Aeterna Change-Giver
Coin Mechanism rel. 2.7

Maintenance and instructions manual

COGES ®

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Introduction

The main characteristic of the Aeterna Change-Giver is the possibility of giving back any excess credit present after the sale. This function comes from a system of coin selection and accumulation inside the tube group. The Change-Giver is prepared to support the following protocols: BDV, MDB, Executive and Parallel. The Aeterna Coin Mechanism is made almost entirely of plastic materials and it can be divided into four main units:

• Coin Mechanism Base board;
• Validator/Separator group;
• Tube group;
• Ejection group.

In the **Base Board** of the Coin Mechanism take place the main microprocessor, the eeprom containing the programming data and the reference model for the coins, the connectors for connecting to the peripherals of the payment system, the PC programming interface, the peripherals for data recording and for the Coin Validator.

The **Validator/Separator group** can accept up to 60 types of coins or tokens. The coins which result to be valid are addressed to a conveyor with different channels, each of them is addressed to the tubes or the cash. On the front panel of the Validator/Separator group is placed the programming **keypad** and the **display** of the Coin Mechanism.

The **Tube group** is the "store" of the Coin Mechanism where the coins which are used to deliver the change are accumulated.

The **Ejection group** consists of 3 motors and 5 cams of different shape; each of them pushes the coin towards the return channel during the delivery phase.

WARNING: to use your Aeterna Change-Giver Coin Mechanism correctly, it is essential to follow the instructions given in this manual. We strongly recommend that you read every part carefully before starting up the System, so as to prevent possible damage due to improper use.

Chapter **1**

1. Aeterna Change-Giver Coin Mechanism rel. 2.7

The Aeterna Change-Giver Coin Mechanism is available for the BDV, MDB and Standard Executive protocols. In this latter case it can manage the Parallel operation mode too (for electromechanical vending machines). All the versions are equipped with an infrared interface integrated in the Validator/Separator group for data recording.

All the functions of the Coin Mechanism are managed by the Base board, with only one connection point for programming and PC connection. To make the installation on the vending machines with limited space easier its dimensions and design were improved. The Coin Mechanism is proposed in two different versions: with lower cash-box or with side cash-box. It was realized according to the BDV mechanical specifications for the installation.

1.1. Composition
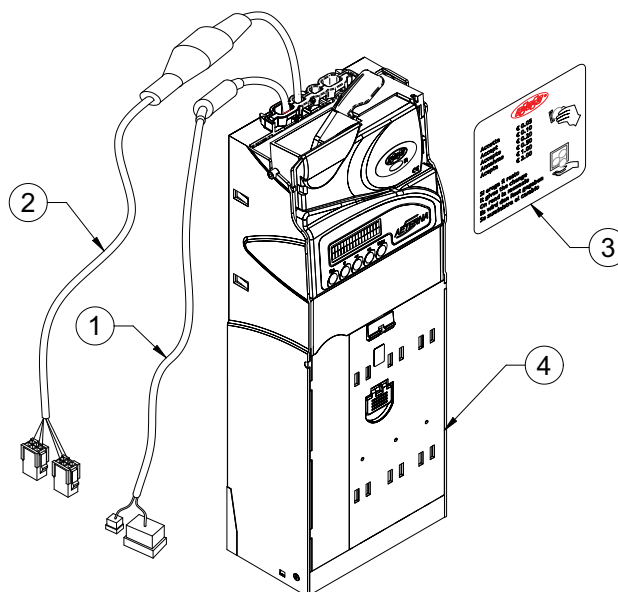
fig. 1

1 = Connecting harness for vending machine
2 = Harness for MDB peripherals
3 = Label for Coin mechanism configuration
4 = Aeterna Change Giver Coin Mechanism

1.2. Technical Specifications

1.2.1. Specifications of the Coin Mechanism
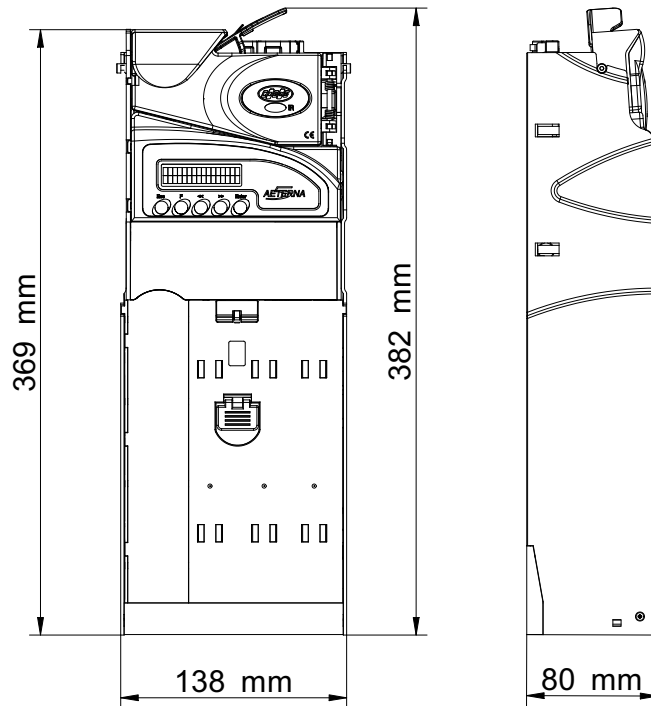
fig. 2

Dimensions (LxPxH) .... mm. 138 x 80 x 382
Weight .... 1,7 Kg.
Power supply.................................... 24V AC (Executive) 24V DC (MDB)
Max. absorbed power... 20 W
Absorbed power at rest ....4 W
Operating temperature .... 0°/+50°
Acceptance rate...2/3 coins per second
No. recognisable coins 60
Max. diameter of accepted coins............................... 32 mm
Max. diameter of coins addressed to tubes................................ 26 mm
Coin thickness .... from 1 up to 3,2 mm
Max. no. installable tubes 5
Tube height ....175 mm
Tube capacity...from 72 up to 97 coins
Construction material for mechanical parts ....Polycarbonate
Price lines:
E.C.S. serial Change-giver coin mechanism...................................... 50
E.C.S. serial C-G Coin M. with power interface and parallel VM 5
Protocols used .. BDV Master, MDB Slave level 2 and 3, Executive and Parallel
Directive.............................Electromagnetic compatibility 2004/108/EC

Attention: make sure that the connected power supply keeps at least 30 VA only for the Aeterna Change-Giver Coin Mechanism. Further details concerning the dimensions of the Coin Mechanism can be found in the drawing in Appendix

1.3. Parts description

1.3.1. Aeterna Change-Giver Coin Mechanism

With the Aeterna Executive, BDV Change-Giver Coin Mechanism, for electromechanical vending machines too, are supplied both a connecting harness to the vending machine and a harness for MDB peripherals.
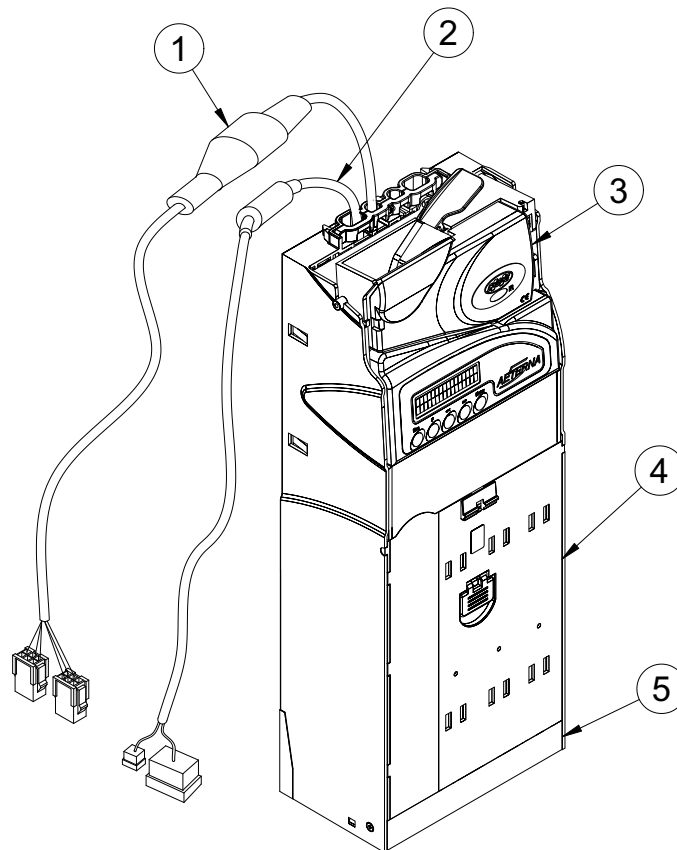
fig. 3

1 = Connecting harness to MDB perpherals
2 = Connecting harness to the vending machine
3 = Validator/Separator group
4 = Tube group
5 = Ejection group

Attention: the drawings of this manual have only an explanatory purpose and do not allow any intervention in the Coin Mechanism. On this matter the manufacturer is not responsible for possible malfunction due to maintenance or repair carried out by unskilled personnel.

1.3.2. Aeterna Coin Mechanism with side cash-box

It is a Coin Mechanism similar to the standard version as regards the technologies used and the operation modes of the different modules, but it differs because in this case the slide which conveys the coin to the cash-box ends on the Coin Mechanism's side. This permits to place the box for coin recovery at the Coin Mechanism's side, whereas it does not result possible to place the container in another position.
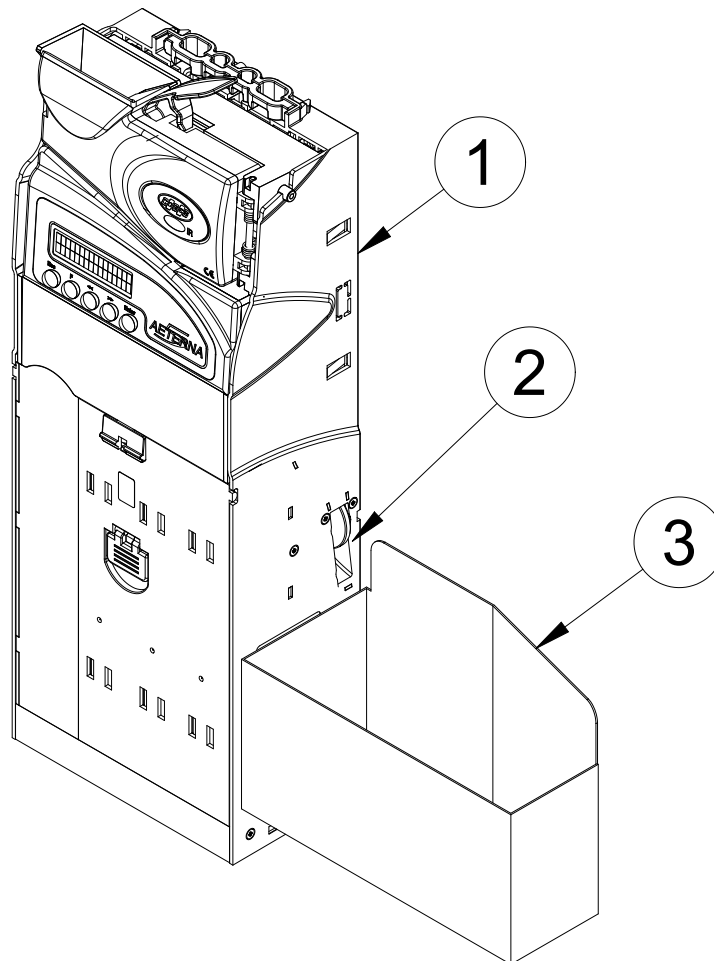
fig. 4

    1 = Aeterna Coin Mechanism with side cash-box
    2 = Slot for coin output with cash destination
    3 = Box for coin collection

1.3.3. Label for Coin Mechanism configuration

The Change Giver Coin Mechanism is supplied with a configuration label. It shall be sticked on the vending machine and has two functions: to give instructrions to the user about which coins the Change-giver can accept and to inform that it can give the change in case any excess credit is inserted.

1.3.4. Base board

In the Base Board there is the main firmware of the Change-giver Coin Mechanism with all the control functions on the sales and the credit management, the reference model for the coins and the management of all the mechanical and electronical functions of the Coin Mechanism.
The firmware update of the Base Board and the model are described in detail at the end of chapter 3 (see para. 3.4. "Firmware update").
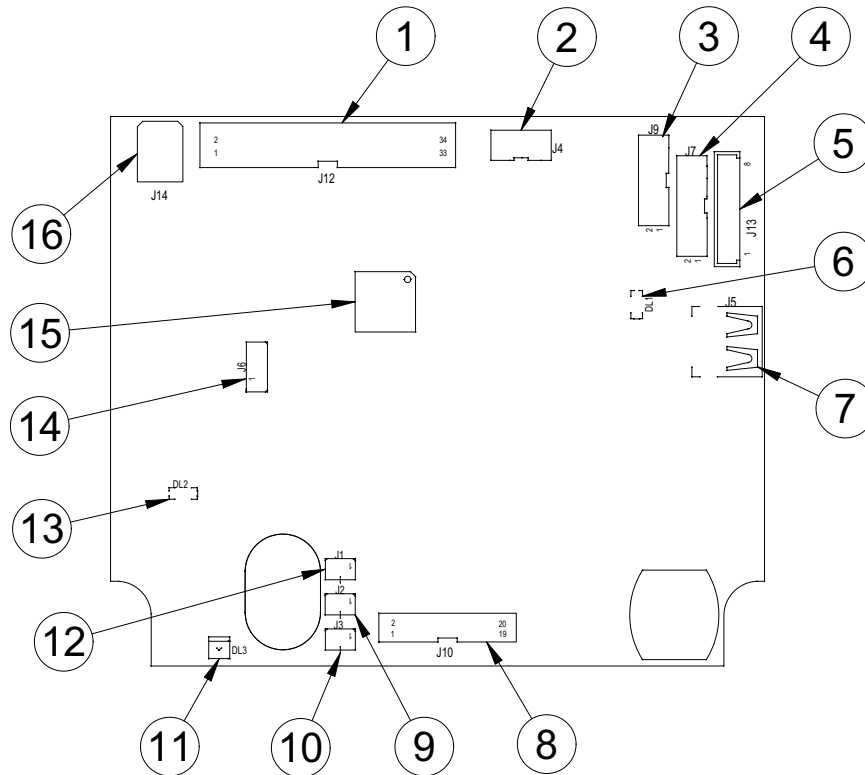
fig. 5

```
 1  =  Flat 34-ways connector for Coin Validator (J12)
 2  =  Minitek 2x5 ways connector for IR PORT Module, PC programming interface for systems/
        validators, harness for serial communication to PC and Comunica Module (J4)
 3  =  Minitek 2x8 ways connector for vending machine (J9)
 4  =  Minitek 2x9 ways connector for MDB peripherals (J7)
 5  =  Modu2 8-ways connector for electromechanic interface (J13)
 6  =  Yellow LED for flash programming (DL1)
 7  =  Connector for internal use (J5)
 8  =  Flat 20-ways connector for photocells, coin distribution motors and box presence (J10)
 9  =  Molex 2-ways connector for coin distribution motor for tube 2(J2)
10  =  Molex 2-ways connector for coin distribution motor for tube 3-4 (J3)
11  =  White LED for tube lighting (DL3)
12  =  Molex 2-ways connector for coin distribution motor for tubes 1-5 (J1)
13  =  Green LED for power supply (DL2)
14  =  Connector for internal use (J6)
15  =  Microprocessor (U8)
16  =  Connector for printer (J14)
```

