



Cash Register

ECR 7190/ECR 7790/ECR 7790LD

SERVICE MANUAL

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PREFACE

This publication is intended for use by technicians responsible for installing and servicing ECR 7190 / ECR 7790 / ECR 7790LD systems. The objective of the manual is to supply all the information necessary for correctly installing and servicing the product.

PREREQUISITES

The approach adopted to the topics covered in this manual presumes a previous knowledge of similar products.

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CHAPTER 1 – GENERAL OVERVIEW

MAJOR FEATURES

Departments

- 14 programmable departments (ECR 7190)
- 40 programmable departments (ECR 7790-7790LD)

PLU

- Up to 500 programmable PLUs or sub-departments

VAT

- 4 VAT rates handled + tax exempt

Clerks

- 8 clerk identification codes

Payment Methods

- Card, Check, Charge and Cash tender media key, with change tendered on all payments

Exchange Rates

- 4 foreign currencies with related currency descriptions

Specialized Keys

- Received-on-account key
- Paid-out key
- Void-key (to void entries in a sale or after sale is registered)
- Refund-key (to register returned items for full return or credit)

Programmability

- Taxable or tax exempt transactions, single or multiple item sales
- Percentage discount and add-on key
- Date and time to be printed on receipt (ECR7190)
- Date and time to be printed on receipt or journal entry (ECR7790-7790LD)
- Range of VAT totals to be printed on the sales receipt

Security Functions

- Manager password associated with cashier security codes
- Passwords and protection codes (ECR 7190)
- Memory protection (ECR7790-7790LD)
- Lockable cash drawer
- Minus, refund, void and no sale activity totalling in management reports

Other Functions

- Management reports
- Quantity entries using the decimal point
- Calculation of change due
- Calculator mode
- Training mode
- PLU stock handling (ECR7790-7790LD)

GENERAL CHARACTERISTICS

ECR 7190

Operator Display

- LCD
- Large digits
- 1-line, alphanumeric 10-position

Function selector

Sliding 6-positions selector

Programmable Keypad

- 7 keys for direct department access
- 20 function keys for setup and menu navigation
- 12-key numeric keypad

Cash Drawer

- Lockable metallic cash drawer
- removable coins' compartment
- 8 slots for coins, 3 slots for banknotes

ECR 7790

Operator Display

- VFD
- Large digits
- 1-line, alphanumeric 10-position

Function selector

Sliding 6-positions selector

Programmable Keypad

- 7 keys for direct department access
- 20 function keys for setup and menu navigation
- 12-key numeric keypad

Cash Drawer

- Lockable metallic cash drawer
- removable coins' compartment
- 8 slots for coins, 3 slots for banknotes

ECR 7790LD

Operator Display

- VFD
- Large digits
- 1-line, alphanumeric 10-position

Customer Display

- VFD pop-up
- Large digits
- 1-line alphanumeric, 10-position

Function selector

Sliding 6-positions selector

Programmable Keypad

- 7 keys for direct department access
- 20 function keys for setup and menu navigation
- 12-key numeric keypad

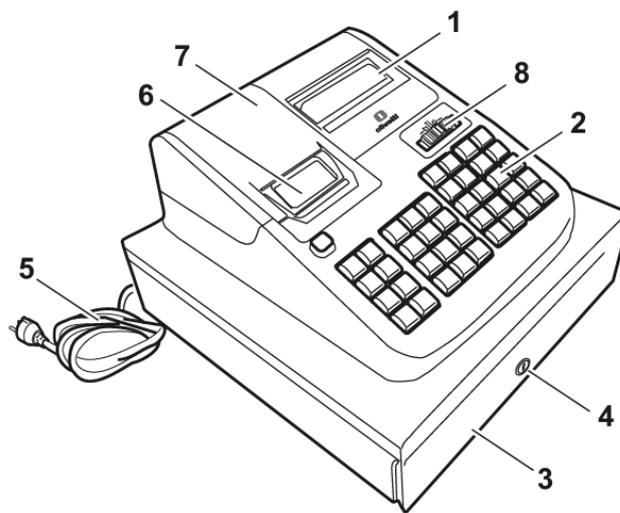
Cash Drawer

- Lockable metallic cash drawer
- removable coins' compartment
- 8 slots for coins, 4 slots for banknotes

EXTERNAL VIEW

ECR 7190 – 7790 – 7790LD

1. Operator display
2. Keypad
3. Cash drawer
4. Cash drawer lock
5. Power cord
6. Customer receipt output slot
7. Receipt printer cover
8. Operating mode selector



SAFETY PRECAUTIONS

The power socket for this cash register must be located near the machine and must be easily accessible. Do not use this cash register outdoors in the rain or near any liquids.

MAINTAINING THE CASH REGISTER

Provided below is information on how to maintain the cash register.

NOTE

Before cleaning the cash register, make sure it is powered off and/or unplugged from the wall outlet. Before unplugging the cash register from the wall outlet, make sure that three charged AA standard backup batteries are installed in the battery compartment. All data stored in memory will be cancelled if you unplug the cash register from the electrical wall outlet without back-up battery supply.

Keep all liquids away from the cash register so as to avoid spills which could damage the electronic components.

To clean the cash register firstly turn it off and/or unplug it from the wall outlet (be sure the back-up batteries are installed), then use just a damp cloth. Do not use corrosive substances such as solvents, alcohol, petrol, or abrasive components.

If the cash register is stored in extreme hot or cold temperatures (0 °C - 40 °C), allow the temperature inside the cash register to reach room temperature before turning it on.

DO NOT attempt to pull the paper roll when the cash register is printing.

CASH REGISTER UNPACKING AND SETUP

STANDARD ACCESSORIES

The cash register comes with the following items:

- One standard paper roll
- Three standard 'AN' size batteries for the battery back-up system
- The multilingual User's Guide, Reference Guide in English and Warranty Card + Setup Poster
- A set of keys for locking the cash drawer

Make sure that the cash register and all of the above items are included in the shipping carton. Open the cash register's shipping carton and carefully withdraw each component. Make sure that the cash register and all its accessories, listed in the section entitled Standard Accessories, are present in order to setup the cash register by following these guidelines:

1. Place the cash register on a level, stable, vibration-free and dust-free surface. Make sure it is near a power outlet compliant with the latest safety standards.
1. Plug the cash register into a power outlet compliant with the latest safety standards.
2. Insert memory backup batteries as explained in the section entitled Inserting/Replacing Batteries. Do not insert the batteries unless the cash register is plugged into an electrical power outlet.

WARNING

The machine must be plugged into an electrical outlet before you insert the batteries.

1. Load the thermal paper roll as explained in the section entitled Loading Thermal Paper.
2. Set the desired program options as explained in the section Cash Register Programming.

PRINTER COMPARTMENT

The printer compartment is on the top left-hand side of the cash register. It houses the thermal paper roll, journal winder spindle, back-up batteries and the thermal printer. This cash register uses standard 2 1/4" (57 mm) thermal paper.

