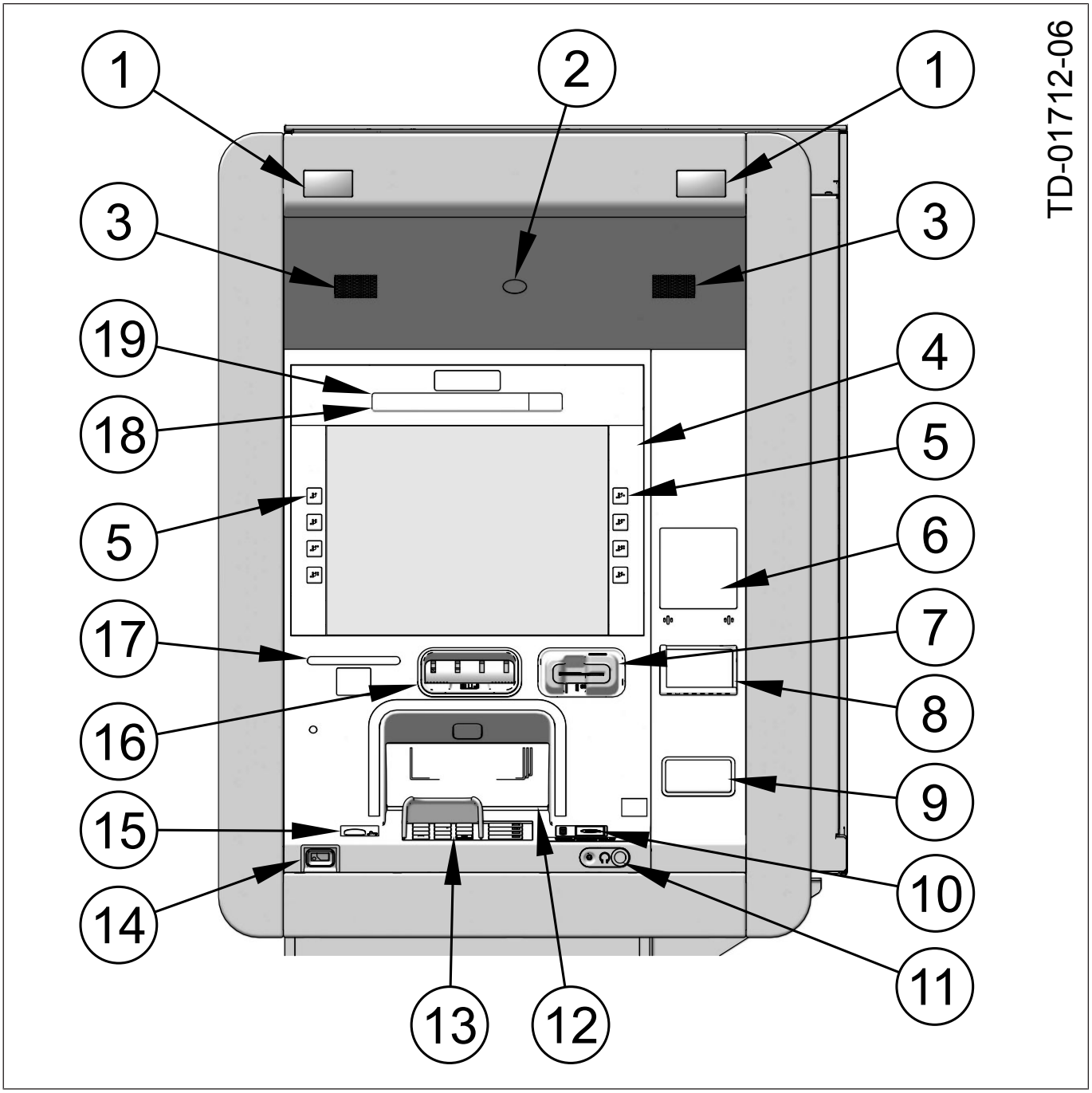

Figure C-2: Modules and Devices Mounted on the Extended Window Trim Fascia

1	Consumer awareness mirror

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2	Task light
3	Speakers
4	Consumer display (15-inch display shown)
5	Function keys
6	Consumer portrait/face camera
7	Dip card reader
7	Motorized card reader slot
7	ActivEdge card reader slot
8	Identification card scanner
9	Coin dispenser slot
10	NFC contactless card reader
11	Headphone jack (and volume control)
12	Cash recycler or cash dispenser slot
13	Encrypting PIN pad (consumer keypad)
14	Bar code reader
15	Biometric finger print scanner
16	Check deposit module slot
17	Receipt printer slot
18	TP20 Forms printer slot
19	Passbook printer slot

Cash Recycler or Cash Dispenser Slot

Cash and other media are presented and accepted through the cash recycler or cash dispenser slot (*Figure C-2*).

User Guide Lights (UXL)

User guide lights guide the consumer through a transaction by calling attention to the next step in the transaction. These lights can display in colors and are used by the devices in *Figure C-3*.

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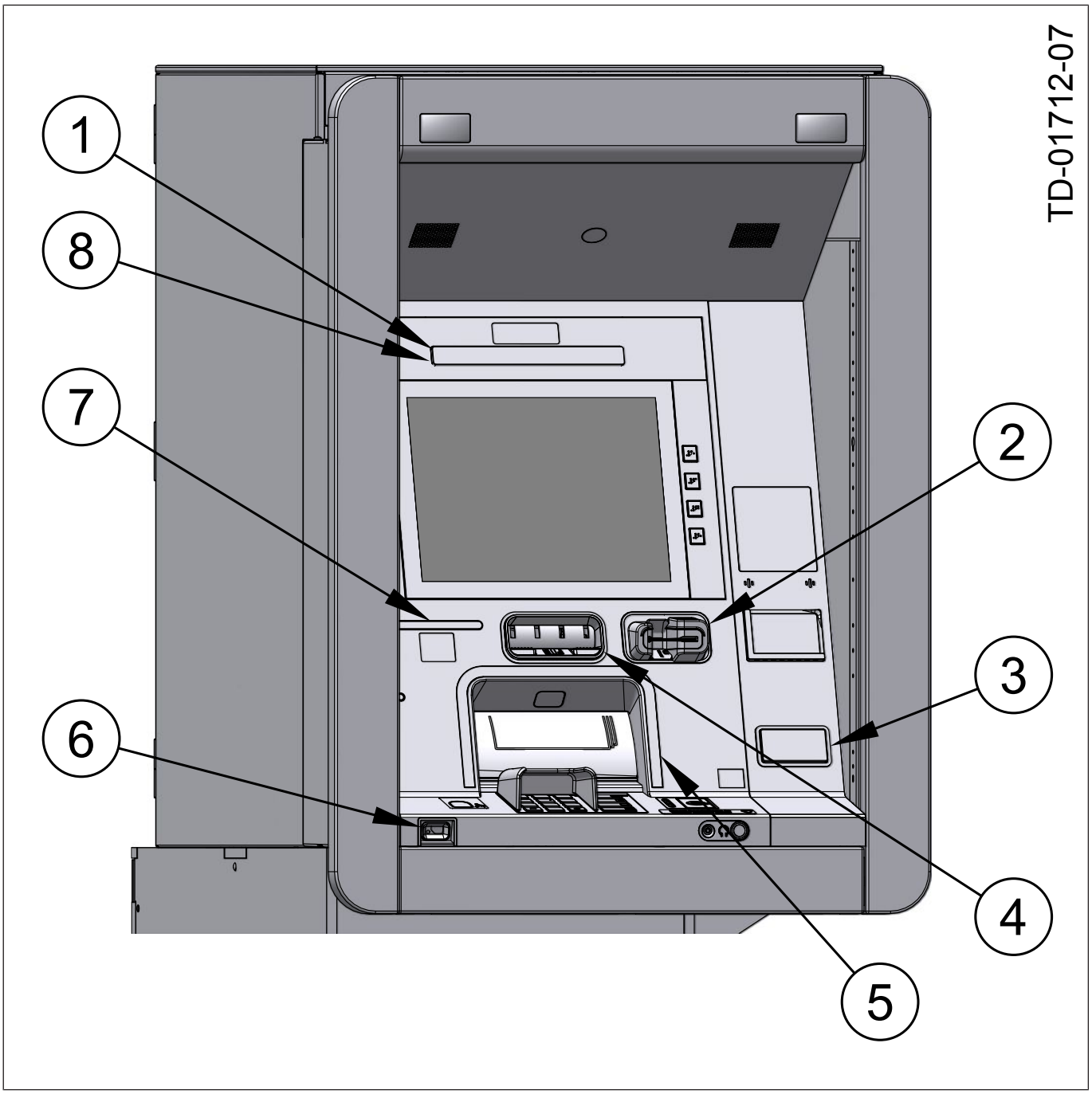

Figure C-3: User Guide Lights (UXL) on the Extended Window Trim

1	TP20 Forms printer
2	Card reader
3	Coin dispenser
4	Check deposit module
5	Cash recycling or cash dispenser module
6	Bar code reader
7	Receipt printer slot
8	Passbook printer

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Biometric Fingerprint Scanner

The biometric fingerprint scanner for the advanced upper cabinet and extended window trim system is the same as the standard DN Series™ 450 system, see (*Figure 3-4*)

C.2.3 Upper Chassis Components

The location of some devices and features can vary, depending on how they are installed on the system. A typical configuration of the upper chassis for the advanced upper cabinet and extended window trim system is shown in *Figure C-4*.