1.3.5. Validator/Separator Group
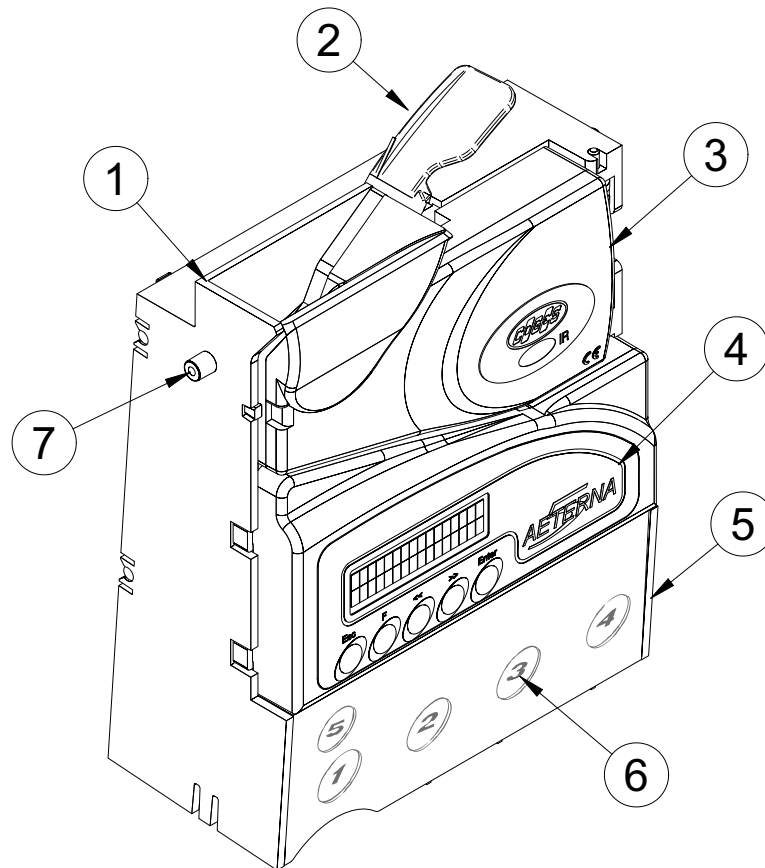
fig. 6

1 = Coin inlet
2 = Lever for coin recovery
3 = Mobile wall
4 = Keypad and display
5 = Conveyor
6 = Tube numbering of Coin Mechanism
7 = Fastening hook to the Coin Mechanism

The **Validator/Separator group** of the Aeterna Coin Mechanism is characterized by a considerable speed in coin recognition and their addressing. The new reading systems (optical and magnetic) permit a higher precision in the coin recognition and therefore a higher reliability in the false distinction.

The measures read at the coin passage are sent to the Base board of the Coin Mechanism to carry out the comparison with the model data. When the coin is recognized, that is when the parameters correspond with those programmed in the model, the Base board communicates to the Validator/Separator group the coin addressing to the cash, to one of the five tubes or if it should be rejected.

In the external side of the conveyor is placed the numbering of the tubes just as they are arranged inside the Coin Mechanism.

The firmware update of the Validator/Separator group is described in detail at the end of chapter 3 (see para. 3.4. "Firmware update").

1.3.5.1. Keypad and display

The keypad and the display of the Coin Mechanism are placed on the lower front side of the Validator/Separator group. By using the keypad it is possible to set the operation parameters of the Coin Mechanism and to make its use easier thanks to the display. The latter can give the operator important information about the operation modes used in the Change-giver at that moment: Coin mechanism condition, devices enabled, inhibited coins, user profile used during programming, etc.
All the symbols displayed are explained in detail both in the general operation description (see para. 1.5.2. "Operation conditions") and in the programming one. The use of the programming keys of the Coin Mechanism is fully described in the programming phases explained in chapter 3.

1.3.5.2. IR Label

The IR label, which is placed on the front of the Validator/Separator group, indicates the presence in the board of the infrared interface for transmitting the accounting data to a palmtop PC (see para. 3.3.1. "Aeterna Coin Mechanism").
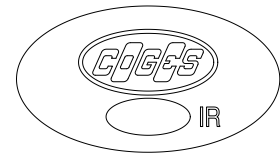
fig. 7

1.3.6. Tube Group

The **Tube group** of the Aeterna Coin Mechanism consists of a box with 5 accumulating coin tubes and of elastic forks which differ according to the thickness of the coins present in the tubes.
The Tube group, in transparent plastic, is lit from above by 2 white LED's which permit an immediate check of the tubes' content by the operator. The LEDs are lit up when the Coin Mechanism is switched on and the lighting is automatically switched off after a preset period of inactivity. The transparent plastic, furthermore, permits a more accurate reading of the tube filling level on the photocells' side and make the cleaning operations of the coin mechanism easier.

fig. 8

```
1  = Control holes for coin level
2  = Hooking for tube box
3  = Tube box
4  = Fork
5  = Push-button for box opening
6  = Opening handle
7  = Tube 1
8  = Tube 2
9  = Tube 3
10 = Tube 4
11 = Tube 5
12 = Reject channel
```
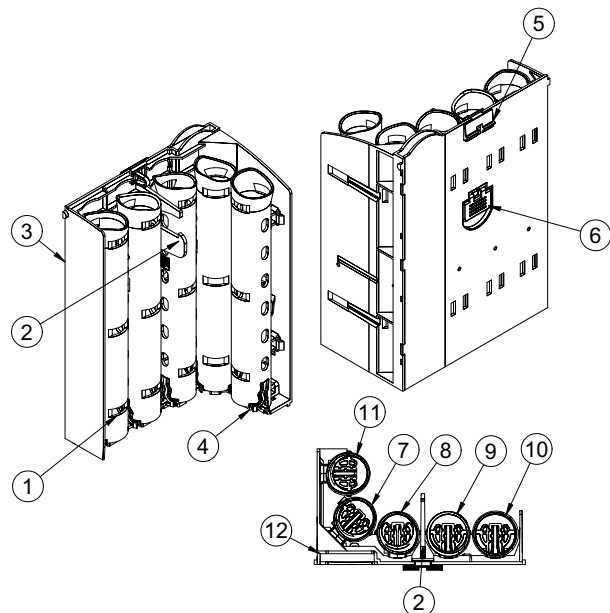
Caution: if you intend to modify the tube configuration with respect to the standard settings, it is necessary to pay great attention to the table present in chapter 2 (see para. 2.1.4.1. "Mechanical parts associated with the Euro coins").

1.3.6.1. Tube box

The tube box consists of 5 housings for the tubes, the seat for the elastic forks, the push-button and the handle for the box opening which are used in case the manual loading of the coins occurs (see para. 2.1.7.1. "Loading from the tube box"). The information concerning the configuration of the tube box are reported on chapter 2 at para. "2.1.4. Configuration of the tube box".

1.3.6.2. Accumulation tubes

The 5 tubes present in the Coin Mechanism have a particular capacity, which varies from 97 coins for the 0.05 Euro tube up to 72 coins for the 2.00 Euro tube. The tube configuration in the Coin Mechanism can be customized according to the operator's needs (see para. 2.1.4. "Configuration of the tube box").

The tongues, placed in the lower part of the tube, have the aim to avoid the spontaneous emission of the coin at the base of the stack, which can be caused by vibrations or inclinations of the tube box.
When the hook of the cam extracts the coin, the latter is forced to overcome the resistance of the tongues in order to exit. At the same time the following coin cannot be extracted because the presence of the elastic fork, which creates the thickness, prevents that this occurs.
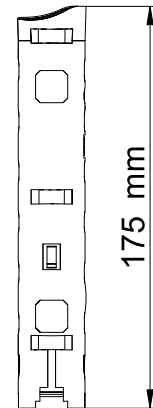
fig. 9

1.3.6.3. Elastic forks
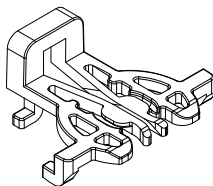
The elastic fork, which is placed in the lower side of the tube box, guarantees the coin distribution. The thickness of the fork is calibrated so that the extracting hook of the cam is correctly placed respect to the coin to be extracted (see para. 1.3.7. "Ejection Group").

fig. 10

1.3.7. Ejection Group

fig. 11

1 = Connector for lower sensor board
2 = Hook of cam position 5
3 = Hook of cam position 1
4 = Channel of coin reject
5 = Hook of cam position 2
6 = Hook of cam position 3
7 = Hook of cam position 4
8 = Base of Ejection group
9 = Ejection cover
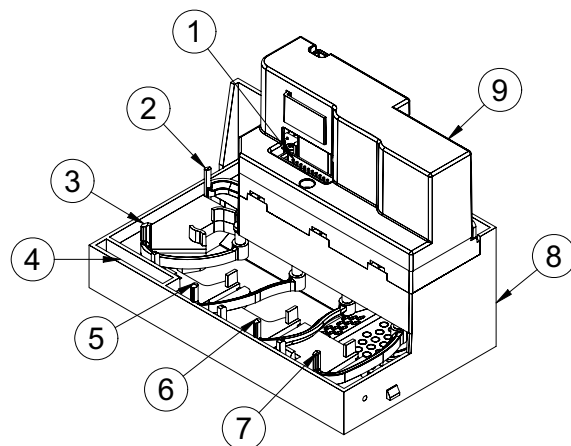
The **Ejection group** consists of 3 motors and 5 cams of different shape, each of them acting on the single tubes. When the ejection of a coin is requested, the corresponding cam shifts, the hook passes inside the elastic fork and pushes the coin towards the return channel.
In the ejection group there is the board for controlling the lower photocells which are used for

sensing the quantity of coins present inside the 5 tubes and the sensors for controlling the cam positions. The connector of the board for lower photocells (indicated in position 1) is connected by means of the special harness to the J10 connector of the Coin Mechanism Base board.

1.3.8. Technical data label

AETERNA EXE					1.01 CE
952000				V=24V AC - Pmax=30W	
EUR (0.05/0.10/0.20/0.50/0.05)					
V	O	C	V	O	C
EUR 0.01	0	1			
EUR 0.02	0	2			
EUR 0.05	1/5	3			
EUR 0.10	2	4			
EUR 0.20	3	5			
EUR 0.50	4	6			
EUR 1.00	C	7			
EUR 2.00	C	8			

During the testing phase on the side of the Coin Mechanism is placed a label with the data concerning the model programmed in the Coin Mechanism.

The label reports the following data:
• product name;
• product code;
• name of the programmed model;
• programmed values (V);
• output/addressing (O = OUT);
• programmed channels (C).

fig. 12

In the first column on the left are indicated the values of the coins programmed in the model; in the second column the addressing and the position of the tubes: **0** (zero) = Reject, **1-5** position inside the Tube group, **C** = Cash; in the third column the programming channel used for the coin storage in the model.

1.4. Accessories available on request

1.4.1. Interface for electromechanical Automatic Vending Machine
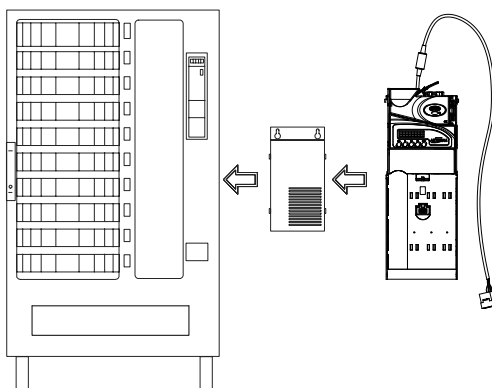
To apply the Aeterna Change-Giver Coin Mechanism to an Electromechanical automatic vending machine (24V/110V/230V) it is necessary to request any authorised Coges dealer for the suitable interface corresponding to the particular vending machine model.
Together with the interface is supplied the connecting harness.

fig. 13

1.4.2. MDB Cashless System

In the Executive and BDV versions it is possible to connect any cashless system with MDB protocol to the Aeterna Coin Mechanism.
In addition to the normal sale and credit charge operations the Key Reader permits to carry out the assisted loading of coins inside the tubes of the Coin Mechanism (this function is available only with MDB Coges cashless systems) by means of the recharge key (see para. 2.1.7.3. "Loading by using the assisted loading function").
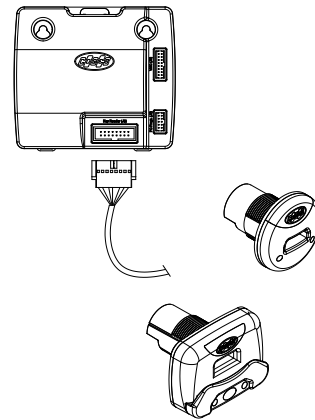
fig. 14

1.4.3. MDB Bill Validator
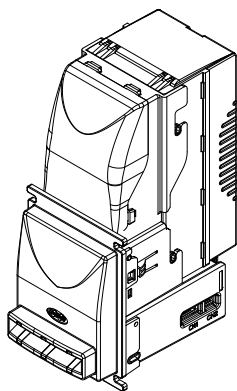
In the Executive and BDV versions it is possible to connect to the Aeterna Coin Mechanisms a MDB Bill Validator.

The quick instructions for starting the Bill validator are supplied with the product, while the user and maintenace manual is available on the website: www.coges.eu at page Technical support\ Download\ Technical manuals. Coges Bill validator is connected to Aeterna Coin Mechanism by using the **J7** connector of the Base board (see para. 1.3.4. "Base board").

fig. 15

1.4.4. Recharge Key

This function is available only with MDB Coges cashless systems. It is a normal User Key which is enabled to the fast recharge of the tubes of the Coin Mechanism without the need for entering the programming menu (see para. 2.2. "Connections"). The key shall be enabled to the function by entering the serial number in the proper menu item (see para. "11.19.2 Key Serial Number List") so that the system can recognize it. During the recharge operation on the display of the Coin Mechanism is shown the number of coins for filling the tube.
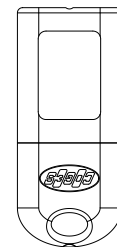
fig. 16

1.4.5. EXE-RS232 Interface for Systems and Change-giver
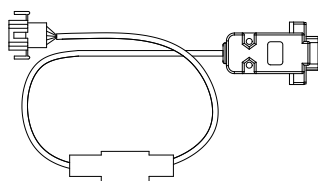
It is an interface which permits the connection of a cashless Executive system or an Executive Change-giver Coin Mechanism to a PC. With this serial connection and the use of some special .dll files concerning the Executive protocol commands (available on request), the PC can simulate the operation of a vending machine and thus can completely manage the payment system.

fig. 17

1.4.6. Accessories for programming and updating

In the Aeterna Coin Mechanism the parameter programming and the firmware update can be carried out by using the following devices:
- Maxi Programmer;
- PC programming interface for systems/validators.

