



**CM18**

Next generation cash recycling



# Freedom and Security

- Complete physical protection of cash
- Certified Safes
- Controlled user access
- Secured communications
- Programmable access times
- Silent alarms
- Remote monitoring and updates

Teller Cash Recyclers, more simply known as TCRs, started to gain real popularity with banks during the latter part of the Nineties.

The TCR is an automated, fully certified safe containing all the technology required to process banknotes. It is able to identify and authenticate banknotes, sort specific notes to secured containers and provide banking applications with auditable detail for each transaction.

Removing the need to count and verify banknotes means that the Teller can dedicate more of their attention to their customer.

**The CM18 represents the most advanced TCR available today.**

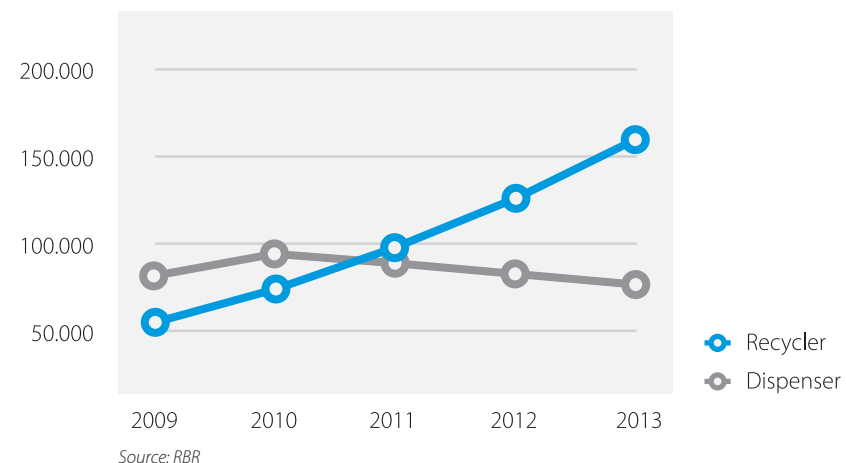
Secure storage of all notes within the CM18 is achieved through a range of safe types, ensuring all insurance requirements are met and covering the major international certifications of UL and CEN.

Configurable access controls ensure that only authorised users can communicate with the device, as defined by a supervisor, or designated member of staff.

Communications between Host and TCR may be encrypted using standard techniques. Further levels of security are provided by using time delays for cash dispenses, with variable length delays based on the value of the required dispense, and another option which restricts machine operations to defined working hours.

Alarm functions related to attempted robberies or physical attacks on the safe are completely programmable and cannot be tampered with from outside the safe.

Estimated TCR market worldwide



# A solution for every location

The compact size and flexible design of the CM18 ensures that it will fit into the vast majority of teller desk configurations with little or no change.

## Single teller configuration

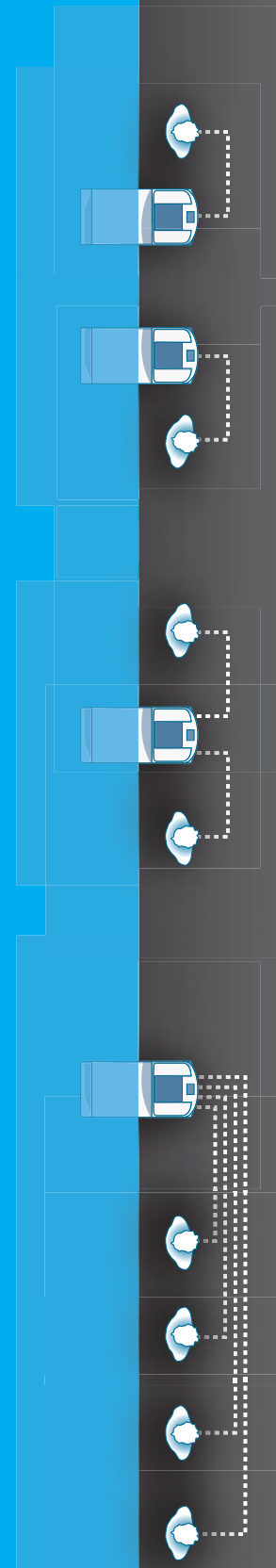
The operator works in a small area with the TCR situated under a desk. The CM18 can be supplied with either a left or right hand hinged door – enabling the device to be situated next to a wall.

## Dual teller configuration

Two operators work in an open space, sharing the TCR. The device performs transactions for both operators, identifying clearly which operator has control of the unit via illuminated indicators.