NOTE

Your system might not contain all devices described in this section. Some devices are optional and some devices cannot be used in combination with other devices (mutually exclusive combinations).

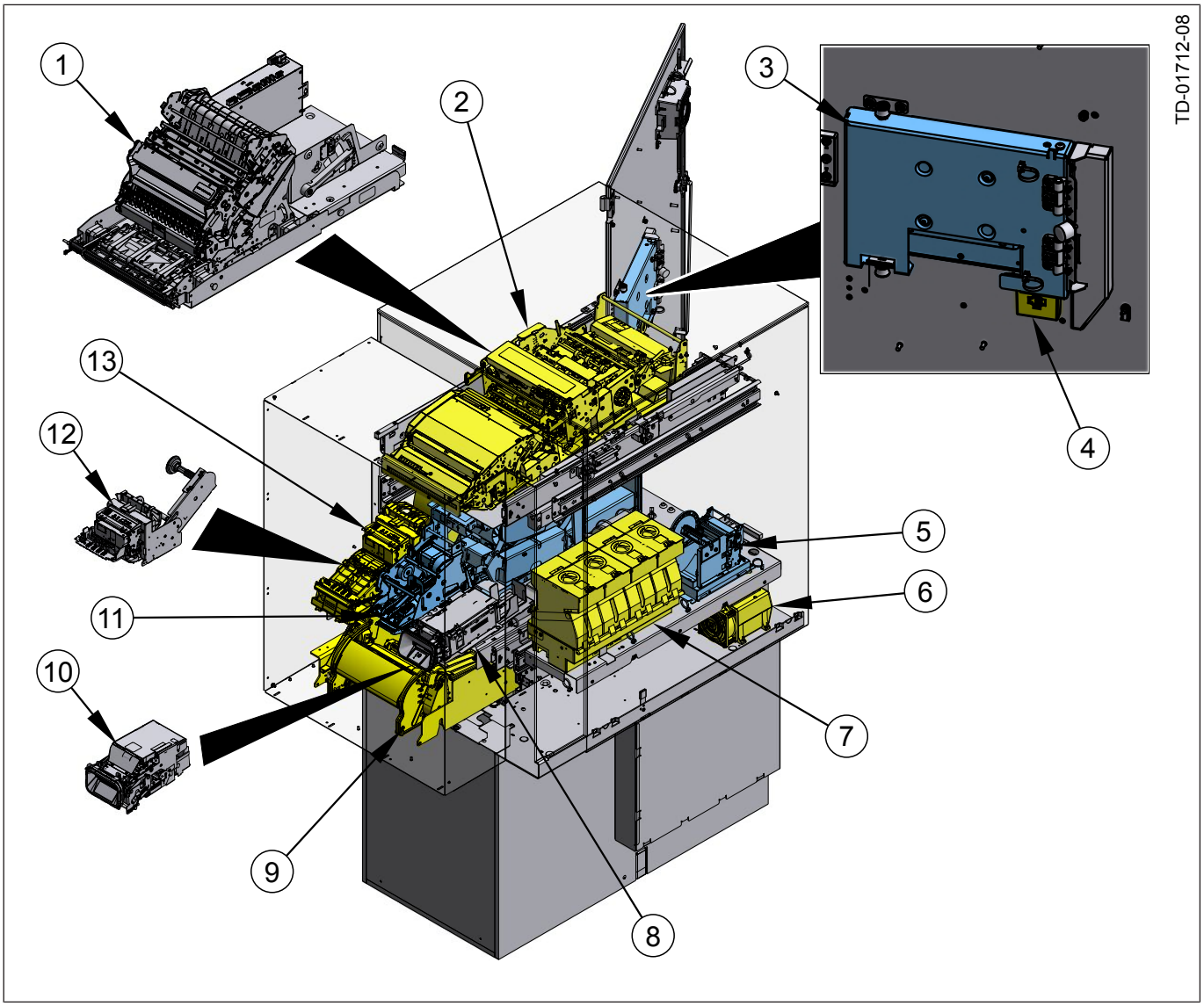

Figure C-4: Upper Chassis Devices

1	TP20 forms printer

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2	Passbook printer
3	Rear service display
4	External control unit
5	Journal printer
6	Heater
7	Four hopper coin dispenser
8	Motorized card reader
9	Cash recycler or cash dispenser module (upper unit)
10	ActivEdge card reader
11	Check deposit module
12	TP30 receipt printer
13	TP31 receipt printer

The following advanced upper cabinet and extended window trim system components are the same components found in the standard DN Series™ 450 system:

- Cash Recycler - Upper Unit. Refer to *Section 3.3*
- Check Deposit Module - Refer to *Section 3.3*
- Coin Dispenser - Four Hopper Configuration - Refer to *Section 3.3*

NOTE

An eight hopper coin dispenser is not available with the advanced upper cabinet system.

- TP29 Journal Printer - Refer to *Section 3.3*
- TP30 Receipt Printer - Refer to *Section 3.3*
- TP31 Receipt Printer - Refer to *Section 3.3*
- System Door Open - Rear Service Display with Touch Screen - Refer to *Section 3.3*
- System Door Closed - Rear Service Display with Touch Screen - Refer to *Section 3.3*
- Heater - Refer to *Section 3.3*

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TP31 Receipt Printer

The receipt printer TP31(*Figure C-5*) is compact and modular printer with a thermal printing unit, an integrated cutter and a presenter. The receipt printer TP31 is available in two versions:

- TP31 (without retract function)
- TP31R (with retract function)

The receipt printer generates documents according to user software specifications, e.g. receipt slips. The paper path is controlled by several paper sensors. The printer is equipped with sensors which indicate the remaining quantity of paper (weekend supply) and the end of the paper supply. The paper supply can thus be monitored with the user software. The TP31 can process paper rolls coated on the top as well as on the bottom. Control marks can be evaluated. For the TP31R, the retract function for receipts that have not been withdrawn is configurable.

Refer to the *TP31R Receipt Printer Operating Manual* (Order Number 01750333705).

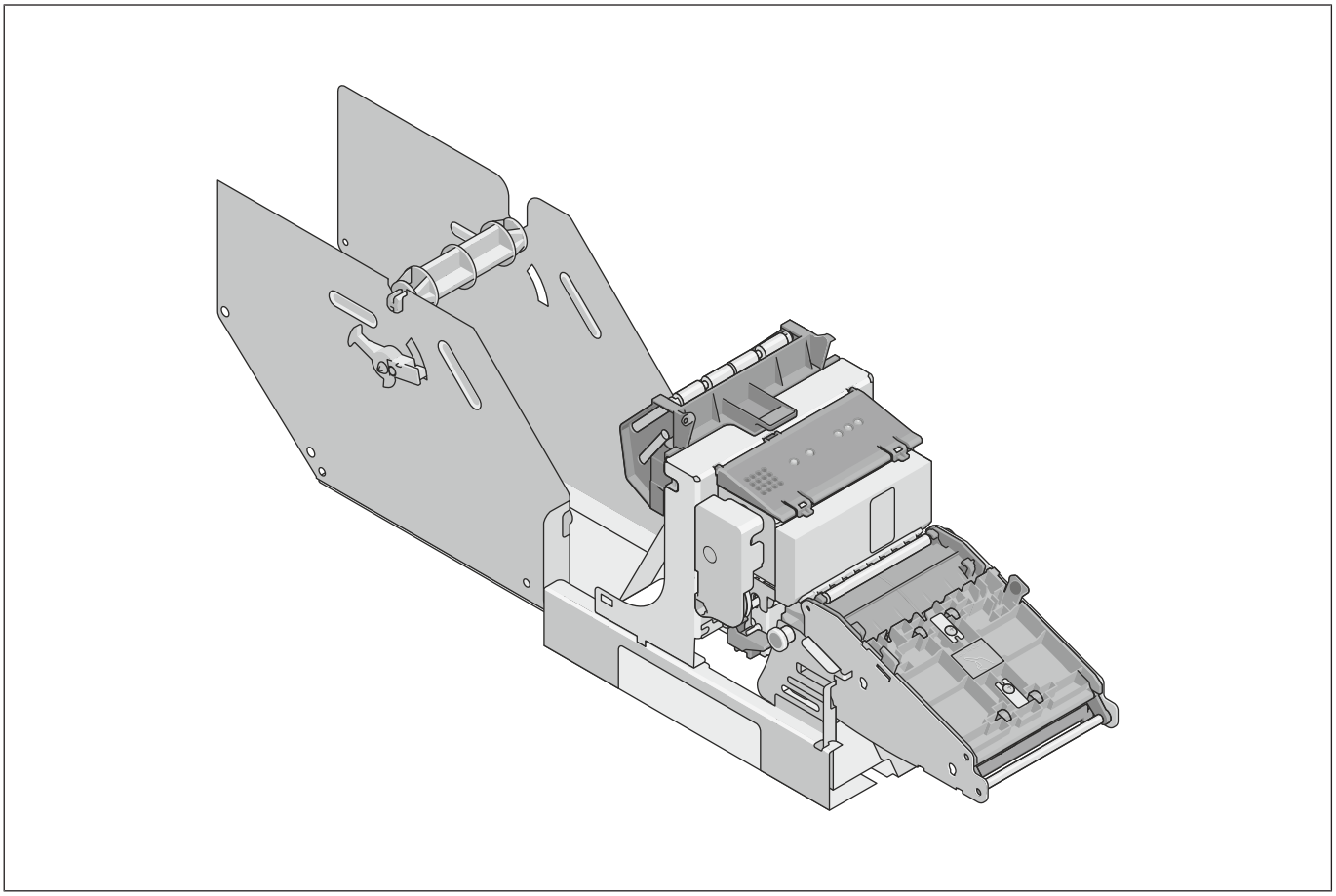

Figure C-5: TP31 Receipt Printer

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TP20 Form Printer

The TP20 form printer is unique to the advanced upper cabinet and extended window trim system. Papers are printed by the TP20, cut by a separation device and issued to the user separately or in bundles, or (if not removed) they are collected in a reject box. See *Figure C-6*.