1.4.6.1. Maxi Programmer

Maxi Programmer is an instrument for programming Coges' devices, both Coin Mechanisms and peripherals for coin and bill validation.
This instrument was designed in order to carry out the programming operations of the models and/or the update of Flash memory, in a controlled and rapid way, permitting thus a direct programming at the points of sale.
To carry out the firmware update it is necessary to ask any Coges authorized dealer for the "Harness for Maxi Programmer and TP606 ccTalk and PROFIT Validator" (see para. "3.4.2.2. Firmware update by Maxi Programmer" and para. "3.4.3.2. Model update by Maxi Programmer" at the end of chapter 3).
With the same harness it is possible to carry out the firmware update in the Base board (see para. "3.4.1.1. Firmware update of the Base board by Maxi Programmer" at the end of chapter 3).
For more detailed information on the programmer, refer to the quick instructions of the device.
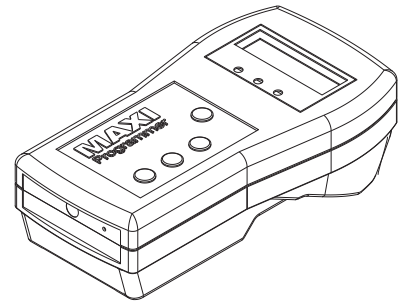
fig. 18

1.4.6.2. PC programming interface for systems/validators

The firmware update of the Base board of the Coin Mechanism is carried out directly by a PC with the FlashManager software and the "PC programming interface for systems/validators", which is available at any Coges authorized dealer. The interface is also used to update the firmware of the Validator/Separator group (see para. 3.4.2. "Firmware update of the Validator/Separator group") and of the model inside the Base board (see para. 3.4.3. "Update of the programmed model").
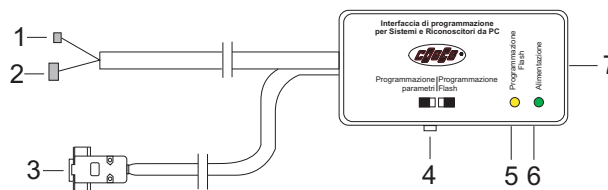
fig. 19

1 = Minitek 10-ways connector
2 = Modu 10-ways connector
3 = SUB-D 9-ways connector for PC connection
4 = Switch for Flash/Parameters programming
5 = Yellow LED for Flash programming
6 = Green LED for power supply
7 = PC programming interface for systems/validators

1.4.7. Accessories for data recording

In the Aeterna Change-giver the data recording can be carried out by means of the following devices:
• integrated IR interface;
• harness for serial communication to PC;
• IR PORT Module;
• Comunica Module;
• Printer for data recording.

1.4.7.1. Integrated IR interface

The Coin Mechanism is preset for recording the data directly from the infrared port by means of a portable or palmtop PC (see para. "3.3.1. Aeterna Coin Mechanism" at chapter 3). The port, which is placed on the front of the Coin Mechanism, is identified with the special label and the IR symbol (see para. 1.3.5.2. "IR Label").

1.4.7.2. Harness for serial communication to PC

It is a harness which permits the recording of the accounting data of the Coin Mechanism in EVA-DTS format by means of a serial connection. The same harness is also used for connecting the Comunica Module to the Base board of the Coin Mechanism. The harness can be requested any authorized Coges dealer.
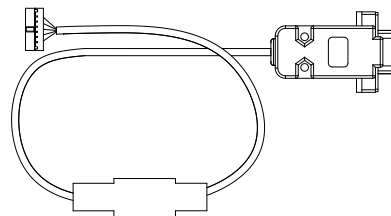
fig. 20

1.4.7.3. IR PORT Module
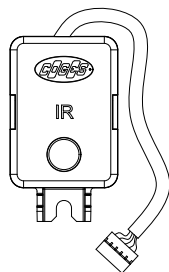
The IR PORT Module is a device equipped with an infrared interface which permits the data recording in EVA-DTS format (see para. "3.3.4. IR PORT Module" at the end of chapter 3).

fig. 21

1.4.7.4. Comunica Module

It is a device which permits the GPRS connection of the different sale points: vending machine, change-giver coin mechanism, cashless system. It is equipped with some ports for the communication with the peripherals, 3 signalling LEDs for the user and a base for removable SIM. The Module can draw the available data in EVA-DTS format or in other serial proprietary protocols and transfer them to a control centre in remote mode (see para. "3.3.3. Comunica Module" at the end of chapter 3).
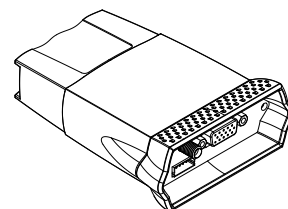
fig. 22

The information collected by means of the Comunica Module permits to improve the customer service as it supplies: always updated sale statistics, control of sales and recharges, quantity of products and cash in the vending machine and information about the events of the vending machine (alarms included). This implies a detailed knowledge of the sale sites, improving thus the management process and optimizing the technical assistance's and the charging operators' activities.

1.4.7.5. Harness for printer

The Base board of the Coin Mechanism is pre-arranged in order to connect a printer which permits the accounting data recording (see para. 1.3.4. "Base board"). The harness is available at any Coges authorized dealer.
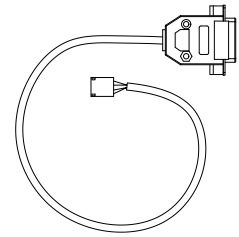
fig. 23

1.5. General Operation

The main feature of the Aeterna Change Giver Coin Mechanism is its ability to accumulate coins inside the tubes and to return to the user any excess credit present after a sale. The operation of coin accumulation and distribution occurs in three phases: recognition/separation, accumulation and ejection.

When a coin is inserted in the **Validator/Separator group**, it is analyzed and compared with the reference parameters present in the model. If the coin **is validated**, it enters the conveyor and then it is addressed to the tubes or the cash.

The Coin Mechanism uses 2 groups of photocells which are placed in the lower and in the upper part of each tube to check the level of the coins present at their inside and if necessary to make the corrections to the coin counters. The coin counters present in the tubes permit to execute the analysis and the calculation of the change composition.

When inside the tubes the maximum limit of coins is reached, the latters are automatically addressed to the **cash**. This occurs with the validated coins too, which are not configured inside the **Tube group**.

If the coin **is not valid** it passes directly from the Validator/Separator group to the **Reject Channel.**

All the operation phases of the Coin Mechanism and the programmed data concerning each operation are shown on the **display**, which is placed on the front of the Validator/Separator group.

The **Ejection group** starts to work when the microprocessor signals the presence of a residual credit after the sale operations. By means of the data set during programming the type of coin and the number of pieces to be distributed are defined. The motors powering the cams, which are placed at the base of each tube, permit to direct the coin to the return channel and then to the coin recovery tray, which is at user's disposal.

1.5.1. Coin reading

At switching on the Aeterna Coin Mechanism displays: the "Aeterna" inscription on the upper line and the number of coins present in each of the 5 tubes into square brackets on the lower line.

```
<Aeterna>
[15 25 18 40 36]
```

If the tube box results open, the display is this one:

```
<Aeterna>
■15 25 18 40 36■
```

When a coin is inserted in the Coin Mechanism on the upper line of the display is shown the "Aeterna" inscription while on the lower line are displayed the **currency** (ex. EUR) and the coin **value** (ex. 0.10), the storage **channel**, which is occupied by the coin just passed in the model (ex. C04) and the coin **destination** (ex. tube 2 = → 2).

```
<Aeterna>
EUR 0.10 C04  →2
```

If the destination tube is not available, if the value set in the "12.8-12.1 Maximum Limit" item is reached or if the coin destination is the cash, on the Coin Mechanism display is shown the symbol of the **cash** (⏚).

```
<Aeterna>
EUR 0.10 C04    ⏚
```

Furthermore there are some conditions where the programmed coins are given back to the user:
• when the machine where the Coin Mechanism is installed results to be out of order;
• when the value set in the "5.1 Maximum Cash Credit" item is reached;
• when the value set in the "5.2 Maximum Key Credit" item is reached.

In these cases on the display of the Aeterna Coin Mechanism is shown the symbol of the **rejected coin** (⍉) and the coin is given back to the user.

```
<Aeterna>
EUR 0.20 C05    ⍉
```

When in the Coin Mechanism is inserted a coin which is not recognized, on the display appears the message "Unknown Coin" and then the symbol of the rejected coin (⍉).

```
<Aeterna>
Unknown Coin    ⍉
```

1.5.2. Operation conditions

During the normal operation the Coin Mechanism displays the condition active at that moment, that is the operating mode, by using a symbol displayed on the left of the lower line.
In the following table are listed the symbols diplayed and their meaning.

SYMBOL	MEANING
	No peripheral is inhibited.
b	Inhibition of the bills acceptance.
c	Inhibition of the coins acceptance.
!	Inhibition of the coins and the bills acceptance.
i	Coin Mechanism in Exact Amount; peripherals are enabled.
B	Coin Mechanism in Exact Amount; inhibition of the bills acceptance.
C	Coin Mechanism in Exact Amount; inhibition of the coins acceptance.
¢	Coin Mechanism in Exact Amount; peripherals are inhibited.
iR	Coin Mechanism with the "EVADTS->IRDA" or "EVADTS -> IR PORT" option selected in the "10.3.1 Device" item (it excludes any operation with EasyCoinProfit).
•))	Recording/transmission in progress.
PC	Coin Mechanism with the "EVADTS -> PC" option selected in the "10.3.1 Device" item (it excludes any operation with EasyCoinProfit).
🖨	Coin Mechanism with the "Printer" option selected in the "10.3.1 Device" item.
🔒	Coins disabled.

The single items of the programming menu are described in chapter 3; while the summary diagram of all the programming items and the default data is available in the last pages of this manual.

Chapter 2

2. Installation and connections

2.1. Installation

⚠ *Caution: all the operations described in this chapter must be carried out after disconnecting the power supply cable.*

2.1.1. Position of the Coin Mechanism

To install the Aeterna Coin Mechanism it is necessary to find out the specific space in the vending machine.

2.1.2. Fastening holes of the Coin Mechanism

The fastening holes of the Coin Mechanism are placed according to the Europen standard, therefore no changes or additional drilling are necessary.

fig. 24

1 = Standard slots for installation
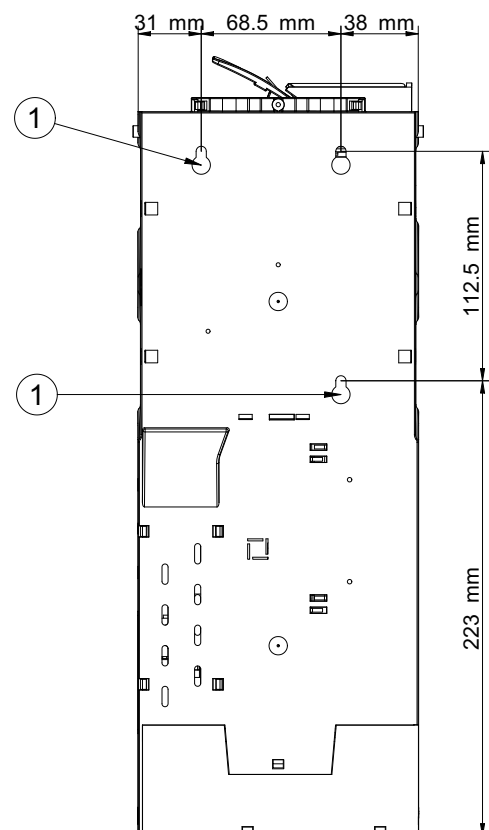
2.1.3. Installation modes

To carry out the installation of the Aeterna Coin Mechanism it is necessary to remove the Tube group by keeping it firmly by the handle and by lowering the lever which blocks it mechanically.

fig. 25

Release the Validator/Separator group from the Coin Mechanism base by acting on the fastening clips which are placed in the lower side of the Validator/ Separator group.
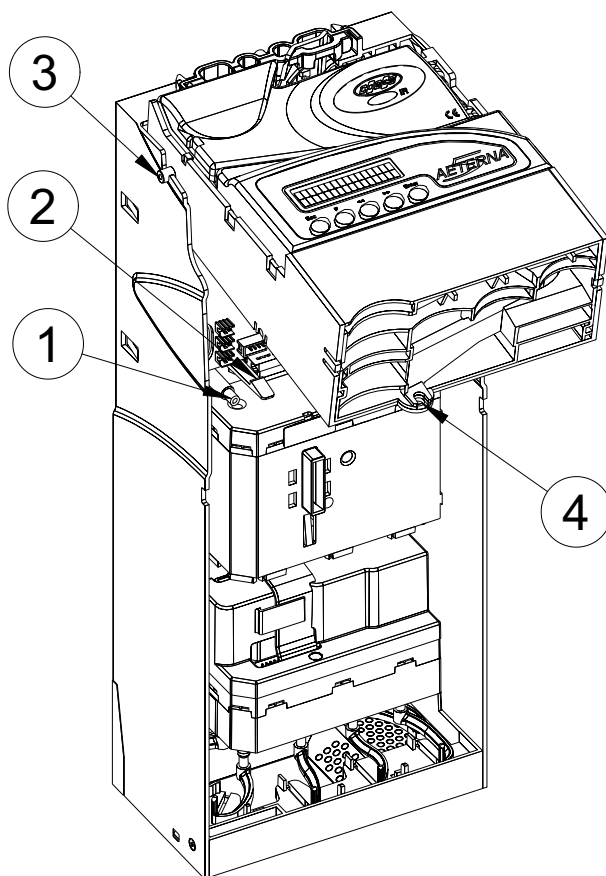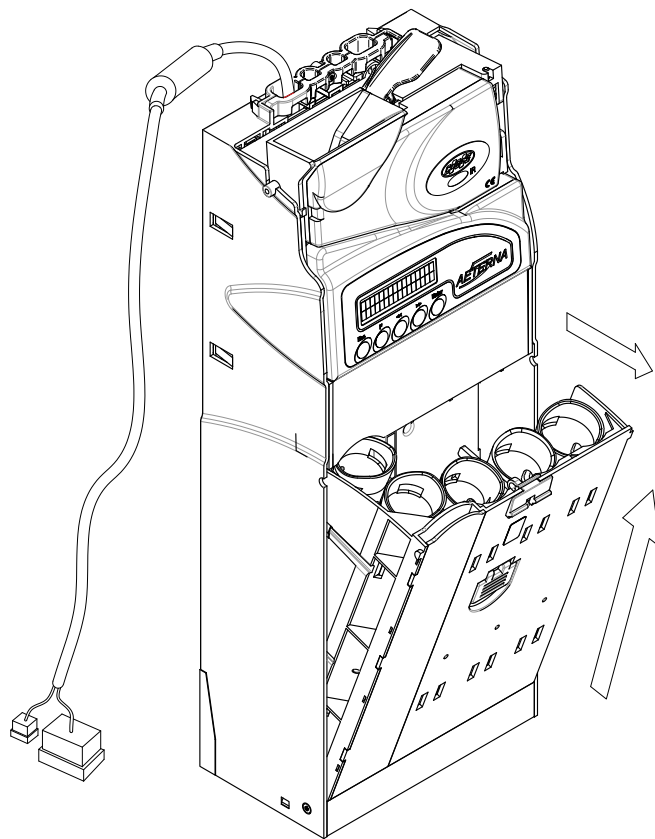
Lean two fingers against the clips placed on the Coin Mechanism base (fig. 26) and push downwards and slowly till the Validator/Separator group is released.