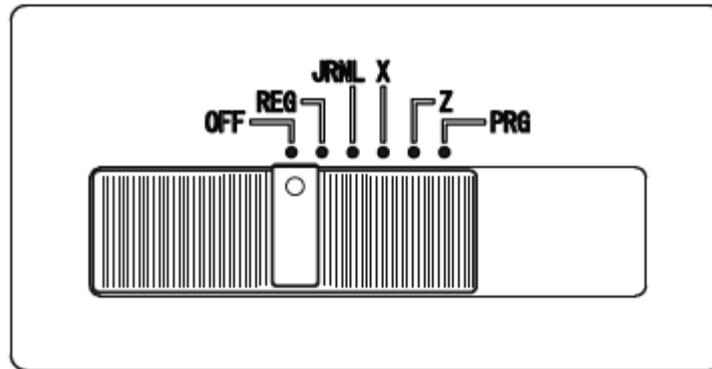
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CHAPTER 2 –PRELIMINARY OPERATIONS

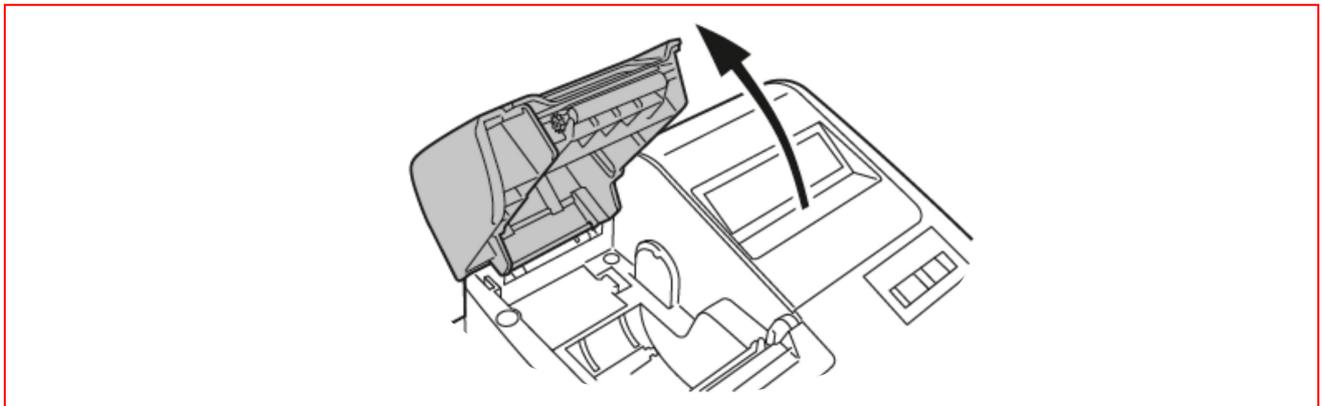
INSERTING THE BATTERIES

Before inserting the batteries, first make sure that the cash register connected to the electrical outlet, then follow the steps below.

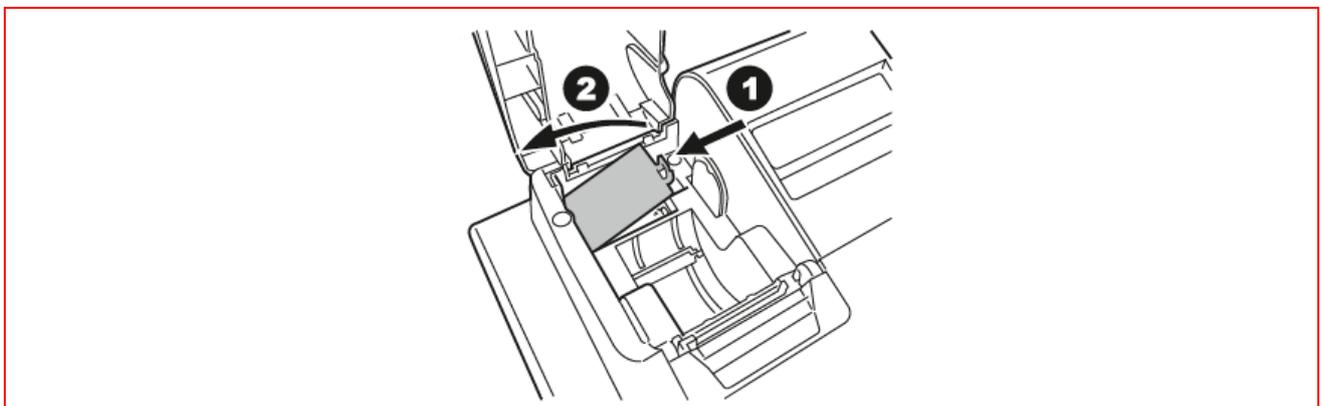
1. Set the Mode Selector to the **OFF** position.



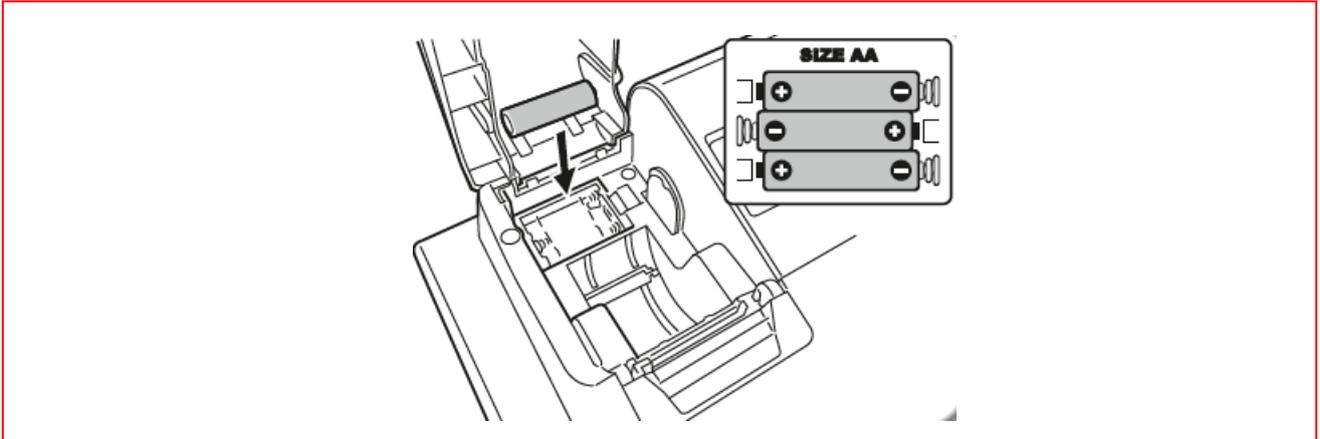
2. Open the receipt roll compartment.