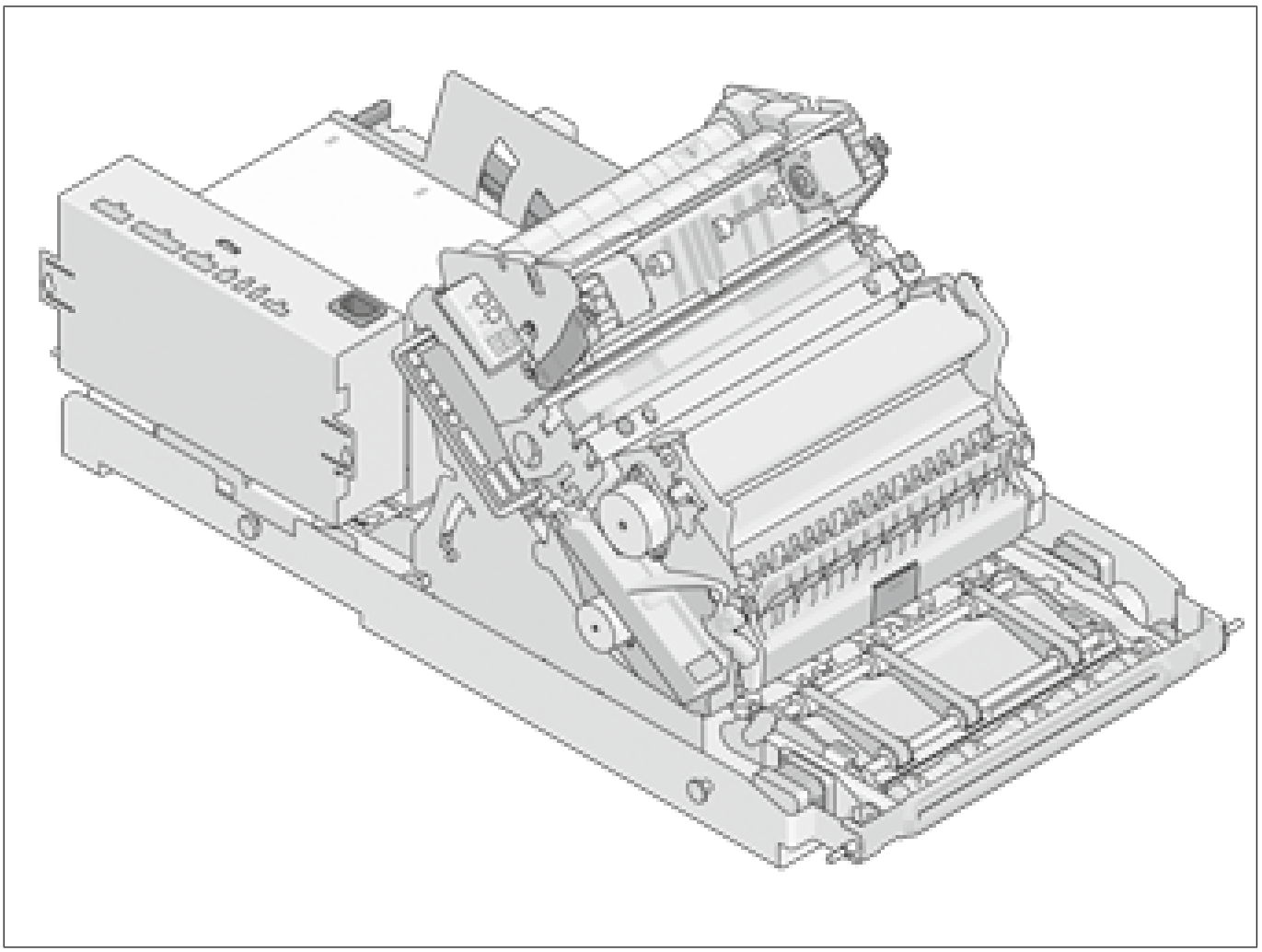

Figure C-6: TP20 Form Printer

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Passbook Printer

The advanced passbook printer is also unique to the advanced upper cabinet and extended window trim system. See *Figure C-7*.

The advanced passbook printer prints transaction information on a consumer's passbook. The transaction information can include the amount of deposits, withdrawals, transfers, payments, system number and location, or other information.

There are three types of passbook printers depending on the size of the passbook used (*Table C-2*).

Table C-2: Passbook Printer Types

Description	Part Number
Printer, passbook, 128mm	01750344461
Printer, passbook, 148mm	01750344462
Printer, passbook, 168mm	01750344463

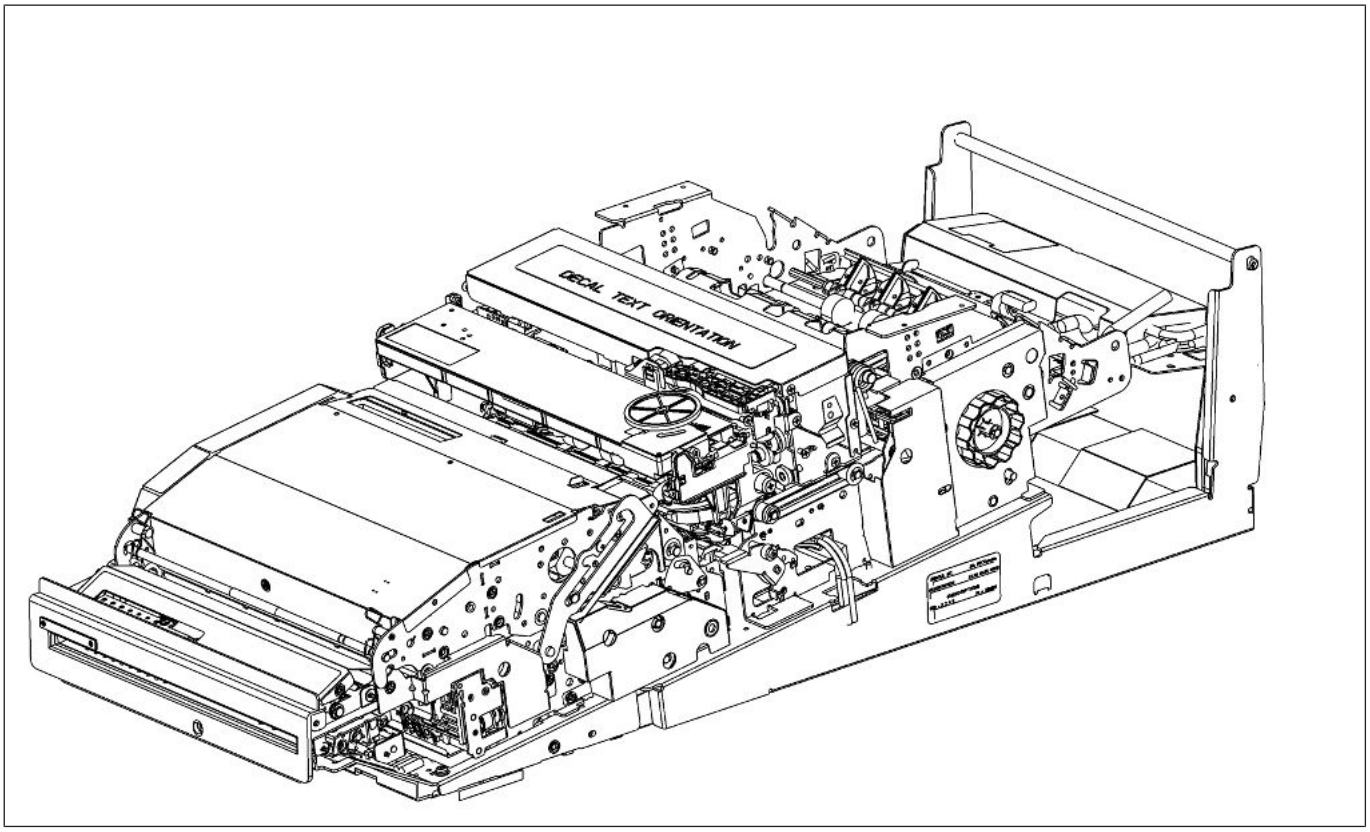

Figure C-7: Passbook Printer

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Cash Dispenser - Upper Unit

The cash dispenser upper unit is located in the upper chassis directly above the cash dispenser lower unit.