Turn the Validator/Separator group upwards (or remove it by disconnecting the harnesses beforehand), place the Coin Mechanism on the holes prepared inside the vending machine. Fasten the Coin Mechanism.

fig. 26

1= Cylindrical pin for Validator/Separa-tor group alignment
2= Fastening clip
3= Slots for pins of the Validator/ Separator
4= Alignment hole for the Validator/ Separator group alignment

Place the the Validator/Separator group by leaning it upwards in the proper slots. Make the alignment hole, placed in the lower part of the Validator/Separator group coincide with the

cylindrical pin which is placed on the Coin Mechanism base.
Press the Validator/Separator group towards the Coin Mechanism base till the hooking with the clips displayed on the drawing is carried out. Make sure that the clips are perfectly hooked to the Validator/Separator group before proceeding with the installation.
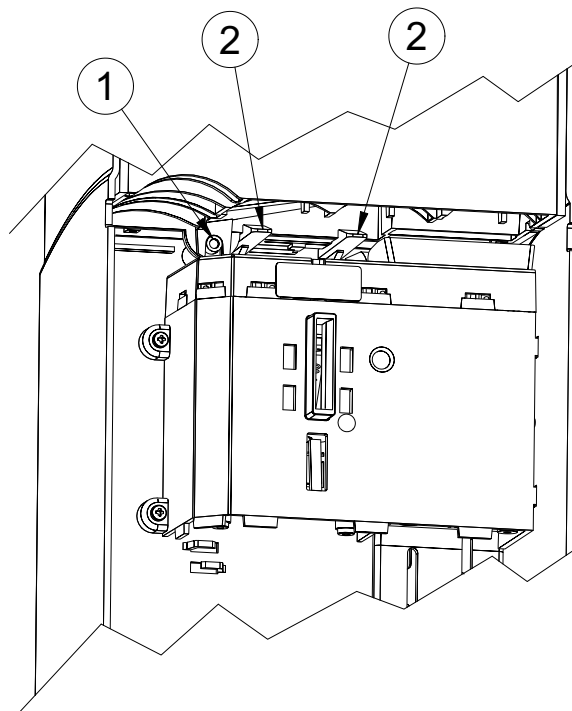
fig. 27

1 = Alignment hole for the Validator/Separator group
2 = Fastening clip

2.1.4. Configuration of the tube box

The Coin Mechanism is supplied at purchase with 5 tubes in a standard configuration, which can be changed afterwards according to the Operator's personal requirements.

Any other configuration of the tube box shall be included among those foreseen in COGES programming models which are present in the EasyCoinProfit software, as these configurations have been tested and validated by COGES. In case the configuration of the tube box chosen is not present in the foreseen programming models, it is necessary to check it with Coges Customer Service.

To do this it is necessary to carry out the following operations:
• remove the tube box by keeping its handle and by acting on the opening lever of the Coin Mechanism;
• **keep** all the tube box **firmly** with your hand in order to avoid that the weight of coins may make it fall;
• remove the tubes you intend to replace by acting on the fastening levers and configure the box (see para. 2.1.4.1. "Mechanical parts associated with the Euro coins");
• place the box of the Coin Mechanism in the correct position.
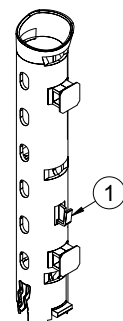
fig. 28

1 = Fastening lever

The change of the tube configuration implies the change of the coin **destination** (see para. "13.1-60.3 Destination") and in case that the number of coins destined to the tubes with respect to the one preset in the reference model shall be limited, it is necessary to change the **"12.8-12.1 Maximum Limit"** parameter too.

All the parameters concerning the coins are in the reference model stored in the Base board of the Coin Mechanism. Some of them can only be displayed, others, instead, can be changed as well.

2.1.4.1. Mechanical parts associated with the Euro coins

In the table here below are indicated the mechanical parts necessary for the different Euro coins, the number of coins necessary for dimming the lower and upper photocells and the maximum capacity of each tube.

Euro coins	Tubes	Forks	Low. Ph.	Upp. Ph.	Max. Limit
0.02	Tube Ø mm. 19.3	mm. 2.5 green	14	97	98
0.05	Tube Ø mm. 22.2	mm. 3.0 blue	14	97	98
0.10	Tube Ø mm. 20.5	mm. 2.5 green	12	83	84
0.20	Tube Ø mm. 24	mm. 2.5 green	11	74	75
0.50	Tube Ø mm. 25.5	mm. 2.5 red	10	66	67
1.00	Tube Ø mm. 25.5	mm. 2.5 green	10	69	70
2.00	Tube Ø mm. 26.8	mm. 2.5 green	10	72	73

As these components of the Coin Mechanism are continuously evolving, the data reported on the table could be subject to some changes. To get the updated data on the use of forks and on the mechanical parts when using extra Euro coins, it is necessary to address to Coges Customer Service. To get the complete list of the programmable models refer to the EasyCoinProfit software which is available on the website: www.coges.eu at page Technical Support\Download\Software.

2.1.5. Checks before starting

Note: the Coin Mechanism is supplied complete with connecting harness. Before starting, without power supply, make sure that the connections carried out comply with the protocol to be used. The correct references for the connections with the coin mechanism are reported in the "1.3.4. Base board" paragraph of chapter 1. For the protocol selection refer to the 6.1 menu item.

Before starting the Aeterna Coin Mechanism, check that:
• the return button of the vending machine, in rest position, does not touch the coin recovery lever of the Validator/Separator group, so as to avoid false signals and ensure correct operation;
• the coin inlet channel of the vending machine is aligned with the coin insertion slot of the Validator/Separator group;
• the coin outlet channels (cash or return) are correctly placed.

2.1.6. First loading

This operation is carried out when the tube box is completely emptied (see para. 4.1.3. "Cleaning the photocells and the tube box") or when a new coin mechanism is switched on and it is necessary in order to create the **best conditions for a good operation** of the device.
After inserting at least **5 coins** for each tube with the modes described at para. "2.1.7. Tube loading" it is necessary to **check** that the coins are correctly positioned and then it is possible to proceed with the operation of tube loading. The Coin Mechanism is programmed so that it never empties completely (see para. "13.1-60.11 Security Level").

If the first loading is carried out in an automatic way (ex. from the coin inlet channel) it can happen that the coins accumulated inside the tubes are not always 5. This because the Coin Mechanism accumulates inside the tubes the number of coins foreseen from the Security Level defined in the model, which changes from coin to coin (see para. "13.1-60.11 Security Level"). If, as a matter of fact, in the box configuration two tubes with the same value are foreseen, the Coin Mechanism will insert the minimum quantity of coins in the first tube, then in the second one and afterwards, if other coins with the same value will be inserted, it will continue to carry out the loading by starting from the first tube.

2.1.7. Tube loading

The tube loading of the Coin Mechanism can be carried out in different ways:
* directly in the tube box;
* by using the coin inlet channel;
* by using the assisted recharge function.

Thanks to the considerable capacity of the tubes and to the new functions studied in order to improve the change composition, the frequence of the loading operations is remarkably reduced.

2.1.7.1. Loading from the tube box

The loading of the tube box foresees 2 modes:
* tube filling with a variable number of coins;
* tube filling up to the maximum limit.

fig. 29
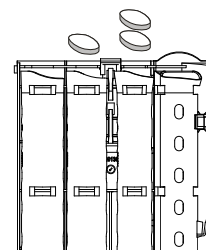
In the first mode a variable number of coins is inserted in the tubes and the quantity introduced in each tube is recorded in the "1.1 Set Quantity" menu item.

In the second mode the tubes are filled according to what is set in the "12.8-12.1 Maximum Limit" menu item. To update the counters to the quantity entered, it is necessary to use the automatic setting which is available in the "1.2 Preset Amount" menu item.

2.1.7.2. Loading from the coin inlet channel
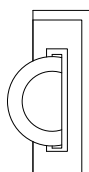
To carry out the tube loading from the coin inlet channel it is necessary to open the door of the vending machine, enter the the "1.3 Manual Recharge" item of the Coin Mechanism programming menu (or more simply by pressing at the same time the "**Esc + >>**" keys on the Coin Mechanism keypad) and proceed with the operation of coin insertion. The total cash inserted is added to the "3.1.2.4 Manual Charge" menu item and the counters corresponding to the tubes are automatically updated.

fig. 30

2.1.7.3. Loading by using the assisted loading function

It is a new system conceived and patented by Coges which permits the tube loading of the Coin Mechanism directly from the vending machine (this function is available only with Coges MDB cashless systems). In this case the operator just insert a recognition key in the cashless system connected to the Coin Mechanism and insert the coins in the vending machine till the tube is filled up, that is till the coin is returned in the reject channel. The operation is particularly quick and sure thanks to the remarkable recognition rate of the Coin Mechanism.
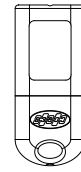
fig. 31

The settings described in the "11.19 Recharge Key" menu item of chapter 3 permit to define the loading mode with or without change.

2.1.7.4. Installing the interface for electromechanical vending machines
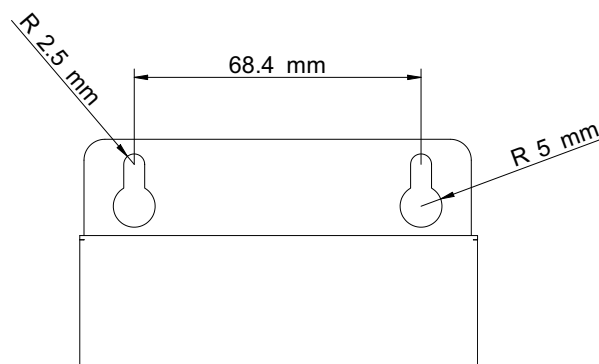
fig. 32

To install the interface for electromechanical vending machines (see para. 1.4.1. "Interface for electromechanical Automatic Vending Machine") it is enough to prepare 2 Ø 2,5 mm holes or two hooks according to the indications reported on the drawing. Connect the harness of the interface to the **J3** connector of the Base board of the Coin Mechanism.

2.2. Connections

The Aeterna Coin Mechanism is supplied complete with connecting harnesses. The harnesses and the devices supplied depend on the model of Coin Mechanism requested and on the type of protocol used; the optional ones are described in chapter 1 at para. "1.4. Accessories available on request". For any replacement it is possible to connect the harnesses in a correct way by reading the "1.3.4. Base board" paragraph of chapter 1, where in addition to the names of the connectors which are quoted on the silk-screen printing of the board too, there are the corresponding descriptions.

2.2.1. Executive, BDV Coin Mechanisms and electromechanical VM
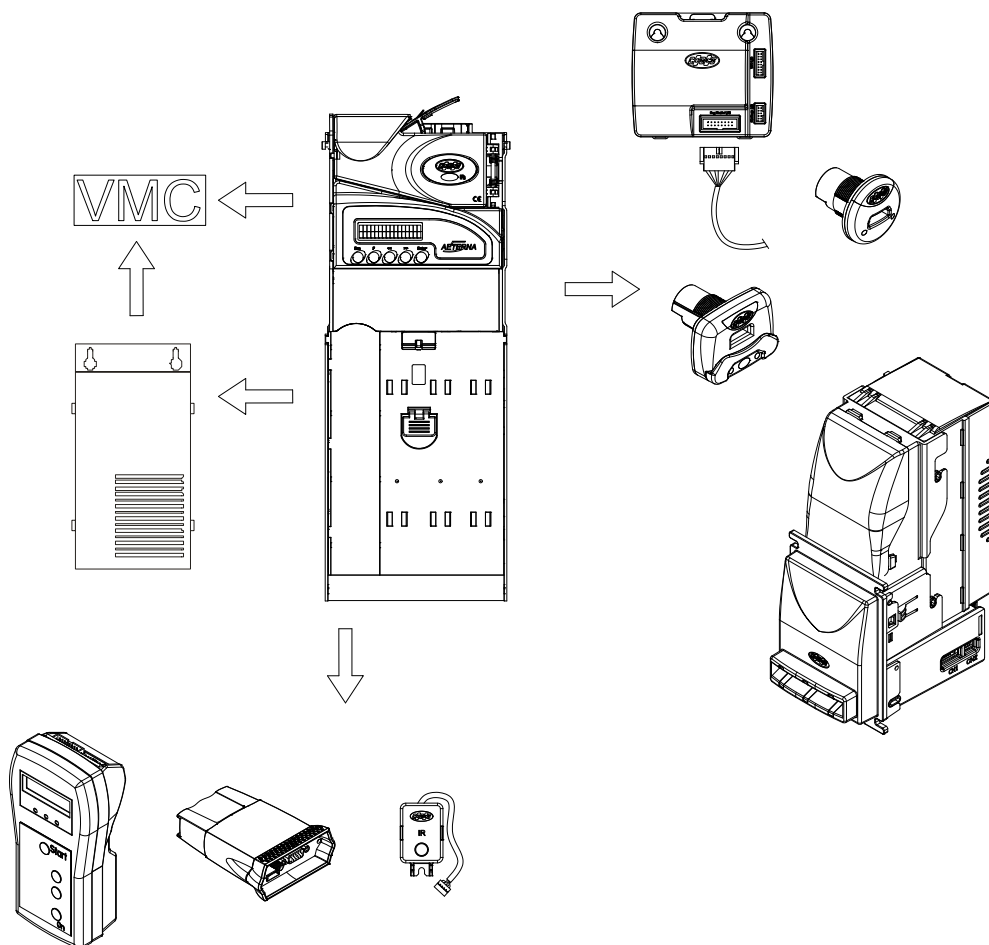
fig. 33

In the Aeterna Coin Mechanism with Executive, BDV protocol and electromechanical vending machines, the following connections can be carried out:

1 = Connection to the vending machine by means of the harness supplied;
2 = Connection to an electromechanical vending machine by means of the special optional interface;
3 = Connection to MDB peripherals (MDB Bill validators and MDB cashless System) by means of the special harness supplied;
4 = Connection to other devices: Maxi Programmer, Comunica Module and IR PORT Module.

The optional devices are described at chapter 1 (see para. 1.4. "Accessories available on request").