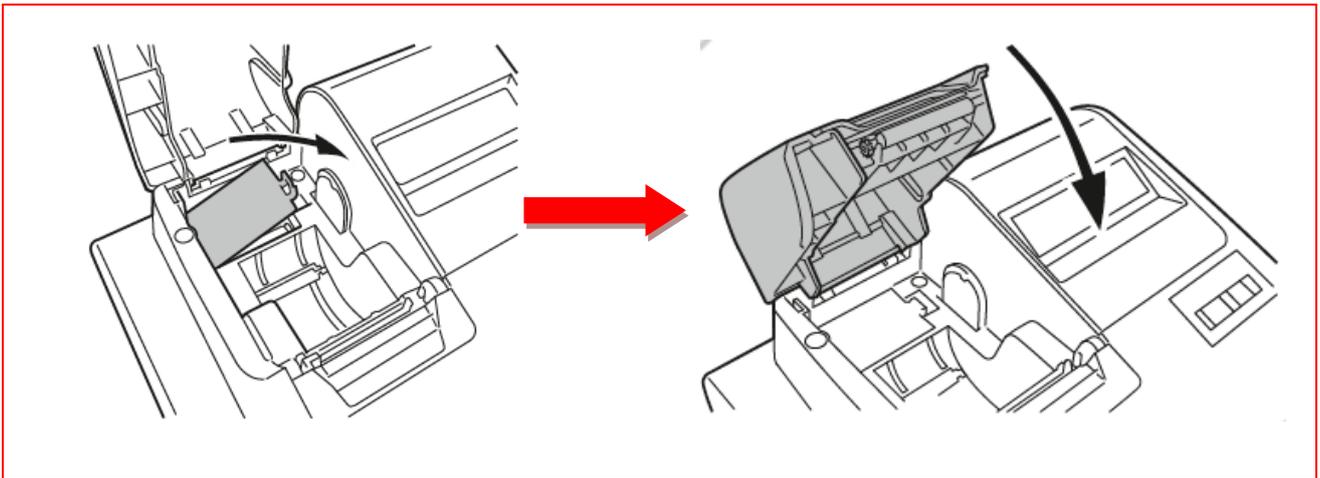
3. Open the cover of the battery bay



4. Insert the batteries with the correct polarity as shown below

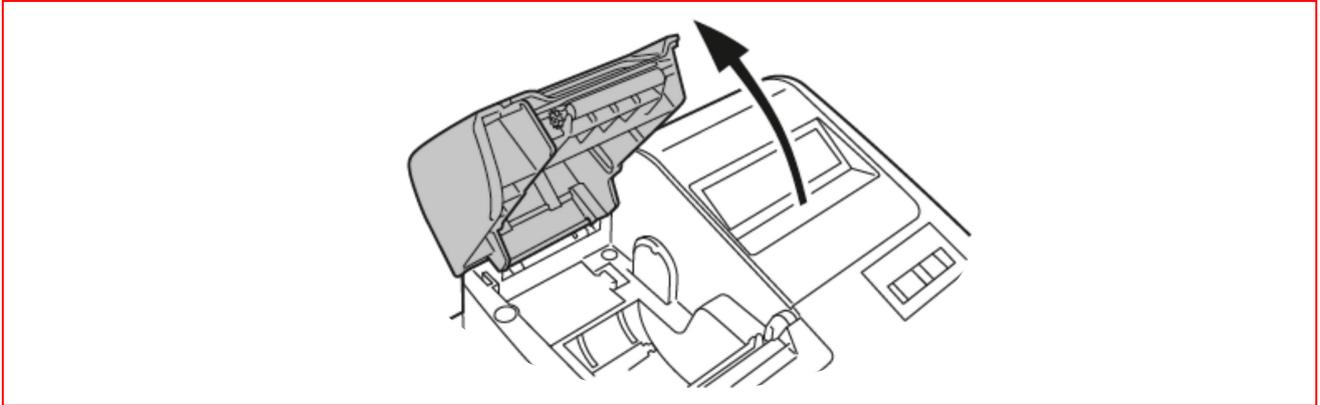


5. Close the cover of the battery bay and then the cover of the paper roll compartment

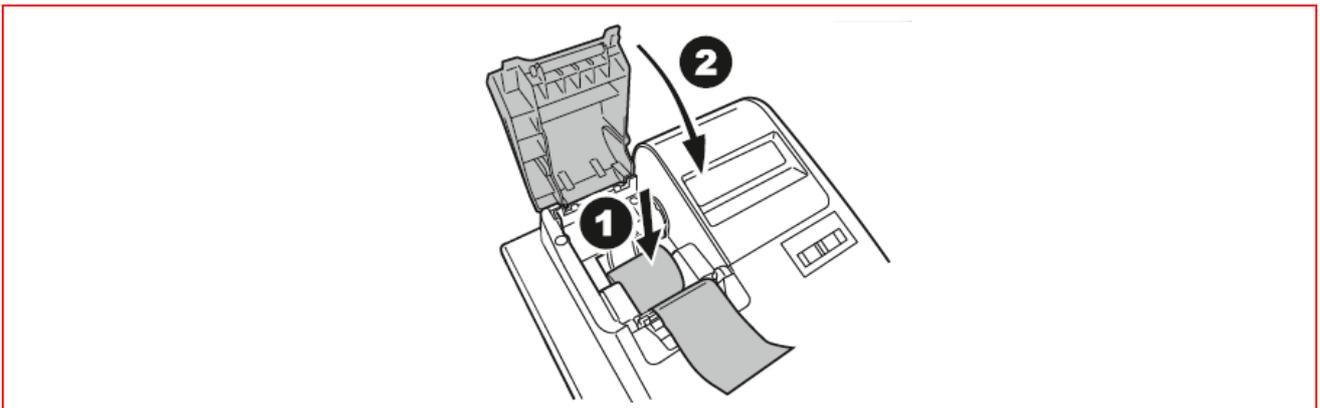


INSERTING RECEIPT ROLL

1. Open the cover of the paper roll compartment



2. Place the paper roll inside the compartment, unrolling it a few centimetres as shown in the figure (1), then close the cover again



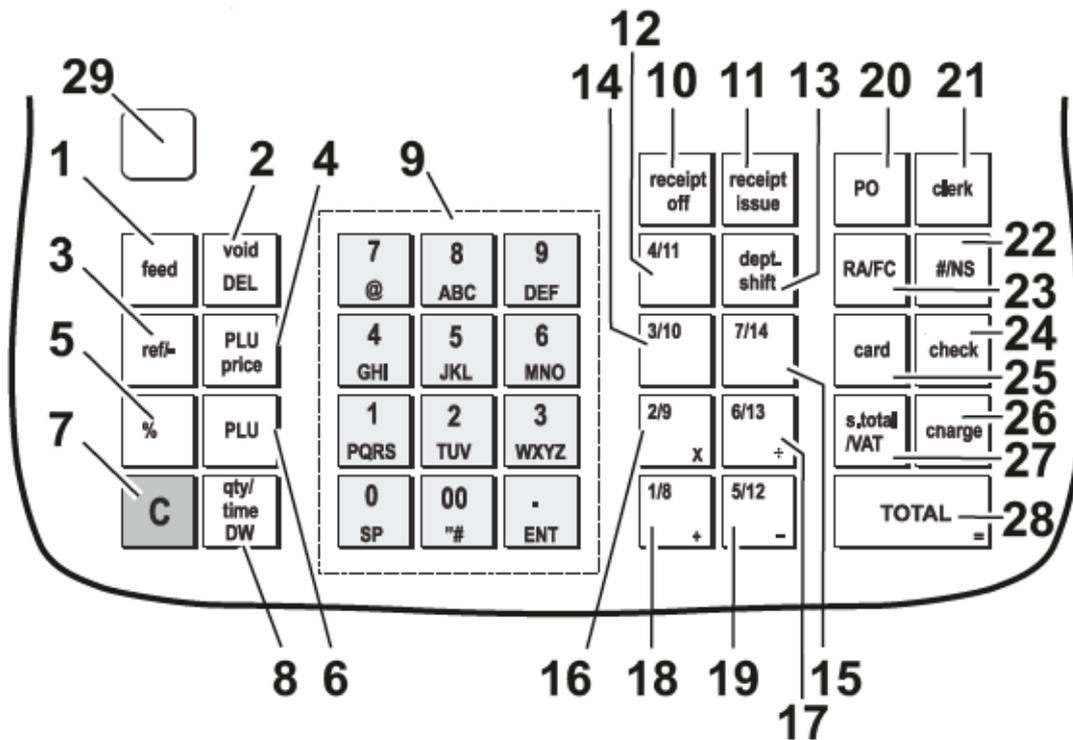
3. Using the manual cutter, cut away the excess paper by pulling the paper downwards as indicated in the figure.