## Multi-user configuration (Island Mode)

The TCR is shared by several users. Transactions are accepted and stored in the device and are executed when the operator identifies themselves using their access credentials. The CM18 can be located immediately behind the teller positions or further away in a more secure location.



# Designed and developed to offer unprecedented levels of integration

The principle design objective behind the CM18 was to create an innovative device that would **integrate seamlessly into any modern cash teller environment**, performing the counting, depositing and dispensing of banknotes in the simplest and most straightforward of manners, whilst increasing security at the teller position.



The CM18 features a **Touch Screen Interface** that simplifies the use of the device. The introduction of the Touch Screen Interface - using **simple icons, colours and graphics** - permits complex cash functions to be performed efficiently and accurately with just a few key presses and without the need to implement this functionality at the teller application level.

The input slot is situated adjacent to the Touch Screen Interface - **the most ergonomic layout** for use by a Teller. Bundles of up to 200 banknotes at a time can be deposited, enabling most cash transactions to be completed in a single session.

The CM18 features **two output slots**. This feature allows verified and unverified banknotes to be identified separately. They are also used during the validation, sorting and counting functions.







#### Ergonomic features of CM18

By positioning the touch screen next to the three note slots, thus controlling or limiting shoulder movements, the CM18 design reduces fatigue from prolonged or extensive use.

This centralised positioning of screen and slots also enables the device's status to be checked with a **single look in one direction** – again the most effective and comfortable solution.

## Putting Ergonomics and Design to work

#### A general view

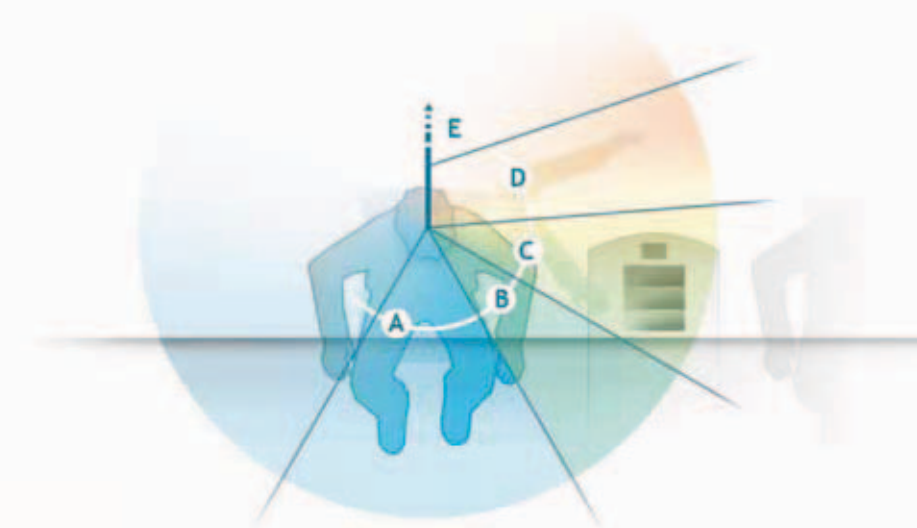
Devices designed to help operators perform a task must be both **simple to use and to control**.

A device that is comfortable in daily use creates a feeling of confidence, security and professionalism that is required to deliver banking services.



It is essential that any repeated, bodily movement can be executed with **efficiency and ease**. A device's operational space should also enable easy access to frequently used areas.

An example of this is seen in the CM18's design where the operator uses no more than a 90-degree shoulder rotation.



#### Operator-machine interaction zones

- A** Zone covered only by visual field
- B** Visual field with neck rotation
- C** Visual field with neck and shoulder rotation
- D** Visual field with neck and whole body rotation
- E** Visual field with neck and whole body rotation and whole body movement





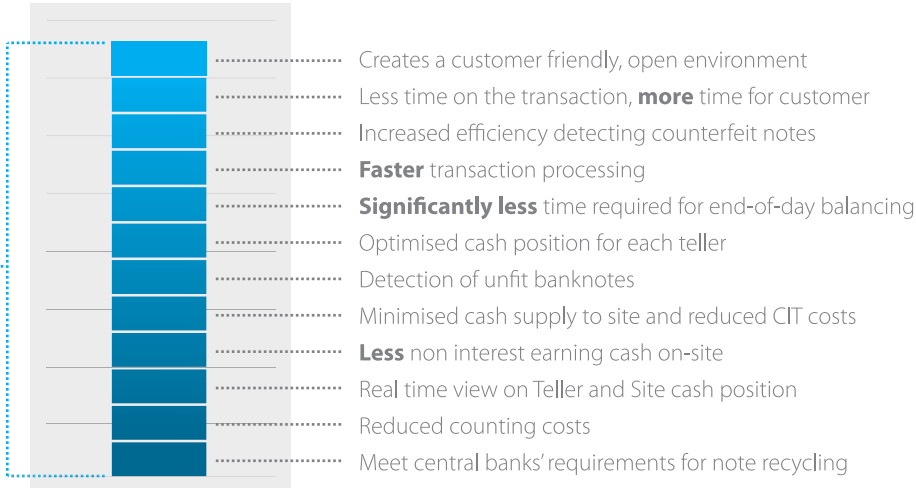
Only 500mm of space is required to access all cassettes