2.2.2. MDB Coin Mechanisms

The Aeterna Coin Mechanism with MDB protocol foresees the connections towards the vending machine and the Maxi Programmer. Any other peripheral used (ex. Bill Validator or Key Reader) in this case is connected directly to the vending machine, not to the Coin Mechanism.
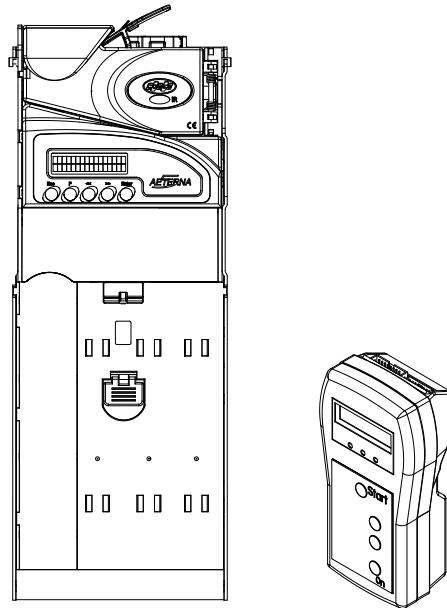
fig. 34

2.2.3. Warning

Attention: this equipment uses some batteries inside. Even when the equipment is switched off it is necessary to be careful of not causing short circuits, which can damage the batteries and the equipment itself. If the equipment has been left at rest for a long time the batteries can deteriorate.

Chapter 3

3. Programming

3.1. Programming the Coin Mechanism

The Coin Mechanism programming consists of two parts: one which can be programmed by means of the outside keypad and including all the parameters of the Coin Mechanism and the other, which is a model present in the Base board containing all the data concerning the reading of the coins accepted by the Validator/Separator group and all information of the tube configuration.
The model programming in the Coin Mechanism occurs by means of the PC or the Maxi Programmer (see para. 3.4.3. "Update of the programmed model"), the programming of the operation parameters is described in detail by some examples and display in the following pages.

3.1.1. Programming keypad

Programming of the operation parameters is carried out by means of the programming keypad, which is placed on the front side of the Coin Mechanism. It is equipped with 5 keys for the programming functions and a 16x2-characters backlit LCD display.
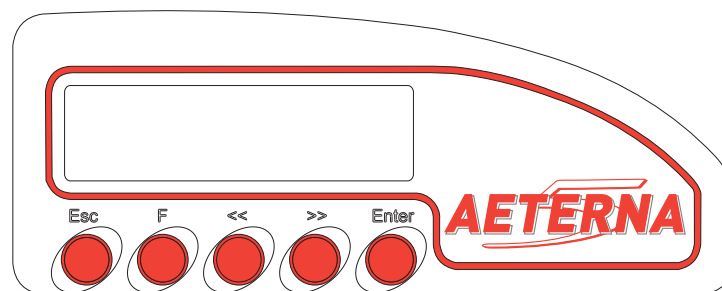
fig. 35

Esc = Passage to the menu upper level or exit from programming menu
F = Access key to programming
<< = Key to decrease data or backward for menu items
>> = Key to increase data or forward for menu items
Enter = Passage to the menu upper level or confirm of entered data
The combination of some keys makes possible the access to or the exit from some particular programming functions:
Esc + >> = Menu "1.3 Manual Recharge"
Esc + << = Menu "3.3 Partial Delete"
Enter + << = Menu "2.2.1 Manual Distribution"
Enter + >> = Menu "3.1.1 Total Takings"
Esc + Enter = Disable the IR communication if set in the menu item "10.3.1 Device" and permit to exit from the menu item "2.2.1 Manual Distribution".

3.1.2. Access to programming

By pressing the **F** key of the programming keypad, the programming menu is directly accessed. In case a programming access code was set, after pressing the **F** key it will be necessary to enter the corresponding PIN code.

```
╤ PIN
        [0***]
```
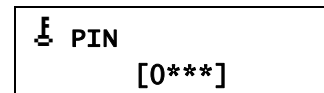
The Aeterna Coin Mechanism foresees **3 user profiles** identified on the display by a corresponding symbol: **operator** ($), **technician** (Ɪ) and **user** (■) (see para. "4 Security").

After entering the possible access password on the display is shown the current **menu item,** the **number** of the programming menu and on the left of the display the **symbol of the profile enabled** at that moment (ex. Operator profile= $).

```
Tube Counters
$            [ 1]
```

If the PIN is not set, there is no restriction to access the Coin Mechanism menus. In this case everybody who enters the programming mode can access all programming and control functions of the Aeterna Coin Mechanism.

✎ *The Aeterna Coin Mechanism is configured so that after 90 seconds of idleness inside the programming menu, it automatically quits the menu and the Coin Mechanism starts again.*

3.2. Programming by means of keypad

3.2.1. Programming Menu

✋ *The menu reported in these pages is the complete version, which refers to all the items forming the Aeterna Change Giver Coin Mechanism programming. To get the menus divided according to the protocol, it is necessary to refer to the legend reported here below or to the enclosures of this manual. In order to change the operation mode of the Coin Mechanism refer to the note indicated at the "6.1 Protocol" menu item.*

Legend of symbols displayed

($) Operator
(Ɪ) Technician
(■) User
X = Level 1 menu
X.X = Level 2 menu
X.X.X = Level 3 menu
X.X.X.X = Level 4 menu
X.X.X.X.X = Level 5 menu
✓ = Predefined menu option
≥ - ≤ = display flashes
🔓 = Open lock
🔒 = Closed lock
╤ = Password entering

✎ *The symbols listed here are those displayed in the programming phase. Other symbols which are displayed in the operating phase of the Coin Mechanism are described at chapter 1 (see para. 1.5.2. "Operation conditions").*

Legend of symbols used in the manual

✳ Menu item present also or only in the MDB protocol
✎ Programming description

✎ *The menu symbols placed at levels 1, 2 and 3 (X.X and X.X.X) refer to the whole menu underneath, those placed at a lower level, instead, refer only to the corresponding menu item.*

The programming menu consists of the following items:
- **1 Tube counters;**
- **2 Diagnostics;**
- **3 Totals;**
- **4 Security;**
- **5 Account Param.;**
- **6 Running mode;**
- **7 General;**
- **8 Price Setup;**
- **9 Bill Setup;**
- **10 Reading Setup;**
- **11 Key Setup;**
- **12 Tube Setup;**
- **13 Coin Setup;**
- **14 Default.**

1 Tube Counters [Operator ($), Technician (Ɪ), User (◼)] ✳

This menu item permits to change the coin quantity which is present in the tubes. In all the recharge functions the coins inserted are added to the "3.1.2.4 Manual Charge" total, with the counter reset of the coins in the tubes, instead, the accounting data are recorded in the "3.1.4.3 Manual Unload" total. The menu consists of the following items:
- 1.1 Set Quantity;
- 1.2 Preset Amount;
- 1.3 Manual Recharge;
- 1.4 Reset All.

1.1 Set Quantity
This menu item is used to change the number of coins present in each tube after manual loading is carried out directly in the tube box as described in chapter 2 (see para. 2.1.7.1. "Loading from the tube box"). The setting range is included between 0 and the value set in the "12.8-12.1 Maximum Limit" menu item.

```
Tube 1 Counter
[45 XX  XX XX XX]
```

✎ Change the number of coins present in the tube 1 by acting on the **<< >>** keys;
press the **Enter** key to confirm the data and pass to the following tube.

1.2 Preset Amount
The function permits to increase the coin counters to the value set in the "12.8-12.1 Maximum Limit" menu item. This operation is carried out after the manual loading (up to the maximum limit) which is carried out by an operator directly in the tube box of the Coin Mechanism.

✍ *In order to avoid errors in the coins counting inside the tubes and in the quantity of coins set in programming, we suggest to load the tubes by means of the "1.3 Manual Recharge" function.*

```
Preset Amount
[65 57  52 52 55]
```

✎ Press the **Enter** key to see the value currently present in the counters;
press the **Enter** key again to get the tube counters to the value set in the "12.8-12.1 Maximum Limit" menu item.

1.3 Manual Recharge
It foresees the coin loading into the tubes by using the coin automatic counting on the Validator/Separator group side. On the display is shown the number of coins counted for each tube. In all the loading functions the coins introduced are added to the "3.1.2.4 Manual Charge" menu item.

1.4 Reset All
It permits the simultaneous coin counters reset in the tubes.

```
Reset All              Reset All
[65 57 52 52 55]       [00 00 00 00 00]
```

✎ Press the **Enter** key to see the value currently present in the counters;
press the **Enter** key to apply the reset function.

2 Diagnostics [Operator ($), Technician (⌇), User (▪)]

This menu item permits to perform some tests to check the correct operation of the Coin Mechanism. Inside this menu there are the following items:
- 2.1 Firmware Rel.;
- 2.2 Tube Unit;
- 2.3 Coin Validator;
- 2.4 Key Parameter.

2.1 Firmware Release ✳
This menu item permits to display: the firmware code (**f** = firmware) and the release of the base board (**r** = release), the issue date of the firmware (**d** = date) and the checksum (**c** = checksum).

```
fXXXX-XXX rX.XX
dDD-MM-YY cXXXX
```

2.2 Tube Unit ✳
The diagnostics of the tubes group foresees the possibility of performing some tests concerning the coin distribution. All the amounts distributed by the Coin Mechanism after some operations of manual unload of the tubes are added to the "3.1.4.3 Manual Unload" menu item.
- 2.2.1 Manual Distrib.;
- 2.2.2 Sequential Dis;
- 2.2.3 Empty Tube 1;
- 2.2.4 Empty Tube 2;
- 2.2.5 Empty Tube 3;
- 2.2.6 Empty Tube 4;
- 2.2.7 Empty Tube 5;
- 2.2.8 Empty Tubes;
- 2.2.9 Tube Photocells;

- 2.2.10 Upper Photocells;
- 2.2.12 Lower Photocells.

2.2.1 Manual Distribution
It permits to carry out the distribution of a coin from a selected tube.

```
Manual Distrib.
[-- -- -- -- --]
```

⚲ In this case the five keys of the Aeterna (**Esc** - **F** - **<<** - **>>** - **Enter**) are combined with the 5 tubes; when each key is pressed, it sends an impulse to the corresponding tube which delivers a coin (**Esc** for the coin present in tube 1, **F** for the coin present in tube 2, etc). To exit the menu it is necessary to press the **Esc + Enter** key combination till on the display appears the menu item 2.2.1 again.

2.2.2 Sequential Distribution
It foresees the distribution of a coin for each tube of the Coin Mechanism.

```
Sequential Dis
[-- 01 01 01 01]
```

⚲ After the automatic distribution of the first coin, on the display of the Coin Mechanism appear two hyphens meaning that the operation in the first tube was carried out;
the successive coin is automatically distributed and on the display appear the hyphens for the second tube too;
the operation goes on till the distribution of the coin present in the tube 5.

2.2.3-2.2.7 Empty Tube 1-5
By selecting the "Empty Tube" menu item the Coin Mechanism empties the indicated tube and leaves inside only the coin minimum level defined in the model (see para. "13.1-60.11 Security Level"). With this operation, by means of the photocells, all coins coming out are counted and the data reported in the counter before the operation is checked. The possible difference between the number of distributed coins and the counter result (which is related to each tube) is reported on the "3.1.2.5-9.5 Correction" menu item.

2.2.8 Empty Tubes
With this menu item the Coin Mechanism empties automatically all the tubes leaving inside only the coin minimum level (see para. "13.1-60.11 Security Level"). The coin counting is carried out in the same mode described in the previous item.

2.2.9 Tube photocells
This menu item permits to check the correct operation of the lower and upper photocells by checking their condition in presence or in absence of coins (dimmed or free).
In the example reported here below, the tubes 1, 2 and 4 contain the lower number of coins, the tubes 3 and 5, instead, contain the higher number of them.
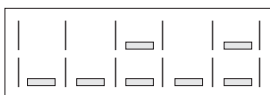
2.2.10 Upper Photocells
This menu item permits to check the correct operation of the upper photocells by checking their condition in presence or in absence of coins. If the photocells result to be dimmed, it means that the quantity of coins present inside the tube has reached the level of the upper photocells (in the example it concerns the tubes 3 and 5) or that the photocells need some cleaning (see para. 4.1.3. "Cleaning the photocells and the tube box").

```
S |  |_| |_|
|  |  |  |  |
```
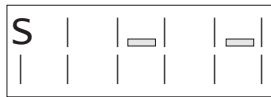
2.2.12 Lower Photocells
This menu item permits to check the correct operation of the lower photocells by checking their condition in presence or in absence of coins. If the photocells result to be dimmed, it means that the quantity of coins present inside the tube has reached the level of the lower photocells (in the example it concerns all the tubes) or that the photocells need some cleaning (see para. 4.1.3. "Cleaning the photocells and the tube box").

```
I  |  |  |  |  |
|_|_|_|_|_|
```

2.3 Coin Validator ✶
The diagnostics concerning the Validator/Separator group foresees the display of the firmware release.

2.3.1 Firmware Release
This function permits to display the firmware release of the Coin Validator connected to the Coin Mechanism: the firmware code (s = software) and release (r = release) of the Coin Validator, the serial number (m = serial number) and the checksum (c = checksum).

```
sxxxx-xxx rx.xx
mxxxxxxxx cxxxx
```
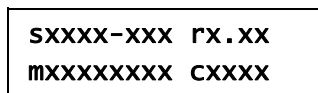
2.4 Key Parameter
In this submenu there are the codes for reading the data inside the key. The menu foresees the following items:
• 2.4.1 Key Credit;
• 2.4.2 Serial Number.

2.4.1 Key Credit
The function is used to check the credit present in the key.

2.4.2 Serial Number
It permits to display the key serial number. It can be combined with an external database (ex. KeyDBasePlus), which permits to identify the key's owner.

```
Serial Number          Serial Number
Insert Key                [XXXXXXXX]
```
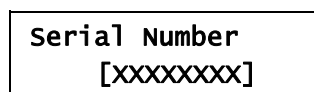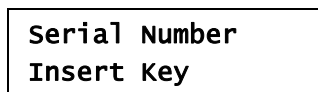
3 Totals [Operator ($)]

The Totals menu consists of 3 submenus:
• 3.1 Partial Totals (automatically reset after each recording);
• 3.2 Cumulated Totals (which can be reset with the "14 Default" menu item);
• 3.3 Partial Delete.

The 3.1 and 3.2 menus have the same items, each of them referring to partial or cumulated values. The partial values are reset after each data recording, the cumulated ones, instead, are reset only after the Coin Mechanism is reinitialized (see para. "14 Default").

3.1 Partial Totals

This menu consists of 6 items:
- 3.1.1 Total Takings;
- 3.1.2 Tube Takings;
- 3.1.3 Total Sold;
- 3.1.4 Distributed;
- 3.1.5 Total Recharge;
- 3.1.6 Without Sale.