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CHAPTER 3 – KEYPAD LAYOUT

ECR 7190 – 7790 – 7790LD LAYOUT



1. - Advances the receipt one line feed; advances the paper continuously when held down.



2. - **[Void]** Deletes the last item entered, and used for correcting a particular entry after it is processed and printed. During caption programming, cancels from right to left the characters that have been entered.
[DEL] Deleting character code entry like back-space of PC.



3. - When used as the coupon key, subtracts an amount from an item or the sales total, such as a coupon deduction. When used as the Refund key, subtracts an item that is returned for refund.



4. - Used to manually enter a price for a PLU article.



5. - Used to subtract a percentage rate from an individual item or an entire sale.
 The rate can be a pre-programmed percentage rate or any other manually entered percentage rate.

6.  - Registers a preset price of an individual item to the appropriate department.
7.  - Clears an entry made from the numeric keypad or with  before finalizing a transaction with a Department or function key. Also used to clear error conditions.
8.  - [**qty**] Multiplies  -  (Department),  or  [**time**] displays the current time in the REG and JRNL modes
[DW] Double width character selected.
 Double width need to inputting forward to the character.
9.  -  /  - Input amounts, indicate how many times a particular item repeats, add and subtract percentage rates and input department code numbers.
-  [.] Enters a decimal point for defining quantities with decimals during sales transactions.
[ENT] Programmed to the caption by entered character.
-  **[SP]** Space code entry using.
10.  - Toggles the cash register between printing and not printing the sales receipt.
11.  - Prints one or more copies of the last sales translation recorded (overrides the Receipt Off mode set with the related key).
12.  - Allows price entries for Departments 8-14. Press this key before entering applicable department keys.
13. 14. 15. 16. 17. 18. 19.
-  -  - Departments 1 through 7, to enter single or multiple item sales to a particular department. Department keys 1/8, 2/9, 5/12 and 6/13 also used in the calculator mode. When pressed after  registers to Departments 8 through 14.

20.  - Registers any money taken out of the cash drawer that is not part of a sale. It carries its own total on the financial report.
21.  - Assigns a Clerk. Confirms an entered clerk number and three-digit security code.
22.  - This key is used as a non-add key and prints up to a 7-digits numeric entry on the receipt. Opens the cash drawer without registering any amount or when changing cash for a non-sales transaction.
23.  - When used as the RA key, registers any money received on account that is not part of a sale; for example, the start-up money put in the drawer at the start of each business day can be registered as an RA. As the Currency Conversion key, it is used to automatically calculate and display the value in foreign currency of the subtotal of a sale or of a particular amount registered.
24.  - Registers sales paid by check and confirms last item inserted.
25.  - Registers sales that are put on credit, such as a debit card, or on a credit card that is alternative to the one used for Charge tenders.
26.  - Registers sales that are charged.
27.  -Subtotals a sale, and used for the programming of VAT rates.
28.  - Totals exact cash transactions, computes change and totals transactions that are split tendered with check or credit card and cash together. This key is also used to enter into the calculator mode. In the calculator mode, it is used as the "equal" (=) key.
29.  - Paper cover button.

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CHAPTER 4 – TROUBLESHOOTING

DIAGNOSTICS TEST

For the diagnostics test, carry out the steps indicated below:

	OPERATION	DISPLAY
1	Power on the cash register	
2	Position the selector on PRG	
3	Enter 960804 then press TOTAL	After a few seconds, displays the memory address
4	Position the selector on OFF and wait for 30 seconds	
5	Position the selector on PRG then press TOTAL	Displays “P-2”
6	Press the keys in sequence, starting from the topmost row, from left to right, omitting the FEED key	When the last key (TOTAL) is pressed, the display starts to display all the keys pressed in sequence, terminating with the last key
7	Press TOTAL	Displays “P-4”
8	Position the selector on OFF then move it sequentially through the other positions REG, JRNL, X, Z, PRG . When positioned on PRG , the cash drawer opens automatically	
9	Close the drawer and press TOTAL The cash register starts printing	Displays “P-8” then “0” when printing terminates
10	Press the FEED key to feed the paper forwards, then position the selector on OFF	

The following is an example of the type of output obtained from the diagnostic test.

```

*****
* Clover Electronics *
* ECR Test RePort *
* Olivetti ECR7700 New *
*****
software version. 0.91

RAM TEST ----- OK
KEYBOARD TEST ----- OK
VFD TEST ----- OK
MODE OFF ----- OK
MODE REG 1 ----- OK
MODE REG 2 ----- OK
MODE X ----- OK
MODE Z ----- OK
MODE PRG ----- OK
DRAWER TEST ----- OK

!"#$%&'()*+,-./01234567
89:;<=>?@ABCDEFGHIJKLMNO
PQRSTUVWXYZ[\]^_`abcdefg
hijklmnopqrstuvwxyz{|}~
AAAAAAAAAaaaaaBCCcDeEEEEE
EeeeeeeGgGiiiiiLlNnNooO
0000000000PSSssUuuUUuu
uuuuuuYZZz
`"iZS8I1111" j+k+l|&€€€

```

<<< RESET A >>>

CHECKING THE SOFTWARE VERSION

When the diagnostics test is run, the software version is displayed at the beginning.

You can also check the software version without running the diagnostics test as follows:

	OPERATION	DISPLAY
1	Position the selector on PRG	
2	Enter 960801 then press TOTAL	After a few seconds displays the software version.

CHAPTER 5 - PART DISASSEMBLY

Before attempting any operations on the product, follow precisely these instructions:

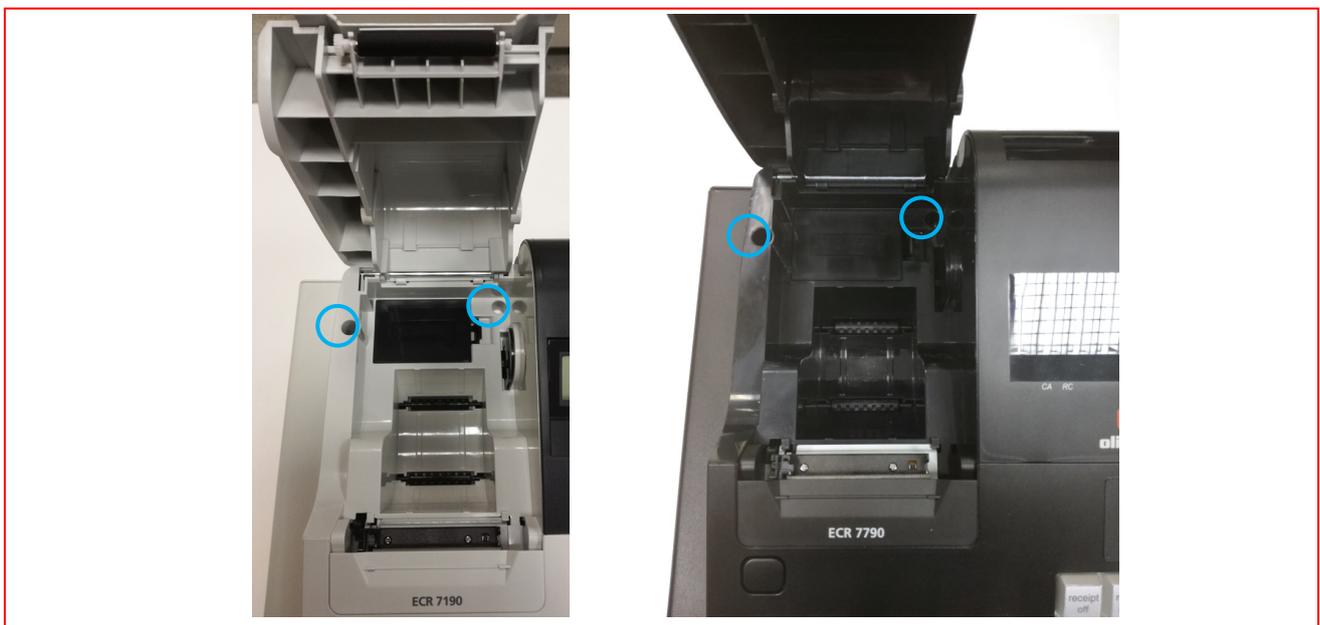
- Disconnect the power cord.
- Read and follow precisely the instructions below.