The cash dispenser module delivers media (such as currency) to the consumer. The media is drawn from the supply cassettes and transported to an output tray behind the fascia of the system, where the consumer can receive it once the shutter is opened. If the media is too mutilated or wrinkled, or if multiple notes are picked at the same time, the notes go to the retract cassette instead of being delivered to the consumer.

For more information, refer to the *DN Series™ CMD-V6C Cash Dispenser Operating Manual* (Order Number 01750342709) or *DN Series™ CMD-V6A Cash Dispenser Operating Manual* (Order Number 01750339307).

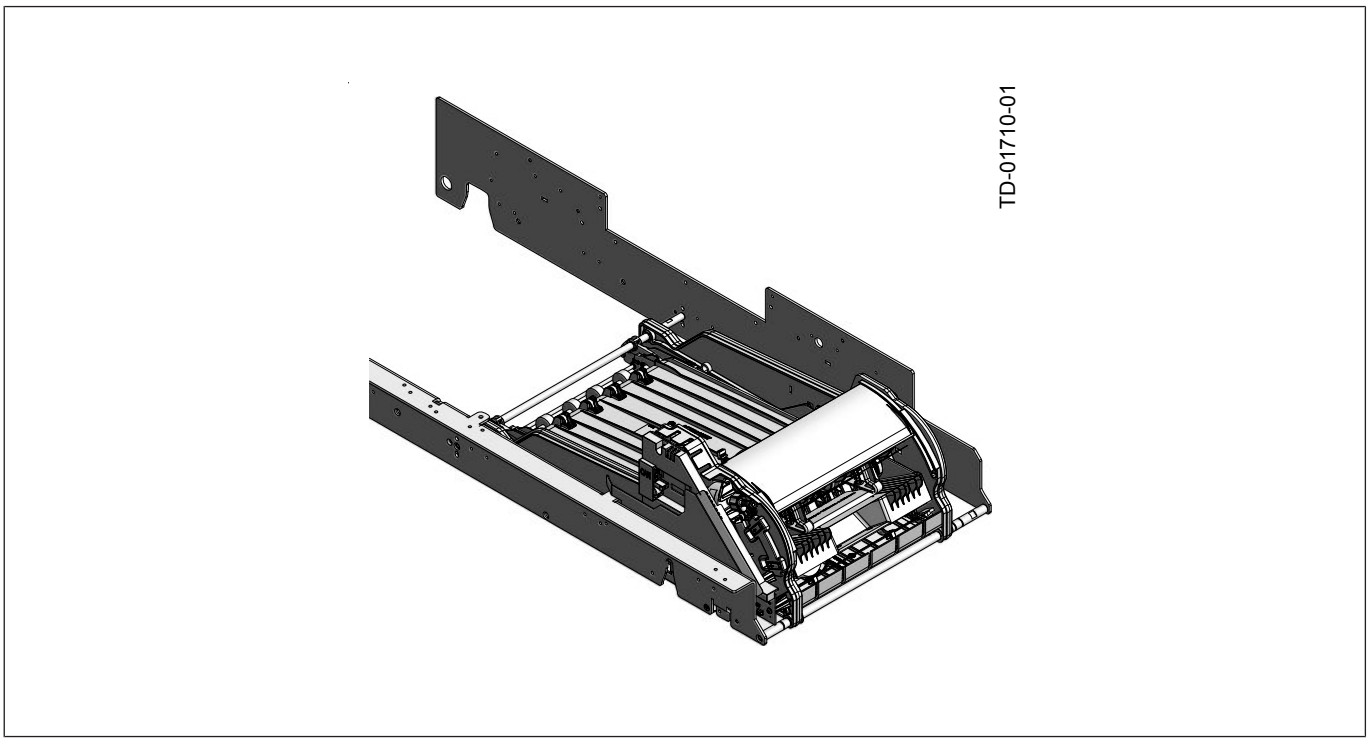

Figure C-8: Cash Dispenser Module -Upper Unit

C.2.3.1 External Control Unit

The external control unit for the extended upper cabinet system is the same as the standard DN Series™ 450 system. Refer to *Section 3.3.1*.

C.2.4 Safe Components

The safe components for the advanced upper cabinet and extended window trim system is the same as the standard DN Series™ 450 system. Refer to *Section 3.4*.

C.3 Options

The remote status indicator is an option for all versions of the DN Series™ 450. Refer to *Section 4* for more information.

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C.4 Operation

Some operations for the advanced upper cabinet and extended window trim system are the same as the standard DN Series™ 450 system. This section provides the following information:

System - shutting down and starting up	*Section 5.1.1.2*
Modules - shutting down and starting up	*Section 5.1.1.3*
Accessing the upper chassis	*Section 5.2*
System and device touch points	*Appendix C.4.2*
Accessing the rear service display	*Section 5.4*
Accessing the RM4V (vertical) recycling module lower unit	*Section 5.5.2*
Accessing the RM4H (horizontal) recycling module lower unit	*Section 5.5.2*
Accessing the CMD-V6C cash dispenser (lower unit)	*Section 5.5.2*
Accessing the CMD-V6A cash dispenser (lower unit)	*Section 5.5.2*
Accessing the check deposit module	*Section 5.6*
Accessing the card retain bin and receipt printer	*Section 5.7*
Accessing the coin dispenser	*Section 5.9*
Accessing the TP20 forms printer	*Appendix C.4.3*
Accessing the passbook printer	*Appendix C.4.4*
How to read a bar code	*Section 5.10*
Accessing the safe	*Section 5.11*
Opening and closing the safe door with a factory setting lock	*Section 5.12.1*
Opening and closing the safe door with a customized lock	*Section 5.12.3*

Before proceeding, be sure you have the upper chassis door key and the correct lock combination.

⚠ WARNING

To avoid risk of death, severe personal injury, or equipment damage, always follow the written maintenance procedures for the system and its individual modules.

NOTE

For maintenance procedures for the individual system modules, refer to the module operating guides listed in *Appendix C.6*

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C.4.1 T/SOP

To use T/SOP, press the wrench button on the external control unit (External Control Unit) and follow the instructions on the rear service display.

C.4.2 System and Device Touch Points

Touch points are designated areas designed for accessing and handling the system devices during the standard system maintenance procedures. Touch points are color coded green and include, but are not limited to, slide assembly release levers, module handles, device levers, knobs, etc. See *Figure C-9* through *Figure C-14* for examples of these touch points.

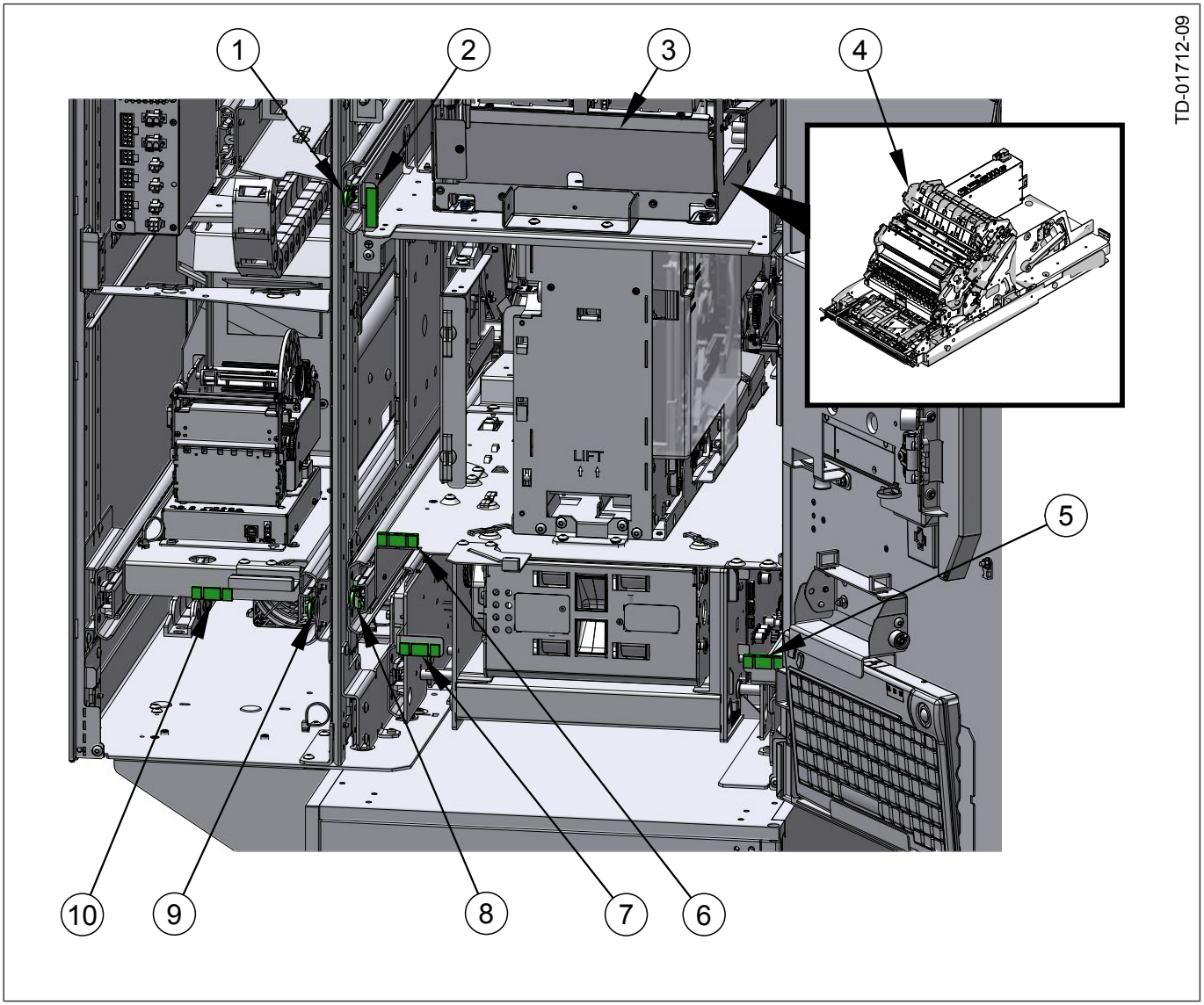

Figure C-9: Upper Chassis Touch Points

1	Printer tray release latch
2	Printer tray handle
3	Passbook printer
4	TP20 Forms printer

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5	RM4 upper head unit release latch
6	Component tray handle (motorized card reader, check deposit module, receipt printer)
7	RM4 upper head unit handle
8	Component tray release latch
9	Coin tray release latch
10	Coin tray handle