3.1.1 Total Takings

It is the cash accepted and not adressed to the tubes: coins assigned to the cash or bills accumulated in the stacker. The menu consists of 4 items:
- 3.1.1.1 Total Takings;
- 3.1.1.2 Pieces;
- 3.1.1.3 Coin Takings;
- 3.1.1.4 Bill Takings.

3.1.1.1 Total Takings ✻

The whole value of coins and bills present in the cash is displayed, expressed in currency.

3.1.1.2 Pieces ✻

The whole number of pieces (coins and bills) present in the cash is displayed.

3.1.1.3 Coin Takings ✻

The menu item foresees 2 submenus:
- 3.1.1.3.1 Value;
- 3.1.1.3.2 Pieces.

3.1.1.3.1 Value

The value of coins present in the cash is displayed, expressed in currency.

3.1.1.3.2 Pieces

The number of coins present in the cash is displayed.

3.1.1.4 Bill Takings

This submenu is not available in the Aeterna MDB Coin Mechanism. Menu items:
- 3.1.1.4.1 Value;
- 3.1.1.4.2 Pieces.

3.1.1.4.1 Value

The value of bills present in the cash (or in the stacker) is displayed, expressed in currency.

3.1.1.4.2 Pieces

The number of bills present in the cash (or in the stacker) is displayed.

3.1.2 Tube Takings

This menu contains all the information concerning the coins entered in the Coin Mechanism tubes. The available items are:
- 3.1.2.1 Real Value;
- 3.1.2.2 Pieces;
- 3.1.2.3 Total Value;
- 3.1.2.4 Manual Charge;
- 3.1.2.5-9 Taking Tube 1-5.

3.1.2.1 Real Value ✻

It is the value of the coins present in the tubes at the moment of recording, expressed in currency.

Note: the Real Value can be read by the printer for data recording by setting the "Real Tubes" parameter in the "10.2 Credit Reading" menu item.

3.1.2.2 Pieces ✳

It is the number of coins present in the tubes.

3.1.2.3 Total Value ✳

The data, expressed in currency, is the whole value of the coins destined to the tubes. In the Partial Totals ("3.1 Partial Totals" submenu) at the end of each data recording (by means of Data-Key, E.C.S. CL RS232 Key, IR PORT Module or Comunica Module) a reset will be carried out; the Cumulated Totals, instead, will not be reset (see also "10.3.3 Automatic Delete" menu item). In the total are not counted the coins manually loaded in the tubes.

3.1.2.4 Manual Charge ✳

The data is the whole total, expressed in currency, of the coins loaded in the tubes of the Coin Mechanism, in the three modes described at para. 2.1.7 "Tube loading".

3.1.2.5-9 Taking Tube 1-5 ✳

The information described so far is reported in detail for each tube:
• 3.1.2.5-9.1 Value;
• 3.1.2.5-9.2 Pieces;
• 3.1.2.5-9.3 Total Value;
• 3.1.2.5-9.4 Manual Charge;
• 3.1.2.5-9.5 Correction.

The first four items of each submenu refer to the same descriptions of the "3.1.2 Tube Takings" menu, according to the specified selected tube.

3.1.2.5-9.5 Correction

When the tube emptying is carried out till the minum level (see menu "2 Diagnostics"), the Coin Mechanism compares the number of coins present with the counter one. If the difference is null, it means that all the operations have been carried out perfectly; if there are differences it means that some coins may have been loaded or unloaded manually inside the tube without recording them in the "1.1 Set Quantity" menu item.

The data results to be **negative** when for the tube emptying was not used the "2.2.3-2.2.7 Empty Tube 1-5" menu item, but the coins have been manually unloaded from the tube box without recording the operation in the "1.1 Set Quantity" menu item.

The data results to be **positive** when some coins have been manually loaded in the tubes and the "1.1 Set Quantity" or the "1.2 Preset Amount" menu items were not updated.

To prevent this problem we suggest to make the tube loading with the automatic modes foreseen by the Coin Mechanism: the "Loading from the coin inlet channel" mode or the "Loading by using the assisted loading function" mode as described in chapter 2 (see para. 2.1.7. "Tube loading").

3.1.3 Total Sold

This menu reports the accounting data referred to the cash or key sales of the vending machine and it foresees the following items:
• 3.1.3.1 Cash Sale;
• 3.1.3.2 No. Sales;
• 3.1.3.3 Sold by Key;
• 3.1.3.5 Sold in EA;
• 3.1.3.6-15 Line 1-10.

3.1.3.1 Cash Sale
It is the total, expressed in currency, of all the sales carried out by using cash.

3.1.3.2 Number of Sales
It is the total number of the cash sales carried out.

3.1.3.3 Sold by Key
The menu consists of the item:

3.1.3.3.1 Sold by Key 1
It is the total, expressed in currency, of the sales carried out in the vending machine by means of keys.

3.1.3.5 Sold In EA (Exact Amount)
The total reports the value of the sales carried out in "exact amount" condition, that is when the Coin Mechanism signals to the user that it cannot guarantee the change. When in the vending machine the "Insert exact amount" message is displayed, it means that inside the Coin Mechanism there could be no enough coins to guarantee all types of change.
If the number of sales in "exact amount" is very high it means that the tube configuration is not optimized for that location and must be checked.

✍ *Note: the Sold in Exact Amount can be read by the printer for data recording by setting the "Exact Amount" parameter in the "10.2 Credit Reading" menu item.*

3.1.3.6-15 Line 1-10
These data concern the first 10 sale lines, which can be displayed on the Coin Mechanism. To get the data concerning all the sale lines it is necessary to carry out the data recording. Inside the single sale lines, the following items are foreseen:
- 3.1.3.6-15.1 Cash Sale;
- 3.1.3.6-15.2 No. Cash Sale;
- 3.1.3.6-15.3 Key Sale;
- 3.1.3.6-15.4 No. Key Sale.

✍ *This menu item is available only if in the "6.2 Prices Management" menu the "Price Holding" or "Cost by Price"options are set.*

3.1.3.6-15.1 Cash Sale
Total, expressed in currency, of the cash sale.

3.1.3.6-15.2 Number of Cash Sales
Number of sales carried out by using cash.

3.1.3.6-15.3 Key Sale
Total,expressed in currency, of the sales carried out by using the key.

3.1.3.6-15.4 Number of Key Sales
Number of sales carried out by using the key.

3.1.4 Distributed ✳
It registers the total, expressed in currency, of the cash distributed by the Change Giver. It consists of the following menu items:
- 3.1.4.1 Value Given;
- 3.1.4.2 Coins Given;
- 3.1.4.3 Manual Unload;
- 3.1.4.4-8 Distr. by Tube 1-5.

3.1.4.1 Value Given
It is the total, expressed in currency, of all the coins distributed by the tubes. In the total are not included the coins manually unloaded from the tubes (see para. "3.1.4.3 Manual Unload").

3.1.4.2 Coins Given
It is the total number of coins distributed from the tubes. In the number are not included the coins manually unloaded from the tubes.

3.1.4.3 Manual Unload
It is the total, expressed in currency, of the coins manually unloaded from the tubes.

3.1.4.4-8 Distributed by Tube 1-5
In this menu there is the detailed information concerning the distributions carried out by the tubes. The menu foresees the following items:
• 3.1.4.4-8.1 Value Given;
• 3.1.4.4-8.2 Coins Given;
• 3.1.4.4-8.3 Manual Unload.

3.1.4.4-8.1 Value Given
It is the total, expressed in currency, of all the coins distributed by the tubes.

3.1.4.4-8.2 Coins Given
It is the total number of the coins distributed by the tubes.

3.1.4.4-8.3 Manual Unload
It is the total, expressed in currency, of the coins manually unloaded from the tubes.

3.1.5 Total Recharge
The total reports the value, expressed in currency, of the recharges carried out in the keys. The menu foresees the following item:

3.1.5.1 Key Recharge
The submenu foresees the following item:

3.1.5.1.1 Key Recharge 1
It is the total, expressed in currency, concerning the credit recharged in the keys.

3.1.6 Without Sale
It is the cash total (coins and tokens) which was not used for sales. Inside the submenu there are 2 items:
• 3.1.6.1 Overprice;
• 3.1.6.2 Not Sold.

3.1.6.1 Overprice
The total overprice is added to the residual credit taken by the Coin Mechanism and not used by the user within the maximum time defined in the "6.9 Credit Max Time" menu item.

3.1.6.2 Not Sold
The total not sold is the credit, which is available for the user, which at Coin Mechanism's switching off cannot be used any more.

3.2 Cumulated Totals
The items of the Cumulated Totals menu are the same described for the Partial Totals; please refer to the menu "3.1 Partial Totals".

3.3 Partial Delete
This function permits to delete the partial totals, not only in the data recording phase, but also by using a specific menu item. It foresees the entering of the authorization password (see "4.4 Totals PIN" menu item) before choosing the option.

```
Partial Delete
   [0***]
```

🔍 Press the **Enter** key to enter the menu item;

enter the 4-digit password which is programmed in the "4.4 Totals PIN" menu item;
the YES option permits the data delete and the Coin Mechanism new start;
with the NO option the display shows the main menu item;
choose the option and press Enter.

4 Security [Operator ($)] ✳

This menu permits to manage 3 different user profiles. The submenu foresees the following items:
- 4.1 Operator PIN ($);
- 4.2 User PIN (▪);
- 4.3 Technician PIN (Ι);
- 4.4 Totals PIN.

The **PIN** term stands for "Personal Identification Number" and is a 4-digit protection code to access the programming menu.
The PIN permits the Coin Mechanism to identify the user profile which is accessing the programming, enabling thus the right profile.
The operator profile has the maximum enabling level (see the introduction to programming at the beginning of this chapter). To enable the PIN request it is enough that at least one of the 3 codes is different from [0000] (default data). If all the codes are equal and null [0000] all the programming and control functions will always be enabled.

4.1 Operator PIN ($) ✳
It is a code, consisting of 4 digits, which permits to define the operator profile, which gives access to the whole programming menu ($). As a default the data set is 0000.

```
Operator PIN
      [0***]
```

✎ Set the first number of PIN by acting on the keys << >>;
press the **Enter** key to confirm the data and set the following number.

4.2 User PIN (▪)
It is a code, consisting of 4 digits, which permits to define the user profile, which gives access to those parts of menu which require an ordinary maintenance (▪). As a default the data set is 0000.

4.3 Technician PIN (Ι)
It is a code, consisting of 4 digits, which permits to define the technician profile, which gives access to those parts of menu which are up to the technician (Ι). As a default the data set is 0000.

4.4 Totals PIN
This code, consisting of 4 digits, enables the delete of partial totals by using the "3.3 Partial Delete" menu item. If the PIN is set at zero, the menu item 3.3 is not available. As a default the data set is 0000.

```
Totals PIN
      [0***]
```

✎ Press the Enter key;
enter the PIN by using the << >> keys;
press the **Enter** key to confirm the data.

In order to change the existing PIN:
press the Enter key;
on the display is shown the message: "Enter Old PIN";
enter the old PIN by using the << >> keys;

press the **Enter** key to confirm the data;
on the display is shown the message: "Enter New PIN";
enter the new PIN by using the **<< >>** keys;
press the **Enter** key to confirm the data;

5 Account Parameters [Operator ($)]

The menu foresees the following items:
*   5.1 Max Cash Cred.;
*   5.2 Max. Key Cred.;
*   5.3 Max. Distrib.;
*   5.4 Decimals;
*   5.5 Base Step.

5.1 Maximum Cash Credit
This menu item sets the maximum cash credit beyond which the bill and the coin acceptance of the Coin Mechanism is inhibited.
The values must be included between 0.00 and 649.99. With the value set at zero, the cash is accepted only with the insertion of the key. As a default the data set is 3.00.

5.2 Maximum Key Credit
This menu item sets the maximum credit limit beyond which it is no more possible to credit any amount on the key, but to carry out sale operations. When the key maximum credit is reached the Bill Validator and the Coin Validator are inhibited. The values must be included between 0.00 and 649.99. As a default the data set is 15.00.

5.3 Maximum Distributable
It is the limit beyond which no change is given. This is the condition even though the change button is pressed on the Coin Mechanism or when the operation mode set is single sale. The values must be included between 0.00 and 649.99. As a default the data set is 3.00.

5.4 Decimals ✳
It sets the number of decimal digits necessary for the management of the preset currency. The setting range is included between 0 and 3. As a default the data set is 2, which corresponds to the 0.00 display. On the display of the Coin mechanism is indicated the number of decimal digits set and the corresponding display.

```
Decimals
      2   →0.00
```

5.5 Base Step ✳
The base step is the measure used to calculate and communicate to the machine the sale prices (usually it represents the smallest value of the currency managed). It is calculated by considering the decimal digits (ex: base step at 1 with 2 decimal digits = 0.01). The parameter is particularly important in the price management in "Prices in VMC" and "Cost by Price" modes, as it limits the value of the prices which can be managed by the System (ex.: with base step 0.01 = the max. price to be managed is 2.40 Euro; for higher amounts - up to about 12.00 Euro - it is necessary to set the step at 0.05). The setting range is included between 1 and 255. As a default the data set is 1.

```
Base Step
      1   →0.01
```

6 Running Mode [Operator ($), Technician (ᴵ), User (■)]

The menu foresees the following items:
• 6.1 Protocol;
• 6.2 Prices Manag.;
• 6.3 Prices Display;
• 6.5 Sale;
• 6.6 Exact Amount;
• 6.7 Change Manag.;
• 6.8 Sale Max Time;
• 6.9 Credit Max Time;
• 6.15 MDB Setup.

<u>6.1 Protocol</u> ✳
In the Aeterna Executive/parallel Coin Mechanism, it is possible to choose the communication protocol with the vending machine to be used:
• ExecutiveMaster (default);
• Electromechanic.

Executive Master
It sets in the Coin Mechanism the operation mode with Executive protocol.

Electromechanic (parallel)
It sets in the Coin Mechanism the operation mode with electromechanic interface.

In the Coin Mechanism with MDB protocol the "MDB Slave" message is displayed; with the BDV protocol, instead, the "BDV Master" message is displayed.

Note: to pass from a protocol type to another one (MDB / BDV / Executive) it is necessary to update the firmware of the Coin Mechanism and to change the connecting harness to the vending machine.

<u>6.2 Prices Management</u>
This menu defines how the sale prices of products are managed. The menu foresees the following items:
• Prices in VMC (default);
• Cost by Price;
• Price Holding.

Should it be necessary to change the setting present in the "6.2 Prices Management" menu item, it would be advisable to carry out the data recording and then the new initialization of the system in order to reset the accounting data which were previously counted (see "14 Default" menu item).

Prices in VMC
This setting mode foresees **the prices setting in the vending machine**. With the "Prices in VMC" mode the product prices cannot be different for the cash sale and the key sale and during the data recording the devices record only the total sold on the whole in all the sale lines.

In the "Prices in VMC" and "Cost by Price" management modes with Executive or BDV vending machines, when the cash prices set in the machine exceed 2,40 Euro, the System parameter in the "5.5 Base Step" menu shall be changed for example into 0,02 or 0,05 Euro as well.