Any errors could cause damage to the system and render the warranty cover void.

Given the similarity of the products, when necessary in the operations illustrated below, the image on the left refers to the ECR 7190 (white) model, that on the right to ECR 7790-7790LD (black) models.

OPENING AND DISASSEMBLING THE CASH REGISTER

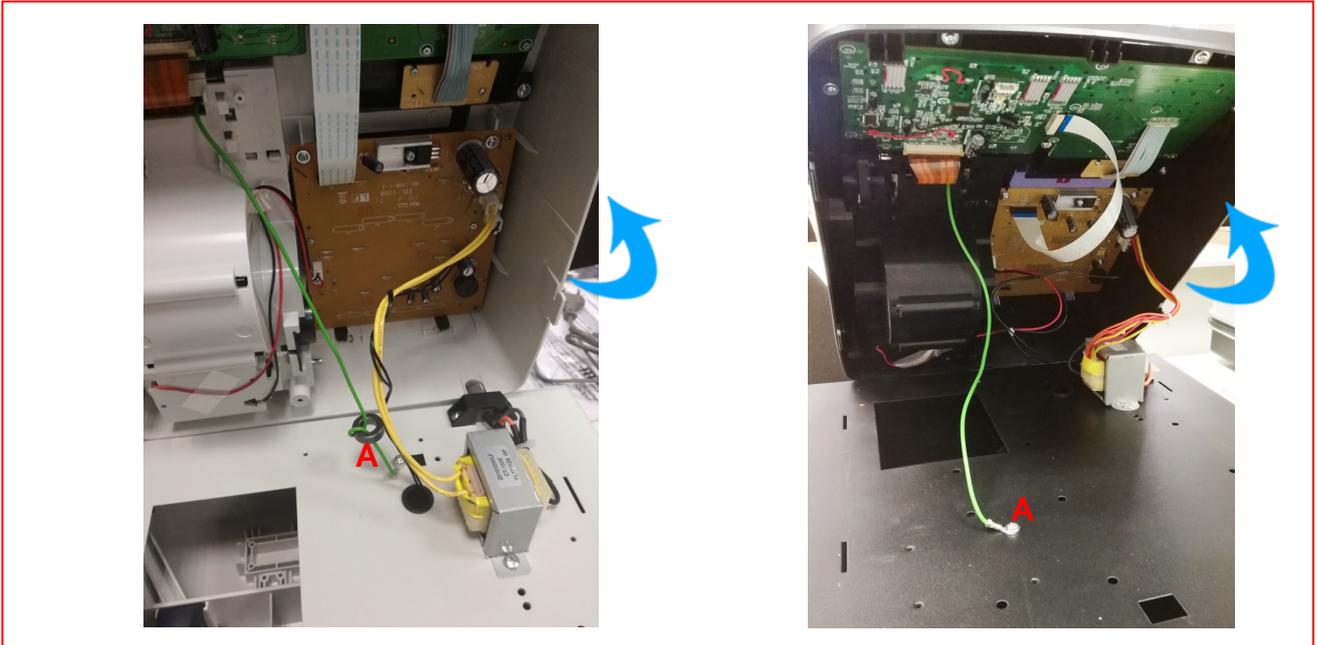
1. Unscrew the screws inside the paper roll compartment.



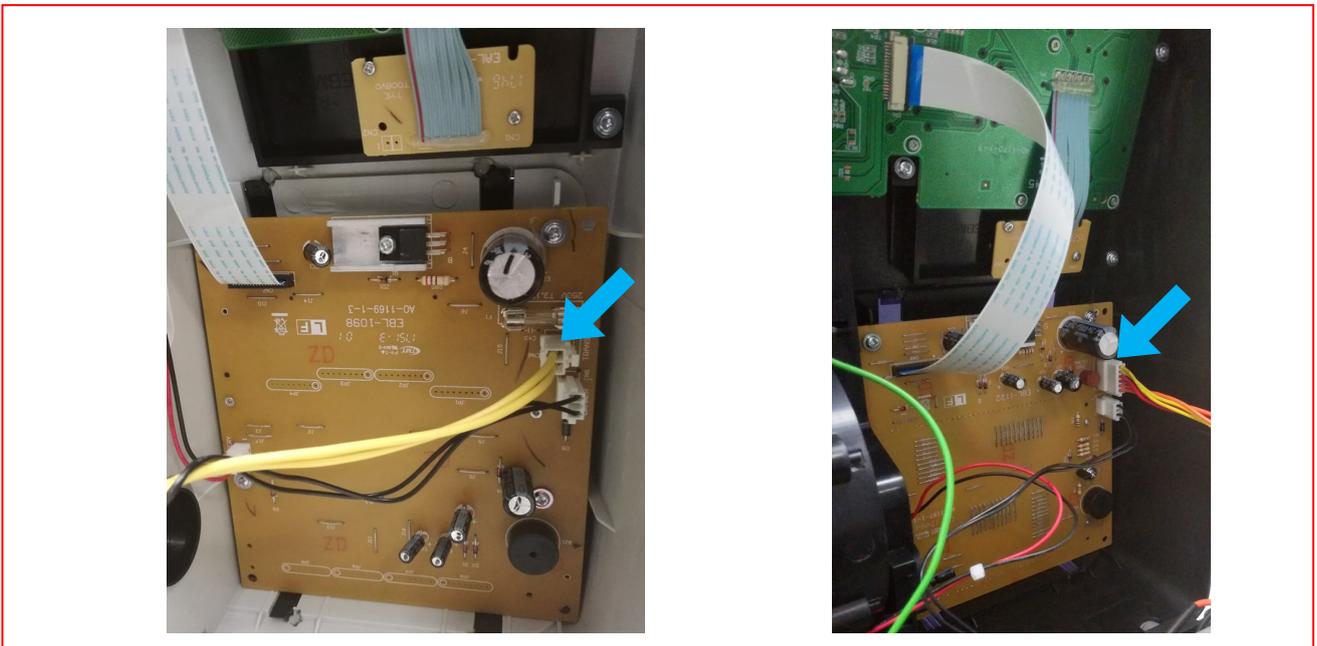
2. Push the machine body right to the end in the direction indicated by the arrow.



3. Lift the main body of the cash register to be able to access the internal components, then remove the screw fixing the earth wire (A).

