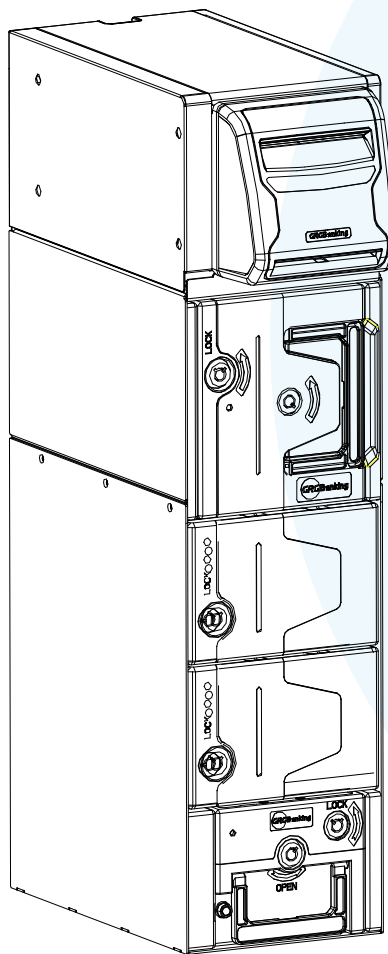# Banknote Recycling Module

BR-15S

Technical Manual

1. Overview

The banknote recycling machine BR-15 is a core module that can realize the functions of single banknote identification, deposit, recycling, and automatic refill of banknotes. It has a high degree of reliability, ease of use and easy maintenance. It can realize self-recycling of changing change, reduce the time spent on replenishing money, counting, and replacing cash boxes, reduce the frequency of replacing cash boxes and refill boxes, and reduce sleeping cash in automatic equipment, risk of cash exposure, loss of statistical costs and Downtime for checkout, cash delivery, etc., to improve overall operational efficiency.

Main application occasions: mass transit automatic ticketing system, small recycling bank machine, parking lot automatic payment change equipment, retail automatic charging change equipment, public transport ticket vending machine and automatic equipment requiring cash recycling function, etc.

2. Model

BR-15-41S: Banknote recycling - standard version, equipped with 4 recycling drums, 1 cash refill box.

BR-15-21S: Banknote recycling - single recycling module version, equipped with 2 recycling drums, 1 cash refill box.
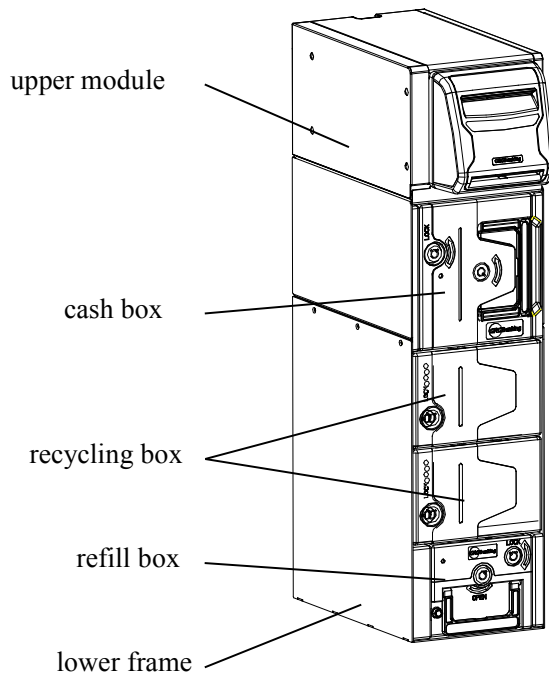
BR-15-02S: Banknote recycling - all-in-one version, equipped with 0 recycling drums and 2 refill boxes.