Cost by Price

This mode, which is not available in the BDV version of the Coin Mechanism, foresees the **prices management both in the vending machine and in the Coin Mechanism,** with the possibility of making the cash prices differ from the key prices and of recording the number of selections carried out for each sale price by means of the proper devices (as a matter of fact the data in this case are recorded by the Change-giver).

The product prices are set in the "8 Price Setup" menu item and can be visualized on the display of the vending machine by pressing the button of product selection before inserting the cash (see para. "6.3.2. Machine Prices" with YES option).

On this matter we suggest to set **first of all the prices for the cash sale** with the same order of the prices set in the vending machine, in order to get a print of the data recording in good order (see para. "8.1-50.1 Cash Price") and, only **in a second time**, the prices for the key sale (see para. "8.1-50.2 Price Key"). If the price table of the vending machine does not correspond to the prices set in the Coin Mechanism, in MDB the selection is carried out at the price sent by the vending machine without any difference with the cash sale, in the modes which differ from the MDB, instead, the selection is not carried out.

If in the Coin Mechanism all the sale lines foreseen in the vending machine are not programmed, on the display of the Validator/Separator group the message: "Configuration is wrong" is displayed.

In the "Prices in VMC" and "Cost by Price" management modes with Executive or BDV vending machines, when the cash prices set in the machine exceed 2,40 Euro, the System parameter in the "5.5 Base Step" menu shall be changed for example into 0,02 or 0,05 Euro as well.

When using this mode it is necessary to pay attention to the following points:
- it is not possible to have different key discounts with the same cash price (see table below; example in bold where the price corresponding to the first cash price met is applied);
- the data concerning the consumptions which have been carried out are relative to the price line and not to the product line (ex. if there are different products which have the same price at € 0,50 the data of the consumptions carried out refer to the amount of all the products).

Example of price table in Cost by Price mode

V.M. Price Line	Aeterna Cash	Aeterna Key
0.50	0.50	0.40
0.60	0.60	0.50
0.65	0.65	0.55
0.70	0.70	0.60
0.75	0.75	0.65
0.80	**0.80**	**0.70**
0.80	0.80	0.75
0.90	0.90	0.80
…	…	…
1.10	1.10	1.00

Price Holding

The "Price Holding" mode foresees that **the Aeterna Change Giver manages the prices** with the possibility of making different prices for the cash sale and the key sale and of recording

the sale totals of the single selections by means of the proper devices (as a matter of fact the data in this case are recorded by the Coin Mechanism).

The product prices are set in the "8 Price Setup" menu item and can be visualized on the display of the vending machine by pressing the selection button of the product, before inserting some cash (see para. "6.3.2. Machine Prices" with the YES option selected).

Note: it is recommended to program in the Coin Mechanism all the sale lines foreseen by the vending machine, as the missed price programming keeps inside the Coin Mechanism the value set as default.

If in the vending machine more sale lines are programmed than those foreseen in the Coin Mechanism, on the display of the Validator/Separator group the message: "Configuration is wrong" is displayed.

Example of price table in Price Holding mode

V.M. Price Line	Aeterna Cash	Aeterna Key
1	0.50	0.40
2	0.60	0.50
3	0.65	0.55
4	0.70	0.60
5	0.75	0.65
6	0.80	0.70
7	0.90	0.80
…	…	…
50	1.90	1.60

For programming the product prices for cash sale, see para. "8.1-50.1 Cash Price", for the key sale, instead, see para. "8.1-50.2 Price Key". In the price table of the vending machine, in this case, are programmed the product sale lines (from 1 up to 50) instead of the sale price.

6.3 Prices Display
This menu is available only in Executive or BDV operation modes and if at the "6.2 Prices Management" menu item the "Price Holding" or "Cost by Price" options have been selected. It foresees 2 items:
• 6.3.2 Machine Prices;
• 6.3.3 Compatibility.

6.3.2. Machine Prices
With this option it is possible to choose to display (YES) or not (NO) the cash sale prices on the display of the vending machine, by pressing the selection button of the vending machine. The default setting of the item is YES.

6.3.3 Compatibility
In some particular vending machines, after setting the "6.3.2. Machine Prices" menu item at YES, in order to get the price display it is necessary to improve the compatibility by setting the parameter YES inside this menu item. The default setting of the item is NO.

6.5 Sale

The menu foresees the following items:

- 6.5.1 Key Sale;
- 6.5.2 Cash Sale.

6.5.1 Key Sale

It sets the mode of key sale: Single sale or Multisale. In the Single sale mode by key it is possible to carry out at each key insertion only one sale operation. To carry out a new sale, it is necessary to extract the key and then insert it again. In the Multisale mode, set as default, more operations are possible with the inserted key, till the present credit is used up.

6.5.2 Cash Sale

It sets the mode of cash sale: Single sale or Multisale. In the Single sale mode, set as default, the change is given automatically after the sale; in the Multisale mode, instead, the change is given only by pressing the proper change button (see para. "6.9 Credit Max Time").

6.6 Exact Amount

This menu permits to configure the Coin Mechanism for the management of the change and the exact amount. The options available permit to define the mode the Coin Mechanism enters the "Exact amount" condition: that is when the coin mechanism cannot guarantee the change because of the tube emptying. In this case the bill validator is used only for the recharge of the user keys, but not for the purchases (see para. "9.0 Bill Validator"). The conditionof "Exact amount" is usually signalled by a message displayed on the vending machine or by the lighting up of some proper indicators. On the display of the Coin Mechanism the condition is signalled by the proper symbol (see para. 1.5.2. "Operation conditions").
The menu foresees the following menu items:

- 6.6.1 TubeExactAmount1;
- 6.6.2 TubeExactAmount2;
- 6.6.3 TubeExactAmount3;
- 6.6.4 TubeExactAmount4;
- 6.6.5 TubeExactAmount5;
- 6.6.6 Select. Inhibit;
- 6.6.7 Sale at EA;
- 6.6.8 Limit for EA;
- 6.6.9 Reference Tube.

6.6.1-5 Tube Exact Amount 1-5

This menu item is used by the Coin Mechanism when the "Equation" option is active in the "6.6.9 Reference tube" menu. The calculation of the equation regards only the tubes that in this menu item have set a different number from zero. For each tube concerned with the calculation of the equation it is necessary to define the number of coins which can be distributed, under which there is the enabling of the "**Exact amount**" condition.

Coins which can be distributed = total coins in the tube - security coins

EA = No. of coins which can be distributed by each tube < 6.6.1-5 (if different from zero).

If the tubes analyzed in the equation are only 3, the example could be what follows:

Analyzed tube	Coin value	Programmed coins	Security coins	Sufficient quantity	Insufficient quantity
1	€ 0.05	6.6.1 = 10	13.1.11 = 4	≥ of 14	< of 14
2	€ 0.10	6.6.2 = 8	13.2.11 = 4	≥ of 12	< of 12
4	€ 0.50	6.6.4 = 9	13.4.11 = 1	≥ of 10	< of 10
				Gives the change	Exact amount

The Coin Mechanism enters the "Exact amount" condition only when all the tubes are under the minimum level of coins required for giving the change.

When a tube results to be disabled or blocked, the number of coins which can be distributed will result equal to zero. The setting range is included between 0 and the number set in the "12.8-12.1 Maximum Limit" menu item minus the number of security coins foreseen by the model for the analyzed coin (see para. "13.1-60.11 Security Level"). As a default the data set is 0.

6.6.6 Selective Inhibit

This function permits to choose the way to inhibit the coins that are inserted in the Coin Mechanism. The function is valid only by using cash and is related to the value inserted in the "6.6.8 Limit for Exact Amount" menu item and to the "5.1 Maximum Cash Credit" menu item.

If the Selective Inhibit is enabled (YES option), the Coin Mechanism **accepts the cash only up to the reaching** of the value defined in the "5.1 Maximum Cash Credit" menu item.
If the Selective Inhibit is disabled (NO option), the Coin Mechanism **accepts to exceed** the value defined in the "5.1 Maximum Cash Credit" menu item.
As a default the option set is NO.

In order to explain better this function here is reported a summary table, which is valid only when the Coin Mechanism is in "Exact Amount" condition (see "3.1.3.5 Sold In EA (Exact Amount)" menu item).

Limit for EA	Max. Cash Credit	Selective Inhibit	Description
0.50 €	3.00 €	YES	**1)** If the **Limit for EA** was set with a value of € 0.50, when the Coin Mechanism is in "Exact Amount" condition, it accepts only the coins with **a lower or equal value to € 0.50**. When € 3.00 is set in the **Max. Cash Credit** and **YES is set in** the **Selective Inhibit** items, the Coin Mechanism inhibits all the coins whose value can exceed the Max. Cash Credit. If for example the amount inserted in the Coin Mechanism is € 2.80, all the coins whose value is higher than € 0.20 are **inhibited**. When the value of the Max. Cash Credit (€ 3.00) is **reached**, all the coins are inhibited. By inserting the electronic key or after the sale all the coins are enabled again.
0.50 €	3.00 €	NO	**2)** In the same previous example(1), but with **NO** set in the **Selective Inhibit** items, the Coin Mechanism continues to accept all the coins till the Max. Cash Credit is **exceeded** (ex. € 3.10). When the value on the display of the vending machine exceeds € 3.00, the Coin Mechanism inhibits the acceptance of all coins. By inserting the electronic key or after the sale all the coins are enabled again.

Limit for EA	Max. Cash Credit	Selective Inhibit	Description
0.00 €	3.00 €	YES	**3)** If the **Limit for EA** was set with a value of € 0.00 and **YES** is set in the **Selective Inhibit** item, when the Coin Mechanism is in "Exact Amount" condition, it **inhibits** all the coins that are not addressed to the tubes. In this way all the inserted cash fills up the tubes that start to deliver the change. When € 3.00 is set in the **Max. Cash Credit** and YES is set in the **Selective Inhibit** items, the Coin Mechanism inhibits all the coins whose value can exceed the Max. Cash Credit. If for example the amount inserted in the Coin Mechanism is € 2.90, all the coins whose value is higher than € 0.10 are **inhibited**. When the value of the Max. Cash Credit (€ 3.00) is **reached**, all the coins are inhibited. By inserting the electronic key or after the sale all the coins are enabled again.
0.00 €	3.00 €	NO	**4)** If the **Limit for EA** was set with a value of € 0.00 and **NO** is set in the **Selective Inhibit** item, when the Coin Mechanism is in "Exact Amount" condition, it **inhibits** all the coins that are not addressed to the tubes. In this way all the inserted cash fills up the tubes that start to deliver the change. When the value on the display of the vending machine **exceeds** € 3.00, the Coin Mechanism inhibits the acceptance of all coins. By inserting the electronic key or after the sale all the coins are enabled again.

✎ *The key insertion implies that all the coins and the bill validator are enabled again. As a matter of fact the bill validator results to be inhibited under any condition of "Exact Amount" without inserted key (see para. "9.0 Bill Validator").*

6.6.7 Sale at Exact Amount

When the YES option is selected in this menu item and the Coin Mechanism is in "Exact Amount" condition, it is possible to carry out a product purchase only if in the vending machine is inserted a credit equal to the sale amount. If a product with a lower price than the inserted credit is selected, the vending machine will give back the inserted credit without giving the product. When the NO option is selected (set as default), the Coin Mechanism carries out the requested sale, but does not guarantee the complete change.

6.6.8 Limit for Exact Amount

In this condition, dependent upon the option set in the Selective inhibit menu (see "6.6.6 Selective Inhibit" menu item), **the limit for exact amount is the maximum value of the coin accepted by the Coin Mechanism at that moment**. The value is considered by the Coin Mechanism when the "6.6.7 Sale at Exact Amount" option is active.

In the first two examples of the table, described at para. 6.6.6 Selective Inhibit, the 0.50 Euro coin is the maximum value which can be inserted in the Coin Mechaniam in the "Exact Amount" condition. If the YES option is selected in the selective inhibit item, instead, the value accepted by the Coin Mechanism can be lower than the Limit for EA (0.50 Euro).

In the last two examples of the table, the 0.00 value is set for Limit for EA (default data). In this case the Coin Mechanism inhibits all the coins that are not addressed to the tubes. In this way all the cash inserted fills up the tubes that start to deliver the change. The Limit for Exact Amount must be included between 0.00 and 655.35, **where 0.00 corresponds to the only acceptance of the coins destined to the tubes**. The default setting is 0.00.

In the table below is analyzed the behaviour of the Coin Mechanism, which recognizes 8 coin values (from 0.01 up to 2.00 Euro), but accepts six of them. The programmed model (see the on-line help of EasyCoinProfit software) accepts inside the tubes the 0.05 Eurocents coins up to 1.00 Euro (0.01 and 0.02 Eurocents are inhibited values). The analysis foresees 4 different conditions of "Exact amount":

• Setting at 0.00 which corresponds to no limt of exact amount (in this case only the coins addressed to the tubes are accepted);
• setting at 0.20 (the Coin Mechanism accepts only values lower than or equal to 0.20 Eurocents);
• setting at 2.00 (the Coin Mechanism accepts only values lower than or equal to 2.00 Euro);
• in the "Exact Amount" condition with inserted key, the coins are always all accepted and destined to the tubes or to the cash.

In the examples reported on the table, the coin accumulation inside the tubes is possible only if the tube does not result already full.

Model 0.05/0.10/0.20/0.50/1.00

Recognized coins	EA = 0.00 (none)	EA = 0.20	EA = 2.00	EA + key
€ 0.01	-	-	-	-
€ 0.02	-	-	-	-
€ 0.05	●	●	●	●
€ 0.10	●	●	●	●
€ 0.20	●	●	●	●
€ 0.50	●	⏁	●	●
€ 1.00	●	⏁	●	●
€ 2.00	⏁	⏁	⏏	⏏

Legend:
- = coin inhibited in the model
● = coin addressed to the tubes
⏏ = coin addressed to the cash
⏁ = rejected coin

The total of sales carried out in the "Exact Amount" condition is displayed on the menu item "3.1.3.5 Sold In EA (Exact Amount)".

6.6.9 Reference tube
In this menu it is possible to choose the coin calculation mode inside the change-giver tubes, in order to define when the Coin Mechanism enters the "Exact amount" condition. The menu foresees the following options:
• None (default);
• Tube 1-5;
• Equation.

None
By setting this parameter the Coin Mechanism enters the "Exact amount" condition when the number of coins with **lower value** addressed to the tubes (ex. 0.05 €) falls under the 10 coins which can be distributed (the number of coins which can be distributed is given by subtracting the security coins, that in this case are 4, from the total coins present in the change-giver tubes, ex. 14) (see para. "13.1-60.11 Security Level").
With the EUR model (0.05/ 0.10/ 0.20/ 0.50/ 0.05), which foresees two tubes with a lower value, the "Exact amount" condition occurs when the quantity of 0.05 Eurocoins is lower

than 20 coins (that is when the coin total present in the 2 tubes minus 8 security coins is lower than 20).