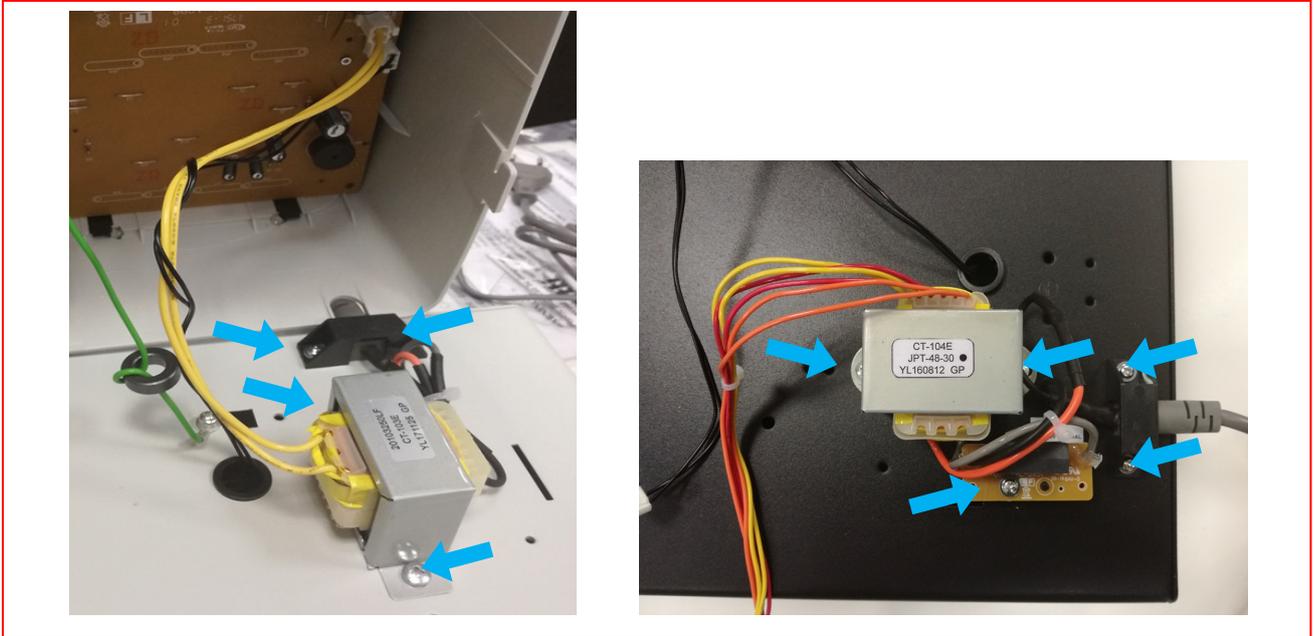


4. Disconnect the power connector.

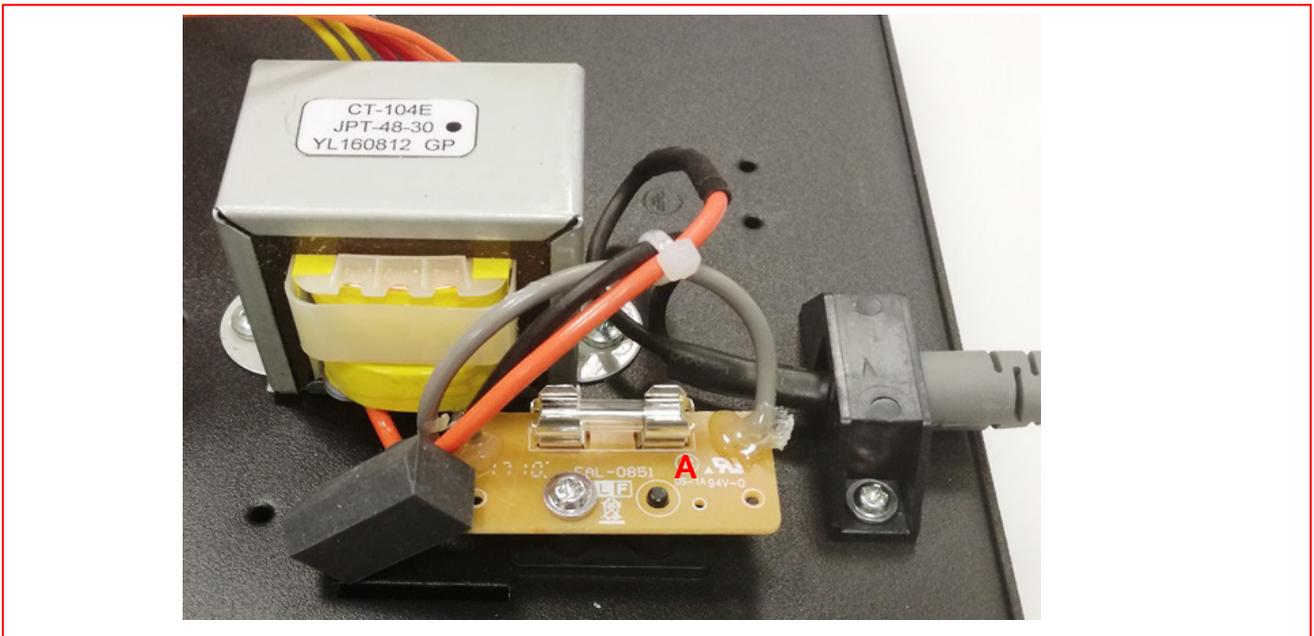


TRANSFORMER

1. After having disconnected the connector from the board, as previously shown, remove the screws indicated in the figure and then replace the transformer unit.