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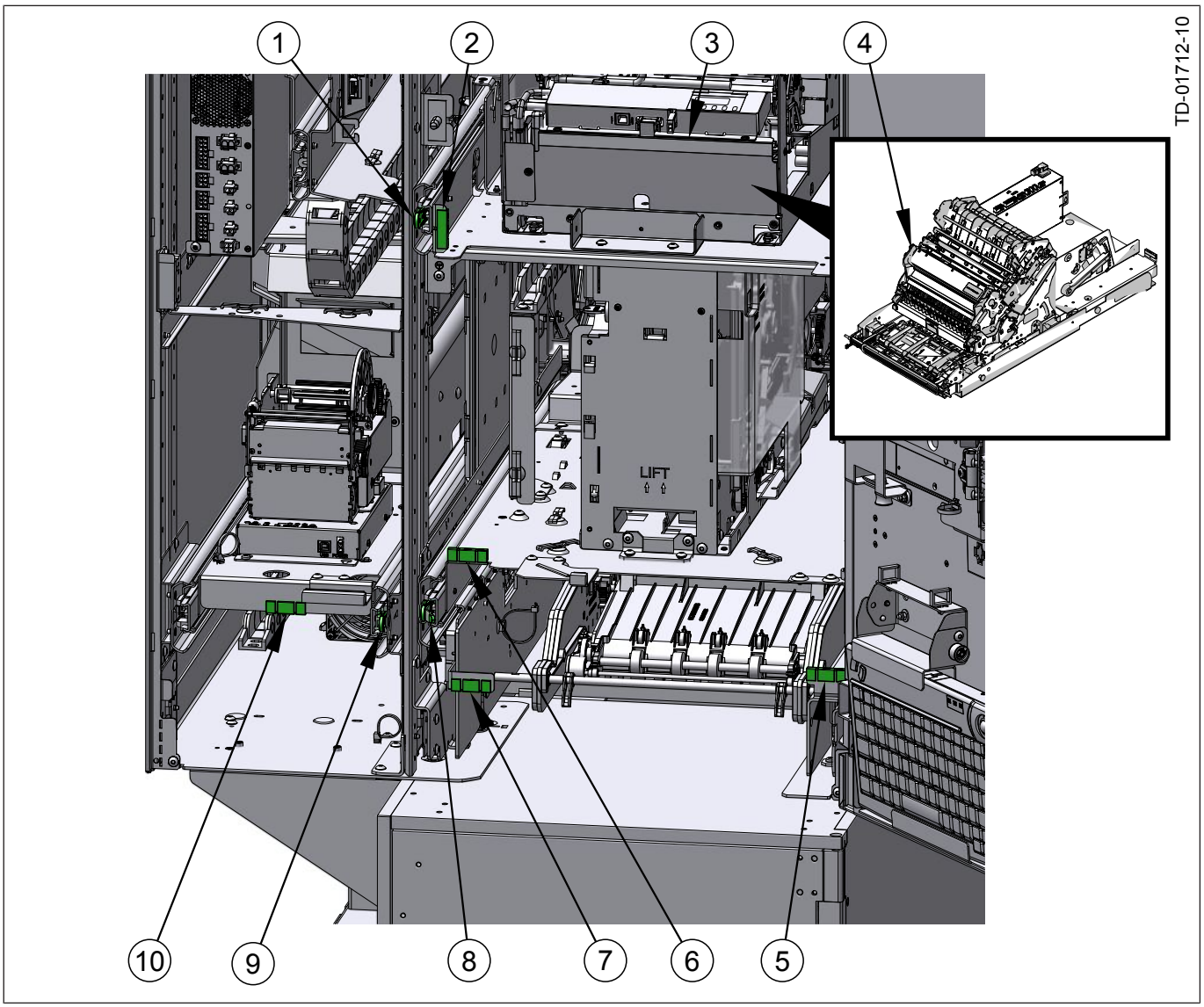

Figure C-10: More Upper Chassis Touch Points

1	Printer tray release latch
2	Printer tray handle
3	Passbook printer
4	TP20 Forms printer
5	Cash dispenser module upper head unit release latch
6	Component tray handle (motorized card reader, check deposit module, receipt printer)
7	Cash dispenser module upper head unit handle
8	Component tray release latch
9	Coin tray release latch
10	Coin tray handle

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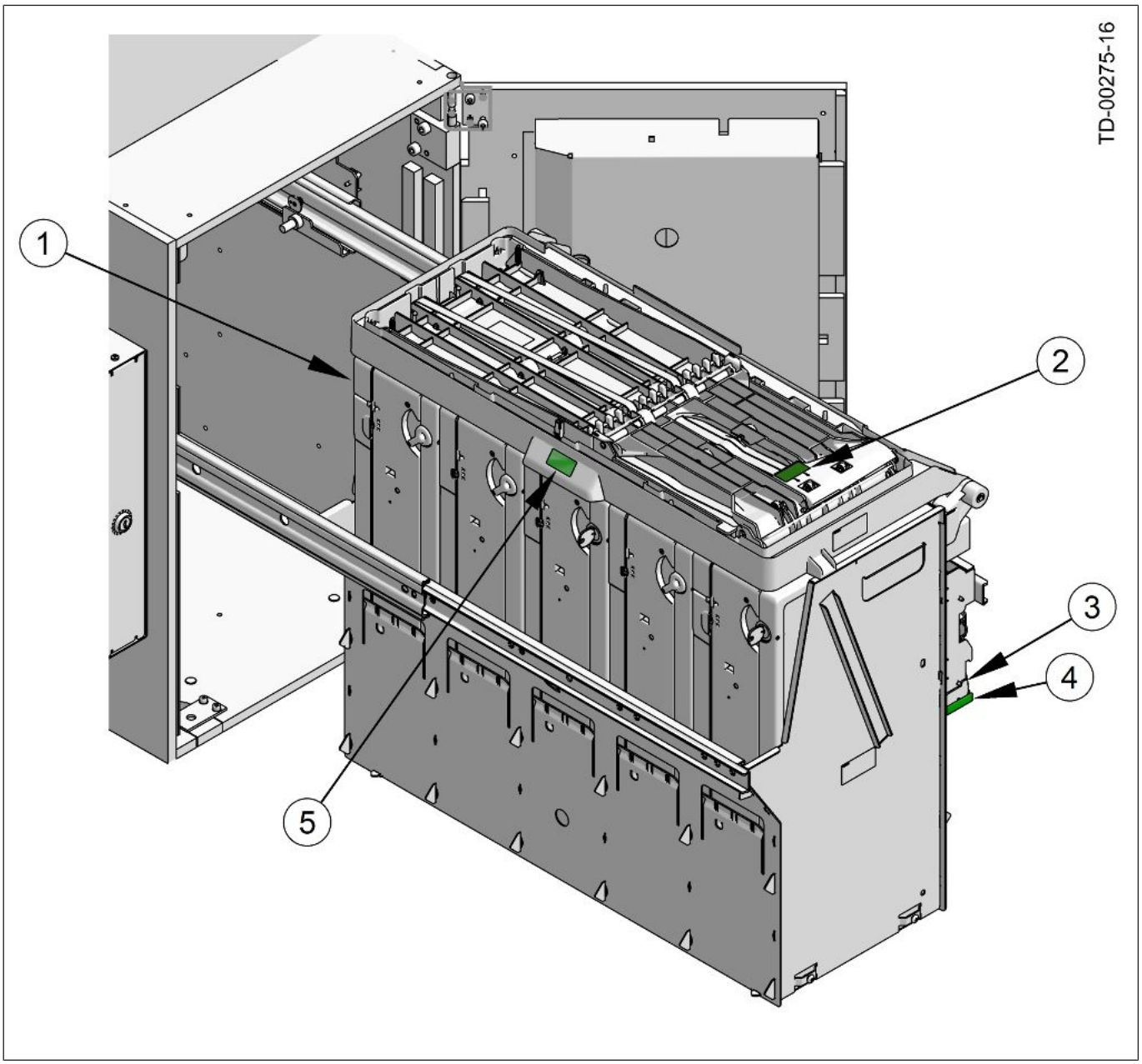