# The TCR revolution

One major benefit of the CM18 TCR is that rather than focussing on the manual process of handling cash, the teller can give their **full attention to their customer**. This customer-friendly environment, with the teller able to engage more with their client, creates a conducive atmosphere for building customer relationships leading to **improved customer loyalty and satisfaction**. This can also provide an ideal opportunity to market other services.

Advantages and benefits of deploying a CM18 TCR

## Analysing the revolution



**Intelligence included as standard**  
Using the integrated Microsoft Windows CE based processor, the CM18 can perform many useful functions locally, i.e. without having to interact with the main Teller Application. Banknote counting and validation, note fitness sorting and management of foreign currencies that the unit does not have storage capacity for, are only some of the operations available. Detailed counting and note type information is displayed on the device's colour display and stored in the internal journal file.



**Video support for all**  
The Touch Screen Interface is designed to assist the operator by providing simple/clear messages, instructions and even video clips that offer guidance on the device's functions. Using a secure log-in, a supervisor can manage users, control access permissions, programme permissible operation times and set delays for banknote delivery. The Touch Screen Interface also helps service engineers, showing performance data, allowing troubleshooting and availability analysis to be performed, in addition to providing diagnostic test functions.



**Smallest Service Footprint**  
The CM18 has one of the industry's smallest operational and service footprints which means it can be installed in the smallest of branch or office space without the need for any refurbishment. This saves significantly on installation costs.

Branches equipped with TCR's register significant **increases in product sales** by tellers, increased security for branch cash holdings and improved branch staff protection.

The secure nature of the CM18 safe **reduces the risk of robbery** as the teller has only restricted access to cash. The CM18 can be programmed with a predefined 'duress' dispense which also informs the central system that a theft is in progress.



# Identifying unfit banknotes

To combat the circulation of counterfeit notes, the European Central Bank, the Russian Central Bank, the South African Reserve Bank and many other national central banks have requested member Commercial Banks to **remove unfit notes from circulation**. Many other central bank agencies are also considering mandating this process, or have already planned it.

The terms of reference for detecting counterfeits and selecting notes that are no longer suitable for circulation, as set by the relevant Central Bank agency, defines when a banknote is considered 'unfit'. Many of the controls for verifying genuine or unfit notes are **very complex** even for experienced cashiers. CTS Cashpro regularly certify the CM18 with the European Central Bank as well as all other central banks that have mandated similar procedures. The CM18 uses **advanced note processing and recognition technology** to perform all the checks required for detecting unfit banknotes, processing up to five notes per second.

**In summary:**

- Satisfies Central Bank standards
- Reduces transport costs
- Reduces counting costs
- Allows loading of ATMs with “fit” notes

During deposit operations, **unfit banknotes are segregated** into a storage cassette from which they are dispensed only when the “Discharge Unfit Notes” command is given and **without the need for the safe to be opened**.

The CM18 also has the capacity to record the details of banknotes handled, producing conformance reports when requested by the authorities.



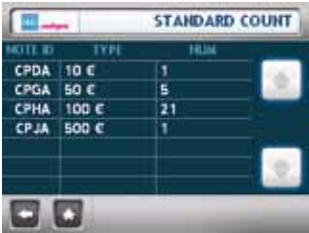
Suspect banknotes



Counting results



Counting details



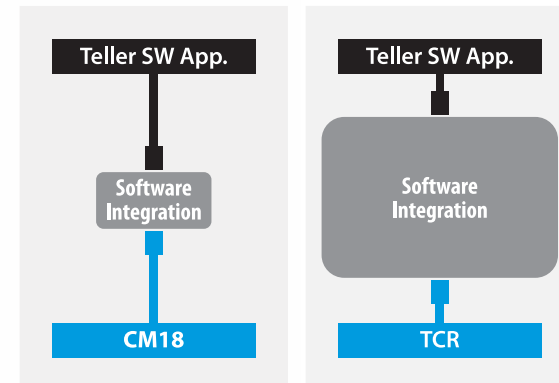
The CM18 allows the result of operations such as counting or depositing to be verified immediately, using the CM18's Touch Screen Interface. This permits banknote quality to be controlled in detail, counterfeits to be detected and uniquely identified, the number of the denominations to be counted and the total amount of the transaction to be calculated automatically.