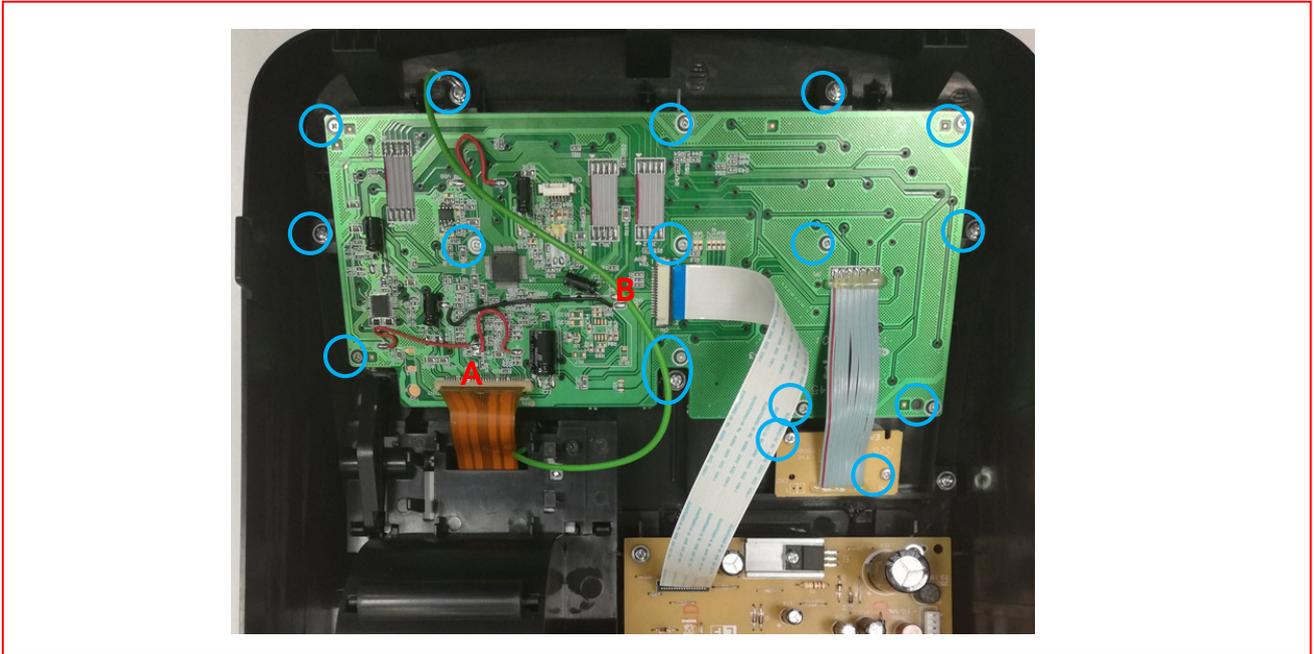


2. On ECR 7790-7790LD models, you can check the power fuse (A) and replace it when necessary.

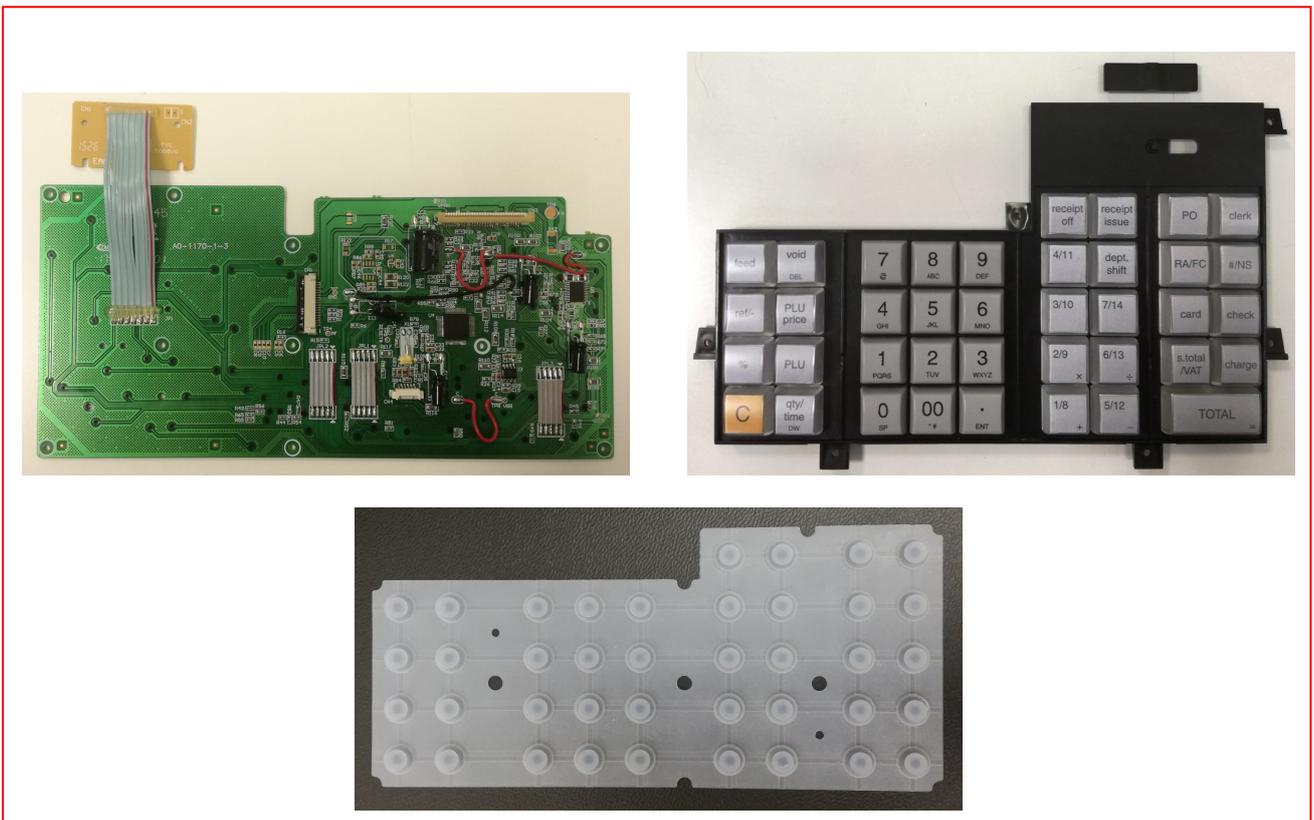


KEYPAD UNIT

1. Disconnect the printer connector (A) and the flat cable (B) of the display then remove all the screws indicated in the figure.