Figure C-11: Safe Touch Points With RM4V Recycling Module

1	RM4V Recycling module cassettes
2	Loopback transport release latch
3	RM4V Recycling module lower unit release latch
4	RM4V Recycling module lower unit handle
5	Chest horizontal transport handle

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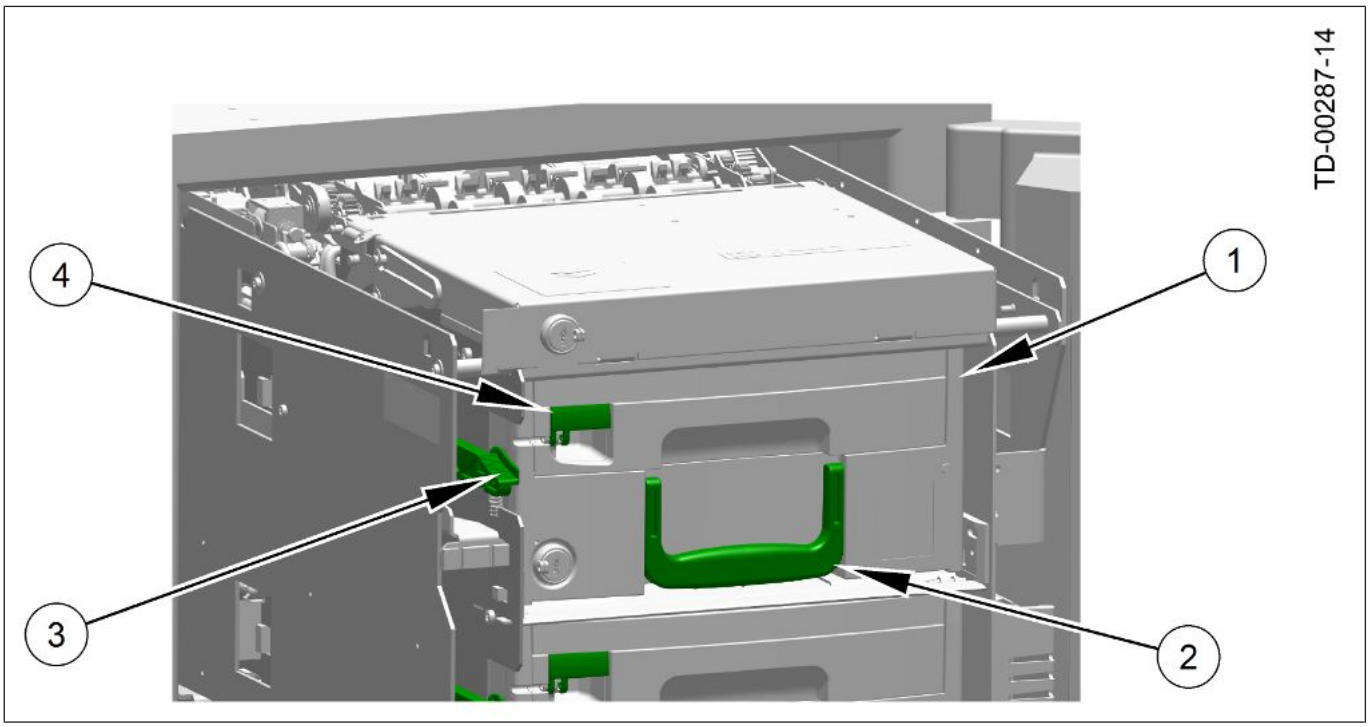

Figure C-12: More Safe Touch Points With RM4H Recycling Module

1	RM4H Recycling module cassettes
2	RM4H Recycling module cassette handle
3	RM4H Recycling module cassette release latch (press down an inch back from the end of the lever)
4	RM4H Recycling module cassette lid release latch

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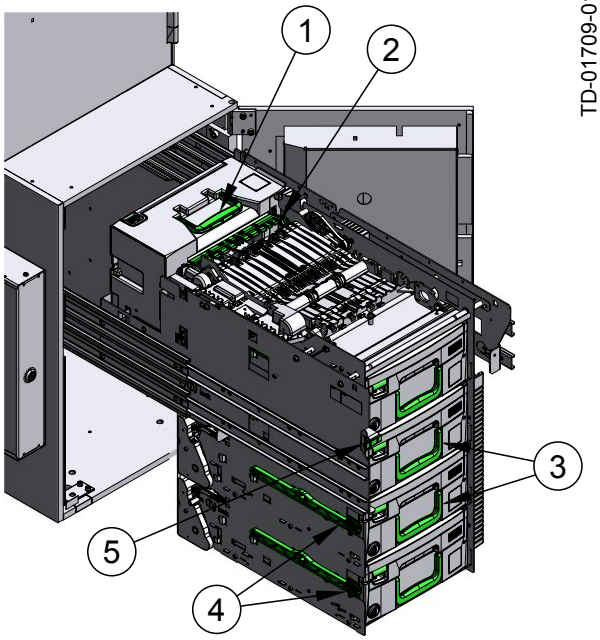

Figure C-13: More Safe Touch Points with CMD-V6C

1	Reject/retract cassette handle
2	Head transport release lever
3	Supply cassette handle
4	Supply cassette release latch
5	CMD-V6C release latch

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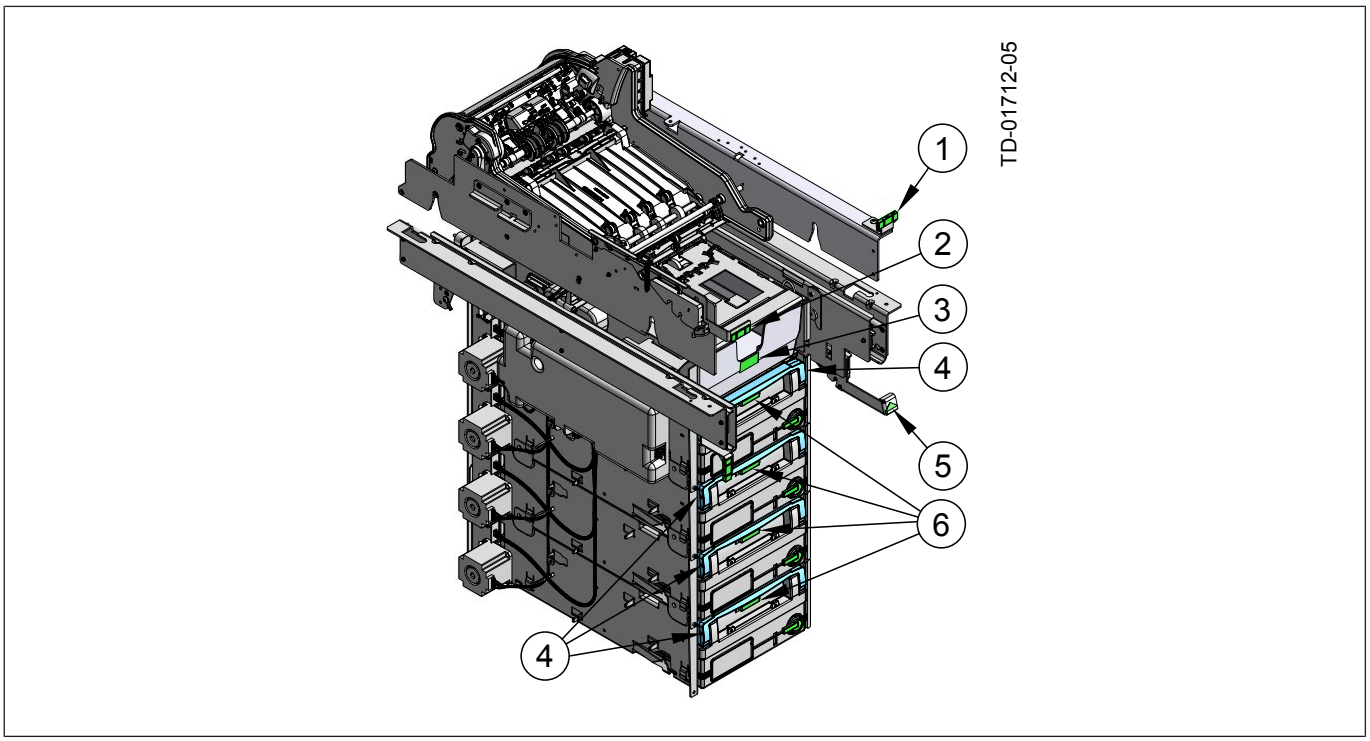

Figure C-14: More Safe Touch Points with CMD-V6A

1	Handle
2	Head transport release lever
3	Divert bin handle
4	Supply cassette handle
5	CMD-V6A release latch
6	Supply cassette lid release latch

C.4.3 Accessing the TP20 Form Printer

Perform the following steps to access the TP20 form printer.

1. Unlock and open the advanced upper cabinet rear door (*Figure C-15*).
2. Slide out the component tray where the TP20 form printer resides.
3. Perform specific maintenance procedures on the TP20 form printer. Refer to the module operating manuals listed in *Appendix C.6* for specific maintenance procedures for this module.
4. Push in the component tray where the TP20 form printer resides until it latches securely in place.
5. Close and lock the advanced upper cabinet rear door (*Figure C-15*).