BR-15-00S: Banknote recycling – single acceptance version, equipped with 0 recycling drums and 0 refill box.
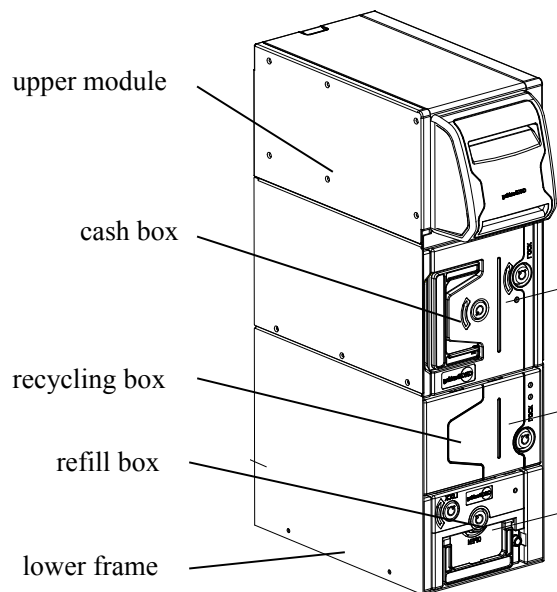
3. Size
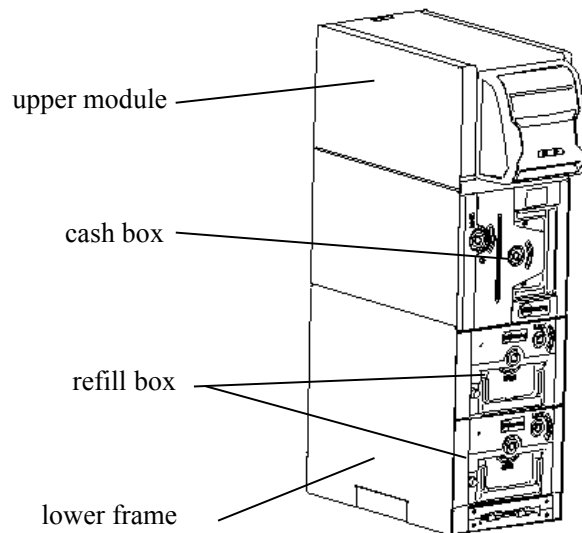
3.1 The composition of the module

BR-15-41S Banknote Recycling - standard version consists of five parts: upper module, cash box, refill box, recycling module × 2, and lower frame, as shown in the figure below:

upper module

cash box
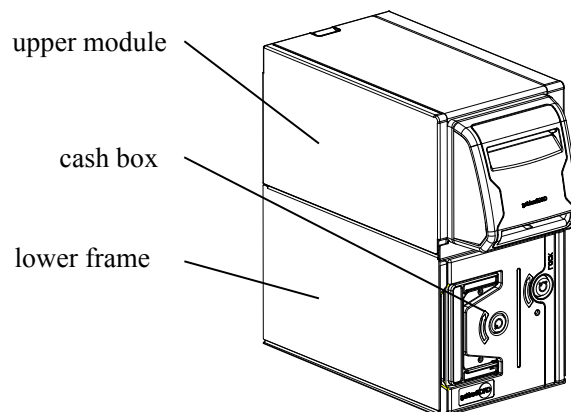
recycling box

refill box

lower frame

BR-15-21S Banknote Recycler - single recycling module version, consists of five parts: upper module, cash box, refill box, recycling module, and lower frame, as shown in the following figure:

upper module

cash box

recycling box

refill box

lower frame

BR-15-02S banknote recycler - all-in-one version consists of four parts: upper module, cash box, refill box × 2, and lower frame, as shown in the following figure:

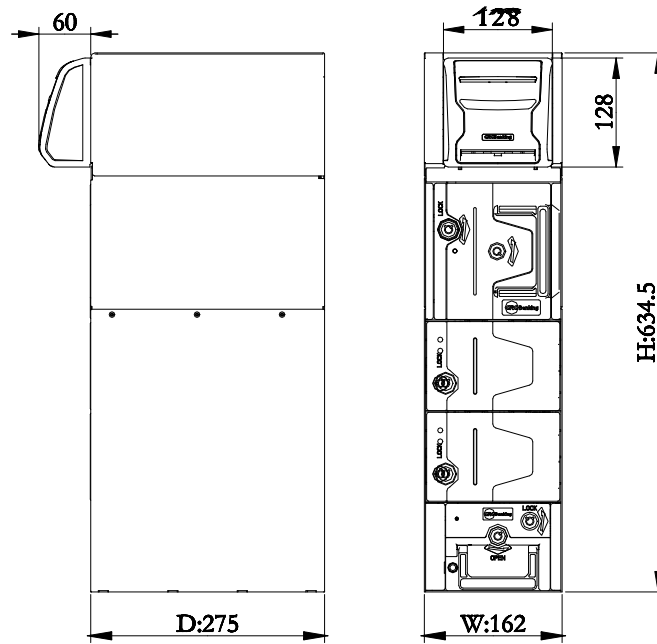upper module

cash box

refill box

lower frame

BR-15-00S banknote recycler - single accepter version consists of three parts: upper module, deposit box and lower frame, as shown in the following figure:
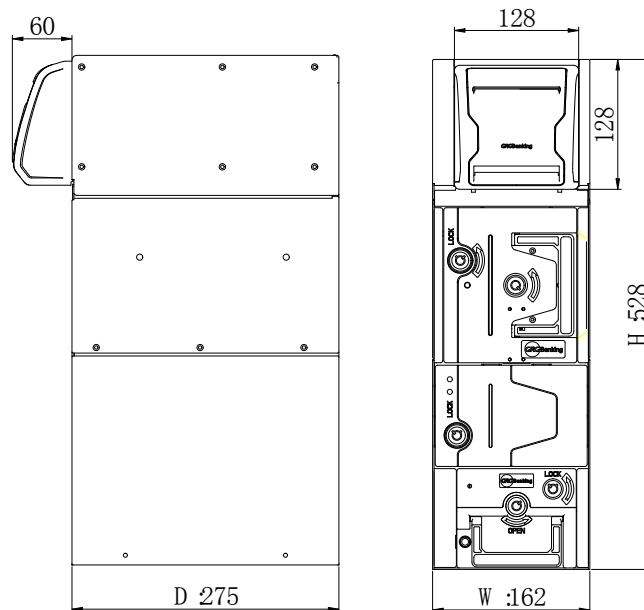

upper module

cash box

lower frame

3.2 Dimensions

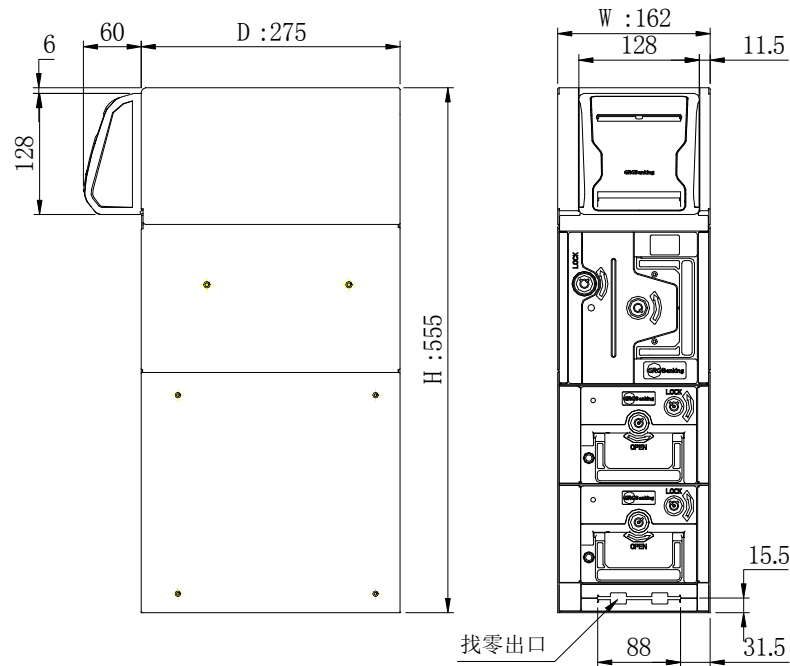BR-15-41S Banknote Recycling - standard version dimensions:

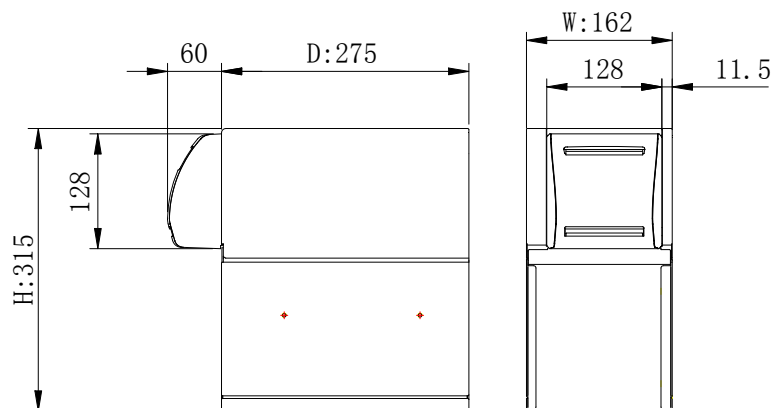Length 275×Width 162×Height 634.5 (unit: mm)

BR-15-21S Banknote Recycling - single recycling modular version dimensions:

Length 275×Width 162×Height 528 (unit: mm)

BR-15-02S Banknote Recycling- All-in-One dimensions:

Length 275×Width 162×Height 555.5 (unit: mm)

BR-15-00S Banknote Recycling- single acceptance version dimensions:

Length 275×Width 162×Height 315 (unit: mm)

4. Features

- Single bill insertion supports 4 direction, fast deposit.
- Provides 4 kinds of configuration free combination, including 4 recycling module configurations, 2 recycling module configuration, 2 change and cash-out configuration, single acceptance configuration.
- Rich experience banknote identification and anti-counterfeiting technology.
- Compact and secure, with international multi-currency banknote acceptance and identification system.
- Supports up to 4 different denominations of banknotes recycling, optimizing and flexible change solution
- Recycling drum escrow technology ensures reliable recycling of banknotes
- Cash refill box provides faster, more convenient and safer change refill Solution

- Reduce the frequency of changing the cash drawer and reduce the usage of coins
- Electronic ID is attached to the cash drawer and the refill drawer, which is convenient for automatic identification and management.
- Easy maintenance, no need for tools on-site to quickly troubleshoot banknote jams

5. The characteristics of each module

Upper module:

➢ Universal entry light for user convenience.