Integration differences between the CM18 and other TCRs

#### Integration activities



Correct integration of a TCR with the Teller SW Application is **essential** to ensure correct cash desk operation and accountability.

Compared to previous generations of TCR's the CM18 **simplifies** this by using an integrated Microsoft Windows CE processor that has a range of built in cash handling and diagnostic functions, thus **removing the need** to implement these at the Teller Application level.

Examples of functions that are handled on the Touch Screen Interface without implementing them in the Teller SW Application are:

- Unit Configuration
- Counting
- Sorting
- Operator guidance (with video clips)
- Error handling
- Banknote analysis

**The CM18 is compatible with many middleware platforms and multi-vendor software solutions, including:**

CasheXpress CX20F - Finsolint  
Xpring for J/XFS and Xpeak for Xpeak - Cashware  
Lutzwolf Device Controller - Lutzwolf  
Global DS for J/XFS - Dynasty  
ProAKT™ - Wincor Nixdorf BT  
Universal Cash Management (UCM) - Compuflex  
CashWare - Benchmark

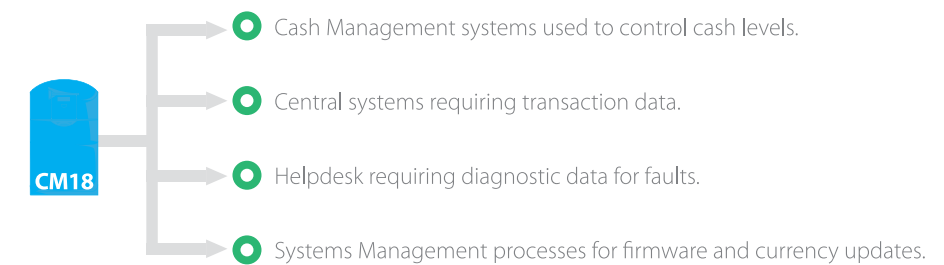
## Connecting to all the right places...

One of the innovative functions of the CM18 is its ability to **communicate over multiple channels** concurrently – connecting to several systems at once.

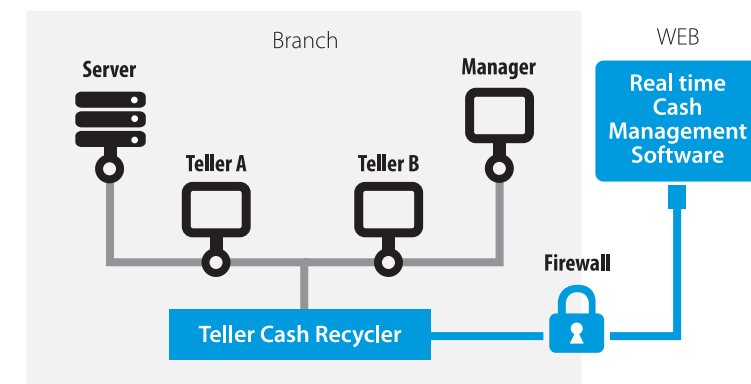
One communications channel is used internally by the CM18 for interacting with the main Teller Application and is used by the teller operators and their supervisors for the handling of cash deposits and withdrawals.

At the same time, interaction with the CM18 on-board application is completely separated from the main Teller Application; for example, specific denominations can be restricted to peak times, directly on the device, without reconfiguring the application.

#### CM18 multichannel communications



#### CM18 Data Flow



Remote monitoring allows the status of the CM18 to be controlled and real-time interventions to be carried out, all over secure, protected connections.

# Flexibility and capacity

While the CM18 fits seamlessly under any standard desk, the CM18T is designed for under-the-counter and standing environments whilst maintaining the same reduced footprint.

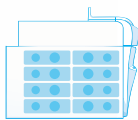
Additionally the CM18T offers a scalable capacity that can grow from 8 to 12 recycling modules at any time. This is achieved simply by inserting more modules.

Since the volume of banknotes in circulation varies by denomination, the capacity of cash recyclers is often compromised as some cassettes will fill up faster than others.