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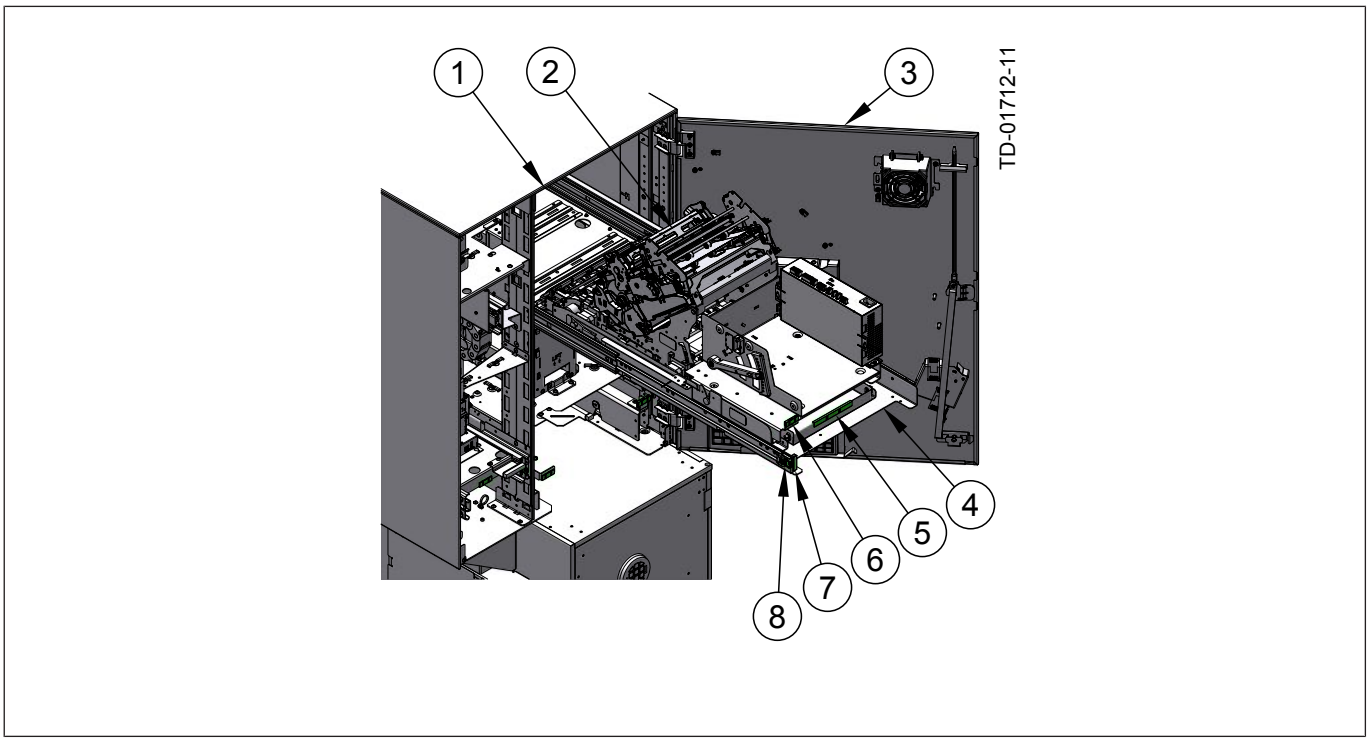

Figure C-15: Accessing the TP20 Form Printer

1	Upper chassis
2	TP20 form printer on component tray
3	Upper chassis rear door
4	Component tray
5	Printer handle
6	Printer release
7	Component tray release handle
8	Component tray release latch

C.4.4 Accessing the Passbook Printer

Perform the following steps to access the passbook printer.

1. Unlock and open the advanced upper cabinet rear door (*Figure C-16*).
2. Slide out the component tray where the pasbook printer resides.
3. Perform specific maintenance procedures on the passbook printer. Refer to the module operating manuals listed in *Appendix C.6* for specific maintenance procedures for this module.
4. Push in the component tray where the passbook printer resides until it latches securely in place.
5. Close and lock the advanced upper cabinet rear door (*Figure C-16*).

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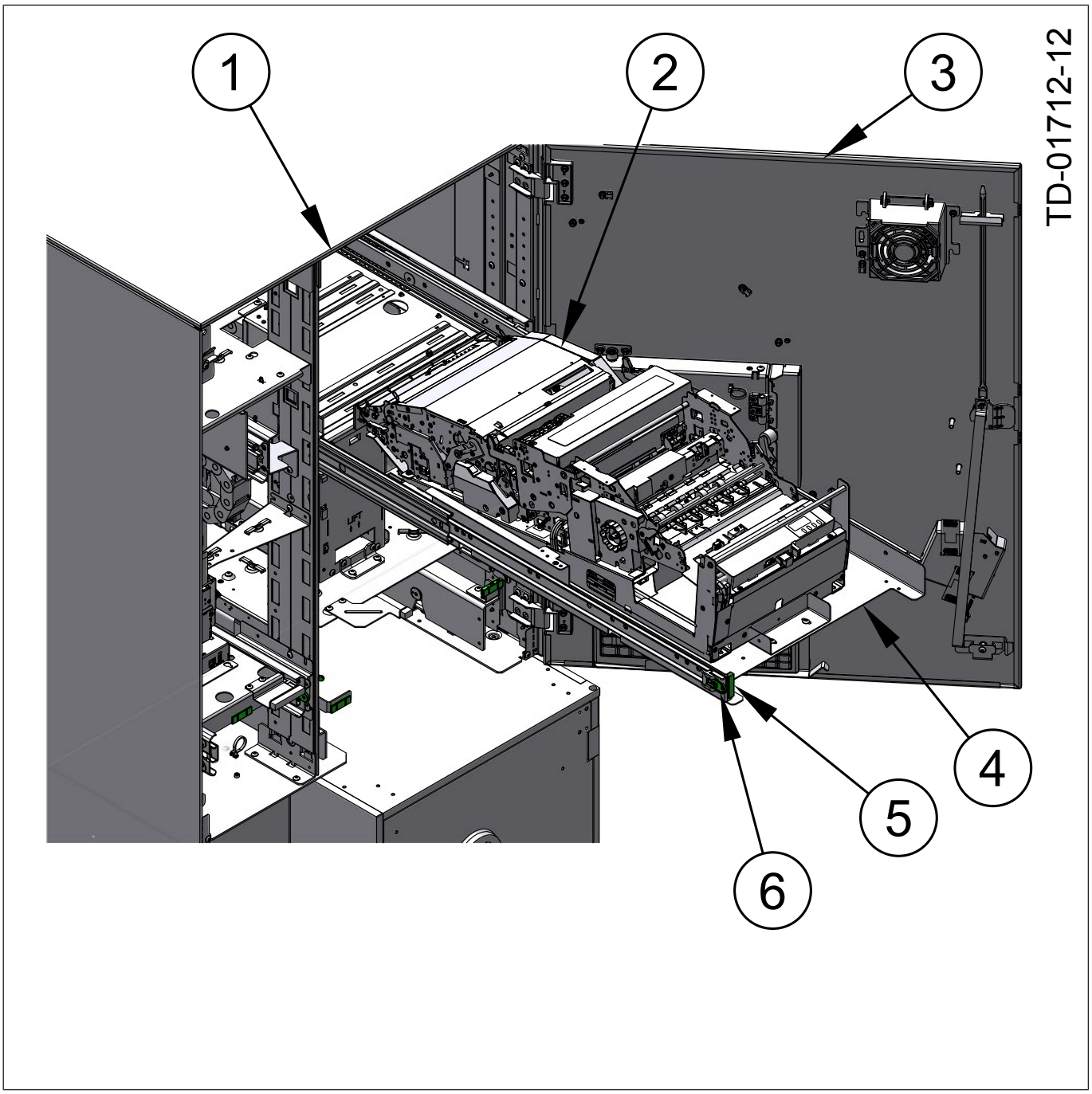

Figure C-16: Passbook Printer

1	Upper chassis
2	Passbook printer on component tray
3	Upper chassis rear door
4	Component tray
5	Component tray release handle
6	Component tray release latch.

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C.4.5 Accessing the Safe

Accessing the safe is the same for any DN Series™ 450 system. Refer to *Section 5.11*.

C.4.6 Accessing the CMD-V6C or CMD-V6A Cash Dispenser

The CMD-V6C or CMD-V6A cash dispenser for the advanced upper cabinet and extended window trim system is the same as the standard DN Series™ 450 system. Refer to *Section 5.5*

C.5 Maintenance

Refer to *Section 6* for information about cleaning the DN™ Series 450.

C.6 Related Documentation

The documents listed in the following table provide additional information for maintaining and repairing the system. These manuals are available through the existing distribution and ordering processes. All documentation should be treated with appropriate respect concerning confidentiality, as noted in the front of each manual. Documents can be ordered on the Diebold Nixdorf website at https://www.diebold-nixdorf.com/en-us/customer-service/documentation-services/requests.