➢ Up to 20 banknotes for change in stack, the entire stack is given to passengers at one time, and the small denomination banknotes are on the top.

➢ Fast accept of banknotes, with an average processing time of less than 1.5 seconds per sheet.

➢ Banknote acceptance correction machinery ensures fluent banknote operation

➢ With exit and entrance gates, high security; banknote insertion design is ergonomic

➢ Industrial-grade electronic components, suitable for harsh environments such as high and low temperature, high humidity, etc.

➢ Three-line anti-counterfeiting technology, up to 100,000 identification scanning points

➢ Multi-spectral full-width image scanning (CIS technology) and full-width magnetic signal detection, high security banknote identification.

➢ Record and save the banknote crown code, which can realize the function of banknote serial number tracking.

Cash box:

➢ Rugged, double-lock design (change and open the cash drawer) and secure cash drawer with an interlocking mechanism.

➢ Electronic identification tag with unique identity.

➢ Removable independent cash drawer, no electrical connection, high reliability.

Refill box:

➢ Rugged, double lock design (replace and open the refill box)

➢ Electronic identification tag with unique identity

➢ Removable independent cash refill box, no electrical connection, high reliability

➢ Automatic dispensing of banknotes to the drum can be set up, allowing operators to safely load banknotes in the background

➢ Support multi-denomination mixed banknotes, strong scalability

Recycling box:

➢ Recycling of up to 4 different denominations of banknotes, up to 260 in total, monitoring the storage status of banknotes throughout the process

➢ Last in, first out to ensure the return of the original currency; the optimized change scheme enhances passenger satisfaction

➢ The denomination can be configured according to needs through software settings

➢ Reliable drum cycle change technology for a smaller footprint

➢ Intelligent sorting of received banknotes, not suitable for changing banknotes and not participating in the circulation, reducing the banknote stuck rate, and improving passenger satisfaction.

See next page for Technical parameter

6. Technical parameter

Item		Performance Specifications
Banknote Inserting	Banknote side	vertical feed
	Specific direction	Unlimited, all 4 directions
Discern	Currency	Simultaneously supports 100 different denomination banknotes (one country or multiple countries)
	Material	Paper, plastic base (polymer)
	Banknote Acceptance	≥98%
	Banknote size	Length range: 120~180 mm; width range: 60~85 mm.
Detect Means	Optics	Full-width image sensor (CIS technology), no less than 100,000 measuring points per banknote.
	Magnetic	Full-width magnetic sensor detection.
Speed	Accept speed	BR-15-41S/ BR-15-21S: Approx. 1.5 s/note BR-15-02S/ BR-15-00S: Approx. 1.5 s/note
	Recycling speed	BR-15-41S/ BR-15-21S: 1.8 seconds for 1 note, 4.8 seconds for 5 notes in stack, 7.5 seconds for 10 notes in stack, 15 seconds for 20 notes in stack BR-15-02S: About 1.5 seconds per sheet for change
	Refill speed	BR-15-41S/ BR-15-21S: Approx. 2.2s/note
Capacity	Escrow	20 notes.
	Number of recycling drums	BR-15-41S: 4 BR-15-21S: 2
	Recycling drums capacity	BR-15-41S: 260 notes (2pcs 50 notes, 2pcs 80 notes) BR-15-21S: 130 notes (1pcs 50 notes, 1pcs 80 notes)
	Cash box	1000 notes ± 50 notes (length 231m, width 137mm, height 161mm) 500 notes, 2000 notes with MOQ (100pcs)
	Refill box	BR-15-41S/ BR-15-21S: 1 piece, a single capacity of 500 notes (length 230mm, width 123mm, height 102mm) BR-15-02S: 2 pieces, a single capacity of 500 notes (length 230mm, width 123mm, height 102mm)

Environment	operating temperature	0℃~60℃
	storage temperature	-20℃~60℃
	humidity	20%RH～90%RH (non-condensing)
Upgrade	Upgrade method	With online download upgrade function
Weight	Cash box (empty box)	2kg
	Refill box (empty box)	2kg
	whole machine	BR-15-41S: 26kg BR-15-21S: 22kg BR-15-02S: 24kg BR-15-00S: 14.6kg

EMC	Comply with relevant national standards GB/T 17626, CE