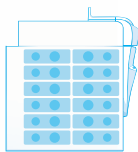
In the new CM18 and CM18T the flexible configuration options address this issue, allowing the cassette capacity to be optimised:

**“Virtual cassettes”** enable the distribution of one denomination across several recycling modules without impacting the application software

**“Balanced cash handling”** enables the even distribution of notes among these modules. This ensures that in the unlikely event of failure of one of the modules, cash operations are unaffected.

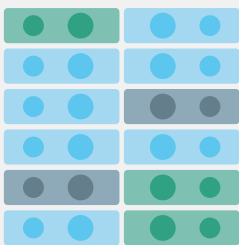


**CM18**  
8 modules



**CM18T**  
Up to 12 modules

In many countries, or border regions, where two or more currencies are in circulation a larger volume of notes may be managed. **The CM18T with its greater capacity is the ideal solution because it is possible to use up to 12 recycling modules.**



Multiple cassette configurations allow for optimised note capacity.

The higher-volume denominations will be assigned to 2 or more modules, whilst low-volume denominations can be assigned to one module or mixed with other low-denomination notes.

Recycling modules can be configured in many different ways: single-denomination, multi-denomination, multi-nation, unfit notes (not recyclable), overflow. Easily controlled via the application software, the configuration can be changed as required, depending on day of week or month.



# Easy integration

The flexible nature of the CM18, with its compact size and small service footprint, is demonstrated in the images below. In every one of these situations, the CM18 has been installed without requiring any expensive changes, such as raised desks or movement of walls or partitions.

With its unique combination of functions, ergonomics, Touch Screen Interface, easy integration and security features, the CM18 has enabled customers to deploy TCR technology in locations previously thought not possible.



Single operator or shared, the CM18 can be positioned under a desk, to the left or right, or adjacent to a desk, again on either side. The flexible design of the CM18 can be integrated into any known banking hall environment with the minimum of investment.







**Remote Management Options**

Monitoring functions for optimised cash management. Management of device faults.  
Ability to programme and configure unit.  
Proactive management of Preventative Maintenance visits.  
Online updating of firmware and banknote templates over secure connections.



**Touch Screen Interface**

Integrated Touch Screen Interface. This purpose built interface allows the operator to perform offline operations and provides help using video images. Simplifies both First and Second Line Maintenance tasks and the resolution of faults. Provides the operator with the ability to access the device's functions without consulting the user manual.



**Physical and logical security**

UL291, CEN L, CEN III safes with standard options of floor anchorage. Alarm sensors and provision of secure locks. Safe door opening can be software controlled.  
Option of secure communications software (TCP/IP V6-IPSEC) through dedicated Windows CE board. Option of left or right side hinge on unit door.

**Recycling - Deposits and Dispenses**

- Deposit/dispense transactions in batches of up to 200 notes (without limits per transaction)
- Note bundles can contain any supported currency/denomination in any order/orientation
- Deposit speed up to 5 notes per second
- Dispense speed up to 7 notes per second

**Counting and Sorting**

- Simple note count - Standard note count - Denomination fit note sort - ATM Count

**Validation and Fitness Sorting**

- Full image sensors for Visible, UV & IR light plus magnetic and ultra sounds sensors
- Reader can store up to 16 currency definitions of which 4 can be active
- Reader can store up to 32 denomination definitions per currency

**Capacity**

- Standard CM18: 8 recycling cassettes, up to 500 notes per cassette (4000 notes total)
- CM18T: 8, 10 or 12 recycling cassettes, up to 500 notes per cassette (6000 notes total)

**Connections**

- RS232, USB 2.0 or TCP/IP for Application communications
- RS232 for optional peripherals
- USB 2.0 or TCP/IP for service updates/engineers
- Optional Embedded XP PC enabling integral Teller Application support

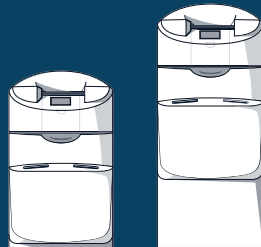
**The CM18 is designed and manufactured in Italy**

**CM18 - UL291**

Width: 440 mm  
Depth: 800 mm  
Height: 672 mm  
Weight: 316 Kg

**CM18 - CEN III**

Width: 500 mm  
Depth: 825 mm  
Height: 690 mm  
Weight: 454 Kg



**CM18 T - UL291**

Width: 440 mm  
Depth: 800 mm  
Height: 942 mm  
Weight: 398 Kg

**CM18T - CEN III**

Width: 500 mm  
Depth: 825 mm  
Height: 987 mm  
Weight: 583 Kg

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