Table C-3: Related Customer Hardware Documentation

Manual Title	Order Number
DN Series™ Recycling Module (RM4V) Dispenser Operator Manual	01750308109
DN Series™ Recycling Module (RM4H) Dispenser Operator Manual	01750306327
DN Series™ Check Deposit Module Operator Manual	01750333061
DN Series™ Coin Dispenser Operator Manual	01750333943
DN Series™ Dip Card Reader Operator Guide	01750332044
DN Series™ TP29 Journal Printer Operator Manual	01750333697
DN Series™ Motorized Card Reader Operator Manual	01750330805
DN Series™ ActivEdge Secure Card Reader Operator Guide	01750332042
DN Series™ TP31R (with retract) Receipt Printer Operator Manual	01750333705
DN Series™ Fingerprint Scanner Operator Manual	01750336258
DN Series™ 450 Through-the-Wall Walk-up System Operator Manual	01750331826
DN Series™ CMD-V6C Cash Dispenser Operator Manual	01750342709
DN Series™ T20 Form Printer Operator Manual	01750339664
DN Series™ Advanced Passbook Printer Operator Manual	01750343929
DN Series™ CMD-V6A Cash Dispenser Operator Manual	01750331826

Available in English language only

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C.7 Technical Data

The technical data for the advanced upper cabinet and extended window trim system is different from the standard DN Series™ 450 system. Refer to the following tables for specific information.

C.7.1 Electrical Characteristics

Table C-4: Electrical Characteristics

Supply voltage range	100-240 V
Rated frequency	50/60 Hz
Network type	TN (network with PE conductor)
Permissible tolerance for rated voltage	+/- 10%
Permissible tolerance for rated frequency	+/- 1%

C.7.2 System Conditions

Numbers in the following table do not include the heater.

Table C-5: System Conditions

	110-120V		**220-240V**	
Without UPS	Idle Mode	Operation (maximum)	Idle Mode	Operation (maximum)
Rated current consumption (depends on system configuration)	1.2 A	2.4 A	0.6 A	1.4 A
Active Power	120 W	330 W (without heater) [1]	110 W	330 W (without heater) [1]
With UPS				
Rated current consumption	2.3 A	3.5 A	1.2 A	2.0 A
Active Power	250 W	460 W	240 W	460 W
Protection Class	1		1	
Type of system connection (wall outlet)	Country-specific safety plug		Country-specific safety plug	
Fuse	20A automatic circuit breaker		16A automatic circuit breaker	
Degree of protection according to EN 60529:	IP X0		IP X0	
[1] A heater would add 700W.				

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C.7.3 Installation Specifications

Table C-6: Installation Specifications

Dimensions:	
Height with signage	---
Height without signage	1615 mm (63.5 inches)
Width	719 mm (28.3 inches)
Depth (360 mm wall)	1321 mm (52 inches)
Depth (203 mm wall)	1164 mm (45.82 inches)
Operation and Maintenance Space	0.446m2
Weight [1]	
CEN I safe	
Device Weight	672.2 kg (1482 pounds)
Surface Load	13.59 kN/m2
Maximum fan capacity (depends on temperature)	m3/h
UL safe	
Device Weight	622.7 kg (1373 pounds)
Surface Load	15.13 kN/m2
Maximum fan capacity (depends on temperature)	m3/h
[1] The weight specifications indicate the empty weight of the system and the installation version free-standing.	

Table C-7: Plinth Weights

Part Number	Description	Weight
01750296970	Mounting set CEN_UL 300	1.9 Kg
1750309735	DN OFA Rahmen 25mm UL	30 Kg
1750310045	DN OFA Rahmen 25mm CEN	31.5 Kg
1750340816	DN OFA Sockel CEN 120mm	49 Kg
1750340921	DN OFA Sockel CEN 191mm	65 Kg
1750342755	DN OFA Sockel UL 120mm	36.5 Kg
1750343032	DN OFA Sockel UL 191mm	49Kg
01750340241	DN OFA adj. plinth 155 – 240mm CEN	73 Kg

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Table C-7: Plinth Weights (continued)

Part Number	Description	Weight
01750341166	DN OFA adj. plinth 115 – 160mm CEN	65 Kg
1750334215	Inst.-Sockel 25mm DN OFA-S CEN kpl.	27 Kg
1750334219	inst.Rahmen 25mm DN OFA-S UL kpl.	26.5 Kg

C.7.4 Effective Power and Heat Output

Table C-8: Effective Power and Heat Output

System	Effective Power (W)		Heat Output (W)
DN Series™ 450	Idle Speed	Operation	190
	168	250	

C.7.5 Mechanical Environmental Conditions

Table C-9: Mechanical Environmental Conditions

	Class	Notes
Operation	3M2	Building without significant vibrations caused by other objects
Transport (in original packing)	2M2	All types of commerce vehicles and trailers as well as rail and air transport
Storage (in original packing)	1M3	Noticeable vibration and bumps caused, for example, by machines or passing vehicles

C.7.6 Environmental Conditions

Noise emissions should be taken into account when selecting the installation site. Fans in operation or the noise produced during a transaction could disturb people in the immediate vicinity of the system and may therefore need to be diminished with soundproofing. These must comply with the environmental conditions that apply to the specific system and the maintenance spaces.

Table C-10: Environmental Conditions

Climatic Environmental Conditions		
	Air Temperature degree C (degree F)	Relative Air Humidity (%)

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Table C-10: Environmental Conditions (continued)

Operation	(Outside) -40C to 50C (-40F to 122F)	5 to 85
	(Inside) 0C to 40C (32 F to 104F)	
Transport	-25 C to +60 C (-13 to 140 F)	5 to 98
Storage	-10 C to +60 C (14 to 140 F)	5 to 95
Noise Emissions		
Characteristic noise value according to ISO 9296	45 dB(A) Idle mode	57.1 dB(A) Operation (typical operating cycle)
Workplace-related sound pressure level	LpAm (at adjacent workplace)	

C.7.7 Compliance with Standards and Approvals

Standards Met

- IEC 60950 / IEC 62368
- EN 60950 / EN 62368
- CSA C22.2-60950 / CSA C22.2-62368
- UL 60950 / UL 62368
- BSMI Standard CNS 14336

EMC Standards

- EN 55032 / class b
- EN 55024
- FCC CFR 47, part 15, subpart B, class A
- ICES-003 (CSA 108.8)
- BSMI-Standard CNS 13438 class B

Conformity

The CE mark of conformity attached to the product or its package indicates that the product complies with the requirements of the following EC directives:

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EC
- RoHS Directive 2011/65/EU

The corresponding statement of compliance has been issued by:

Heinz Nixdorf Ring 1
33106 Paderborn
Germany

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Notes Concerning Radio Interference Suppression and Electrical Safety

All other devices connected to this product must comply with the EMC Directive 2014/30/EU and the Low Voltage Directive 2014/35/EU.

Certification for Data Transmission

The certification number or CE mark of the data transmission module (if available) is attached directly to the DT card or to the housing of the system unit.

C.7.8 Environmental Protection

Environmentally and recycling-friendly product development

This product has been designed according to our in-house specification regarding environmentally and recycling-friendly product development.

This means that crucial criteria such as long life, choice of material and its labeling, energy efficiency, emissions, packaging, ease of disassembly and recyclability have been taken into account. This conserves resources and lessens the impact on the environment.

Saving energy

Please switch on Systems 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 and at the end of work.

Disposing of used consumables

Please dispose of printer consumables, used batteries as well as cleaning and maintenance materials in accordance with national regulations (where relevant complying with vendor specifications).

Used batteries should not be disposed of as normal municipal waste within the EU (crossed-out wheeled bin symbol). The chemical names of certain pollutants, if included in the batteries, can be found underneath the symbol of the crossed-out wheeled bin. Examples here include: (Pb) lead, (Cd) cadmium and (Hg) mercury. Used batteries can be disposed of free of charge throughout the EU.

Labels on plastic parts of the housing

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

Returning, remarketing, recycling and disposal

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

Please observe the respective national regulations with regard to the disposal of electrical equipment.

Electrical equipment should not be disposed of as normal municipal waste within the EU (crossed-out wheeled bin symbol).

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For information regarding the possible repurchase of used systems, please contact:
contact.remarketing@dieboldnixdorf.com

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Glossary

Bill(s)

Refers to bank notes that are stored in the cassettes and dispensed from the system.

Consumer

Refers to any person who uses the system.

Device

Refers to the standard and optional equipment available with the system, such as monitors,printers, and dispensers.

Fascia

Refers to the front area of the system where the consumer transacts business.

Institution

Refers to any bank or business that might purchase the system.

Maintenance

Refers to the routine tasks performed by an operator to keep the system operational.

Media

Refers to any type of document (such as a bank note or coupon, etc.) that is stored in the cassettes and dispensed from or deposited into the system.

Module

Refers to the major electro-mechanical devices of the system, such as displays, printers, and dispensers.

Operator

Refers to a person who performs routine maintenance, such as replenishing supplies. An operator may also perform procedures that help determine the cause of certain problems, such as jammed paper in the printer.

Safe Enclosure

Refers to the high security enclosure below the upper chassis. Devices in the safe store the media dispensed from and deposited into the system.

System

Designates the automated teller machine as a complete unit. The system consists of a safe and the head area.

T/SOP

The T/SOP or product-specific software supports you in activities that are necessary for operating the system, determining the system status (status query), and avoiding incidents through maintenance activities. This functionality can be used parallel to normal operation without interrupting the running application. This ensures a high level of system availability.

Upper Chassis

Refers to the area behind the fascia and directly above the safe. The upper chassis houses both consumer and operator devices (such as printers, card readers, etc.).

User guide lights

Lights that guide the consumer through a transaction by calling attention to the next step in the transaction. These lights can display in colors.

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