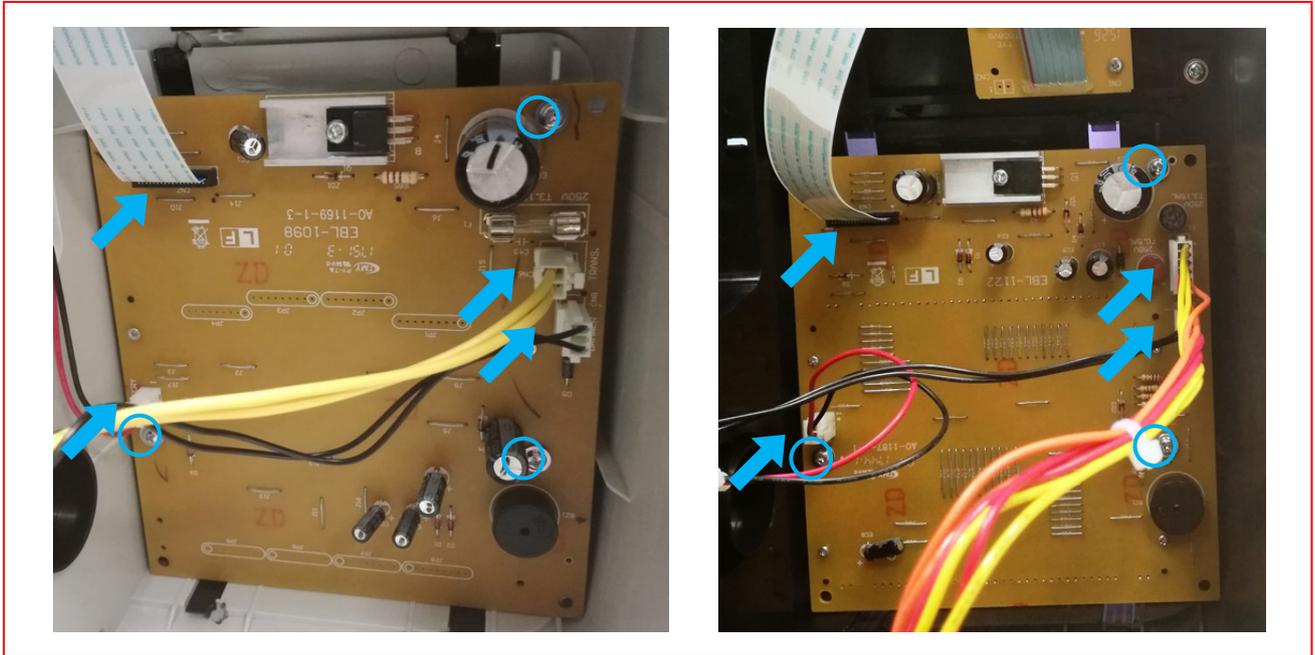


2. The following figure shows the single components constituting the keypad unit.



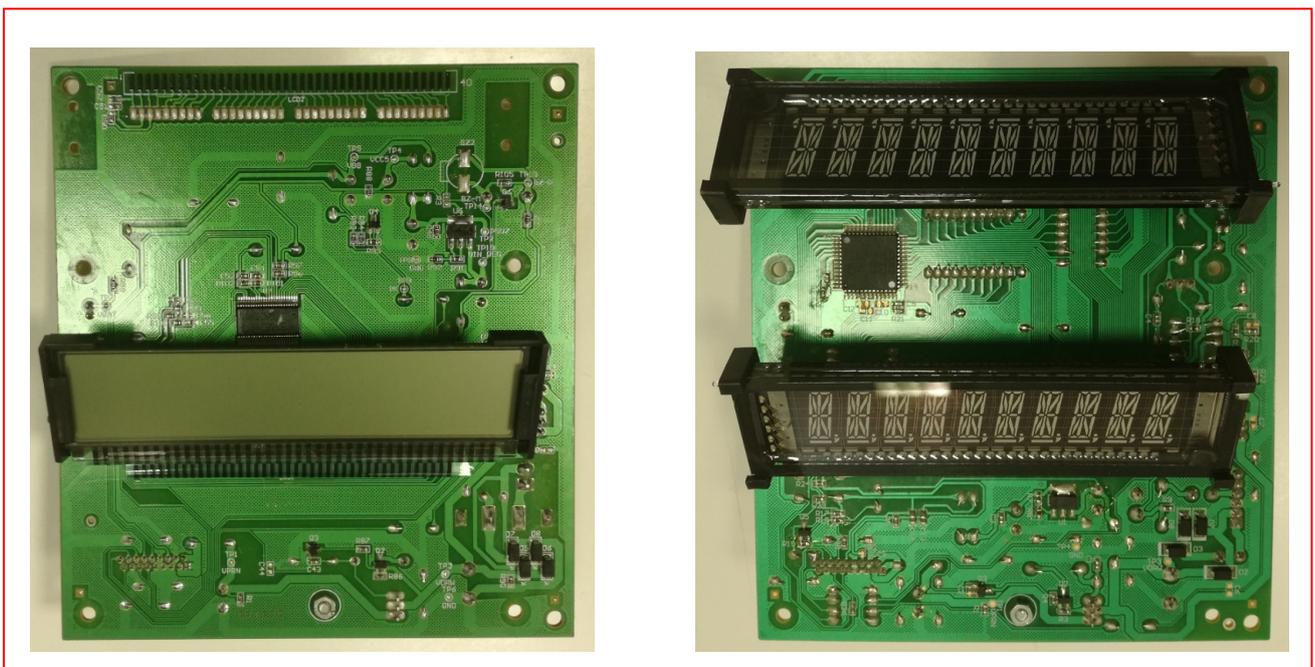
DISPLAY UNIT

1. Disconnect the connectors and the flat cable on the display board then remove the screws indicated in the figure.



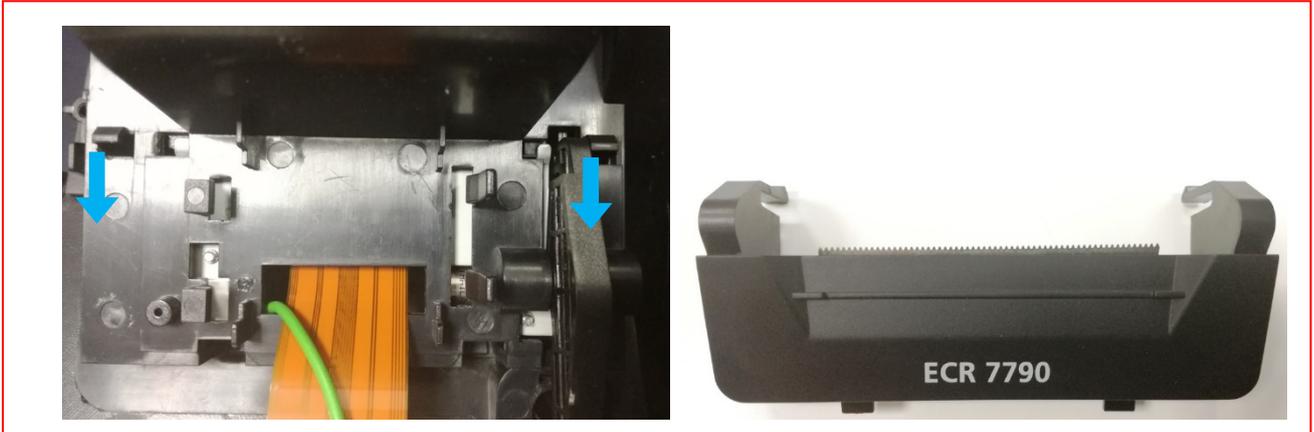
NOTE

The ECR 7190 board supports only a single display, while ECR 7790-7790LD models support two displays (as shown in the image).

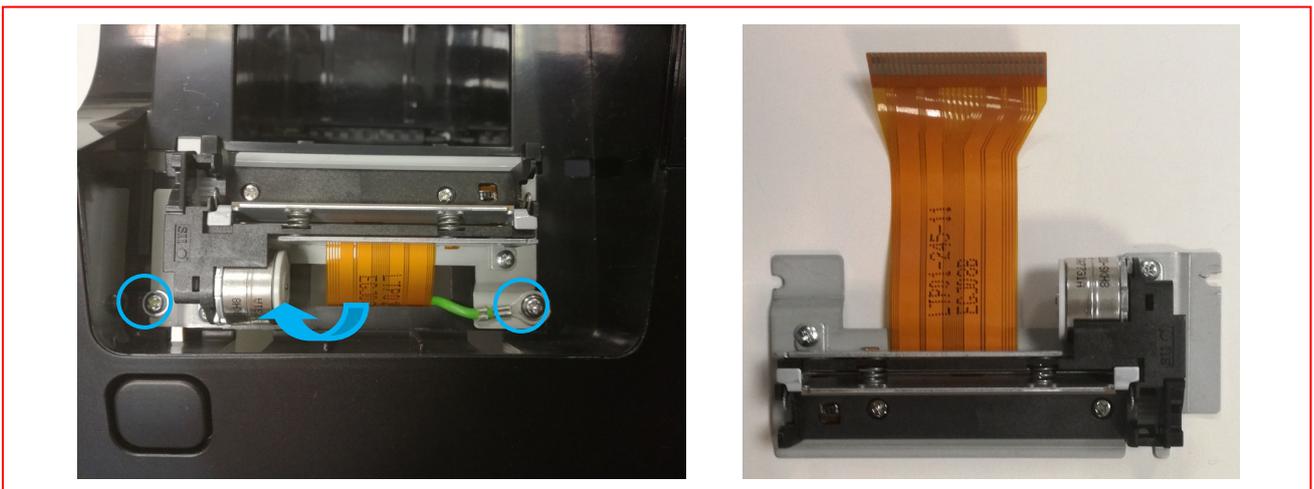


PRINTER UNIT

1. Before unmounting the printer unit first disconnect the flat cable as explained in Step 1 of the section “Keypad Unit”.
2. On the inside release the two retainers then push them so as to separate the cover and cutter from the main unit.



3. Unscrew the two fixing screws paying attention to the earth wire, then remove the flat cable from the slot and extract the printer unit.



4. If the paper feeder roller is worn, applying slight pressure on one side and then on the other, remove it from the housing and proceed to replace it.