Tube 1-5

By choosing a reference tube (from 1 to 5) the Coin Mechanism will signal the "Exact Amount" condition when the quantity of coins present in the selected tube is lower than 10, leaving the value of the coin out of consideration. In the EUR model (0.05/ 0.10/ 0.20/ 0.50/ 0.05), if the reference tube selected is the second, the "Exact Amount" condition occurs when the quantity of 0.10 Eurocoins to be distributed is lower than 10 coins (that is when the coin total present in the tube minus the security coins is lower than 10).

Note: in the configurations having two tubes with the same coin value, it is necessary to choose as reference tube the first between them.

Equation

This menu item foresees a customized calculation of the quantities set in the "6.6.1-5 Tube Exact Amount 1-5" and "13.1-60.11 Security Level" menu items to define when the Coin Mechanism enters the "Exact amount" condition. Options available:
- Active;
- Not Active (default).

6.7 Change Management ✳

This item permits to constrain the change delivery. According to the protocol used the menu options are different.

For the <u>Executive, BDV</u> protocol the menu foresees two options:
- After Sale (default);
- Always.

After Sale

With this option the change delivery occurs only after the sale.

Always

With this option the change delivery occurs after pressing the return button, even though the vending machine has not carried out any sale operation.

For the <u>MDB Slave</u> protocol the menu foresees two options:
- VMC (default);
- MDB ChangeGiver.

VMC

The change delivery is managed by the vending machine.

MDB ChangeGiver

The change delivery is managed in an independent way by the Coin Mechanism.

6.8 Sale Maximum Time

The sale maximum time, expressed in seconds, is available only in Executive or BDV operation mode and corresponds to the time within which the vending machine has to communicate the distribution result to the E.C.S. System. When the preset time (as a default 70) is passed, the operation in progress is cancelled and the credit inserted in the vending machine (both cash and by key) is available for the user's new selection. The setting range is included between 0 and 255. As a default the data set is 70 seconds.

6.9 Credit Max Time

It is the time, expressed in minutes, during which the credit that was not used remains visualized on the display of the vending machine before being cashed (see para. "3.1.6 Without Sale"). When the time is passed if the credit was not used it is added to the "3.1.6.1 Overprice" menu item. The setting range is included between 1 and 255. As a default the data set is 5.

6.15 MDB Setup ✳

This menu permits some particular settings for the Coin Mechanisms operating with MDB protocol. The menu foresees the item:

6.15.7 Status MDB
The menu item foresees 3 options:
• Standard (default);
• Complete;
• None.

Standard
This option foresees the sending of compatible messages between the Coin Mechanism and the vending machines put on the market before 2003 (see MDB protocol).

Complete
This option foresees the sending of all the messages foreseen by the MDB protocol between the Coin Mechanism and the vending machines.

None
This option does not foresee the sending of messages between the Coin Mechanism and the vending machines.

7 General [Operator ($), Technician (⌐)]

In this menu are present the following submenus:
• 7.1 Language;
• 7.3 Currency Displ.;
• 7.6 MDBCurrency Code.

7.1 Language ✳
This item permits to choose the language to be displayed for the messages and for the programming menu items. The menu foresees the following options:
• 1- Italiano (default);
• 2- English;
• 3- Français;
• 4- Deutsch;
• 5- Español;
• 6- Português.

7.3 Currency Display
This item permits to show or not (YES/NO) the EURO (€) symbol on the display. As a default the parameter set is YES.

7.6 MDB Currency Code ✳
It is an identification code recognized at international level, which is linked to the currency used; it is a specific request of the MDB protocol. The code, consisting of 4 digits, can be set according to two different international criteria: **numerical code** (ISO standard 4217) or **phone code** (international code number).
The protocol recognizes the two types of coding by the first digit: **1** for numerical codes and **0** for phone codes. The table is divided into columns which contain the Nation with the corresponding Currency, the Numerical Code and the Phone Code. The default value is 1978 (Euro).

NATION	CURRENCY	NUMERICAL CODE	PHONE CODE
Albania	Lek	1008	00355
Australia	Dollar	1036	0061
Austria	Euro	1978	0043
Belgium	Euro	1978	0032

NATION	CURRENCY	NUMERICAL CODE	PHONE CODE
Brazil	Real	1986	0055
Bulgaria	Lev	1100	00359
China	Yuan	1156	0086
Cyprus	Euro	1978	00357
Denmark	Krone	1208	0045
Finland	Euro	1978	00358
France	Euro	1978	0033
Germany	Euro	1978	0049
Greece	Euro	1978	0030
Hungary	Forint	1348	0036
Ireland	Euro	1978	00353
Italy	Euro	1978	0039
Japan	Yen	1392	0081
Luxemburg	Euro	1978	00352
Malta	Euro	1978	00356
Netherlands	Euro	1978	0031
Norway	Krone	1578	0047
Poland	Zloty	1985	0048
Portugal	Euro	1978	00351
Romania	Leu	1642	0040
Russia	Rouble	1643	007
Slovakia	Euro	1978	00421
Slovenia	Euro	1978	00386
Spain	Euro	1978	0034
Sweden	Krona	1752	0046
Turkey	Turkish Lira	1792	0090
Ukraine	Hryvnia	1980	00380
United Kingdom	Pound	1826	0044
United States of America	Dollar	1840	001
Vatican	Euro	1978	

8 Price Setup [Operator ($), Technician ($\mathbb{I}$)]

In this menu, available only if at the "6.2 Prices Management" menu item the "Price Holding" or "Cost by Price" options have been selected, are enabled the multiple key price tables and the cash and key prices for each sale line are defined.

8.1-50 Price Line 1-50
Inside the 50 sale lines there are the following settings:
- 8.1-50.1 Cash Price;
- 8.1-50.2 Price Key.

8.1-50.1 Cash Price
It is the menu item which permits to set the cash price in all the sale lines available. Together with the cash price the same value is set automatically in all the key price tables available for this line. The setting range is included between 0.00 and 59.99. As a default the data is set at € 59,99.

```
Cash Price
  €        59.99
```

🔍 Change the price by using the **<< >>** keys.
Press the **Enter** key to confirm the data.

8.1-50.2 Price Key

It is a reference standard price for the key price tables for all the sale lines available (see para. "Example of price table in Price Holding mode"). The setting range is included between 0.00 and 59.99. As a default the data is set at € 59,99.

9 Bill Setup [Operator ($), Technician (Ɩ)]

In this menu are set the operating mode of the Bill Validator and the bill values to be accepted:
• 9.0 Bill Validator;
• 9.1-16 Bill 1-16.

9.0 Bill Validator

This item permits to set the operation mode of the Bill Validator if it is connected to the Coin Mechanism. Leaving the mode set out of consideration (always enabled or enabled by key), in "Exact Amount" condition (see para. "6.6 Exact Amount"), the Bill validator is active only in case a key or card is inserted in the proper reader and the credit is thus added to the cashless device.
The menu foresees the following operation modes:
• MDB always en.;
• MDB enab.by key.

MDB always enabled
With this option the MDB Bill Validator is always enabled.

MDB enabled by key
With this option the MDB Bill Validator is only enabled at the insertion of a key in the proper Reader.

9.1-16 Bill 1-16

The number of programmable bills and their meaning depends on the type of bill validator, which was selected inside the "9.0 Bill Validator" menu (in the MDB validator the programmable bills are **16**).
By entering each single menu, on the display are shown the programmed data of each bill (in the example the bill 3 of 20.00 Euro results to be blocked becuase the Coin Mechanism is in "Exact Amount" condition: see para. "6.6 Exact Amount").

```
Bill 3 ᵭ
₵ 20,00 € [9/3]
```

Starting from release 2.6 of Aeterna Coin Mechanism it is possible to get the information concerning the bill acceptance, by simply watching the display.
If the bill is accepted by the Validator on the display it is represented by this animated image:
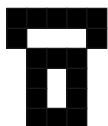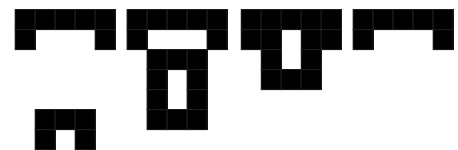
In case the bill cannot be accepted, for example because the Coin Mechanism is in "Exact Amount" condition (see para. "6.6 Exact Amount") or simply because it results to be disabled in the Validator, the display will show the image of a fixed bill.

The data necessary for a correct setting are reported on the validator's label. To each bill is associated the value, by following the programming order which is reported on the label.
The data reported on the label are by way of example. Each validator is programmed in order to satisfy the customer's needs. For this reason there is no standard label which is valid for all the bill validators, but the label is **customized** and printed during the testing phase.

Example of Validator's label:
- name;
- code;
- currency and programmed model;
- output mode;
- database release;
- power supply;
- absorbed power;
- value of the stored bills (**V**);
- programmed outputs (**O**);
- channel used (**C**).

LITHOS 300 Up Stacker			X.XX C€		
COD. 908792			V=24V AC/DC - Pmax=10W		
[EUR] European Union (BCD)					

V	O	C	V	O	C
EU 5	1	1,2,3,4	EU 10	2	41,42
EU 5	1	5,6,7,8	EU 20	3	43,44,45,46
EU 5	1	9,10,11,12	EU 20	3	47,48
EU 5	1	13,14,15,16			
EU 5	1	17,18,19,20			
EU 5	1	21,22,23,24			
EU 5	1	25,26,27,28			
EU 10	2	29,30,31,32			
EU 10	2	33,34,35,36			
EU 10	2	37,38,39,40			

fig. 36

10 Reading Setup [Operator ($)]

It is a configuration menu of data recording and it foresees the following items:
- 10.2 Credit Reading;
- 10.3 Recording Device;
- 10.12 Audit Executive.

✎ *In the Aeterna MDB Coin Mechanism only the menu 10.3 is displayed.*

10.2 Credit Reading
In the credit reading by printer (see para. "10.3.1 Device" with option "Printer") it is possible to choose the type of data to be recorded between the two available options:
- Exact Amount;
- Real Tubes (default).

Exact Amount
With this option the recording of the credit sold by the Coin Mechanism in the "Exact amount" condition is carried out (see para. "3.1.3.5 Sold In EA (Exact Amount)").

Real Tubes
With this option the recording of the credit present in the tubes at that moment is carried out (see para. "3.1.2.1 Real Value").

10.3 Recording Device
The menu item foresees the following submenus:
- 10.3.1 Device;
- 10.3.2 IRDA Password;
- 10.3.3 Automatic Delete;
- 10.3.5 Baud Rate;
- 10.3.7 Printer Rec.

10.3.1 Device
This item permits to choose the device to be used for data recording. During the EVA-DTS recording/ transmission on the display of the Coin Mechanism is shown the ●)) symbol (see para. 1.5.2. "Operation conditions"). The submenu foresees the following options:
- None (default);
- EVADTS-> IRDA;
- EVADTS-> IR PORT;
- EVADTS-> PC;
- Printer.

None
With this option it is not possible to carry out the data recording.

✎ *If in the "10.3.1 Device" menu item the "None" option is selected, the successive items of the same menu (10.3.2-5) will be inhibited.*

EVADTS->IRDA
With this option the data expressed according to the EVA-DTS protocol specifications can be recorded by the Aeterna Coin Mechanism by means of the IR interface integrated in the Validator/Separator group. By enabling this function on the first line of the Coin Mechanism display will appear the IR symbol (see para. 1.5.2. "Operation conditions").

EVADTS -> IR PORT
This option is used when an IR PORT Module is connected to the Aeterna Coin Mechanism to carry out the data recording according to the EVA-DTS protocol specifications. By enabling this function on the first line of the Coin Mechanism display will appear the IR symbol (see para. 1.5.2. "Operation conditions").

EVADTS -> PC
This option is used when to the Coin mechanism is connected the harness for serial communication to PC, the PC programming interface for Systems and Validators in "Parameter programming" mode, and any recording device in EVA-DTS which uses the RS232 standard to carry out the data recording according to the EVA-DTS protocol specifications. By enabling this function on the first line of the Coin Mechanism display will appear the **PC** symbol (see para. 1.5.2. "Operation conditions").

✎ *Note: by enabling a peripheral for data recording, the possibility of carrying out any operation by means of EasyCoinProfit is excluded. This condition is signalled on the display with the IR or PC symbol (see para. 1.5.2. "Operation conditions"). By pressing the Esc + Enter keys on the programming keypad it is possible to disable momentarily the data recording and to enable the operations on PC by means of EasyCoinProfit (see para. 3.1.1. "Programming keypad"). In this case the IR or PC symbol will not be shown on the display. To restore the starting situation it is necessary to switch off the Coin Mechanism and then switch it on again.*

Printer
This option is used when a serial printer is connected to the Coin Mechanism for carrying out the data recording (see para. "10.3.7 Printer Recording"). By enabling this function on the first line of the Coin mechanism display will appear the symbol of the printer (see para. 1.5.2. "Operation conditions").

10.3.2 IRDA Password
This menu item permits to set a password for enabling the transmission of the IR data; it consists of 8 hexadecimal digits (accepted characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F). As a default the password is set at 00000000. In this latter condition the Coin Mechanism acquires any password from the data recording palmtop terminal.

```
IRDA Password
   [⯈00000000]
```

🔍 Enter the first number of the Password by using the **<< >>** keys;
press the **Enter** key to confirm the data and pass to the following one.

10.3.3 Automatic Delete
This function permits to carry out the data automatic delete after the EVA-DTS recording carried out. The reset occurs after the first event (key, bill or coin insertion or sale request).
As a default the data set is NO.

10.3.5 Baud Rate
In this menu item the start rate for the data recording by infrared in the Aeterna Coin Mechanism is set. The default data is 2400 Baud Rate, which represents the value specified by the EVA-DTS protocol. The submenu foresees the following options:
- 2400 (default);
- 4800;
- 9600;
- 19200;
- 38400;
- 57600;
- 115200.

Note: the start rate has to be selected according to the start rate set in the palmtop PC which is used for the data recording.

10.3.7 Printer Recording
This function permits to choose the type of recording to be carried out by means of the printer. Further details about the data recording by printer are described at the end of chapter 3 (see para. 3.3.5. "Recording by means of printer").
- Partial (default);
- Cumulative.

Partial
With this type of recording the printer will read the totals stored inside the Partial Totals menu item, starting from the last data recording.

Cumulative
With this type of recording the printer will read the cumulative totals. They are stored inside the Cumulated Totals menu and are not deleted after the data recording, but only when the system is initialized again (see para. "14 Default"). The setting of this mode always foresees the delete of the partial totals after the data recording.

10.12 Audit Executive
This menu item, available only for the Executive protocol, is used in case the data recording - in addition to the System - is extended to the vending machine too. It foresees that the Coin Mechanism sends the accounting data, which are foreseen by the Executive protocol, to the vending machine. Options available:
- Active;
- Not Active (default).

11 Key Setup [Operator ($)]

In this menu are set the parameters for key management; it foresees the following items:
- 11.1   Machine Code;
- 11.6   Credit Limit;
- 11.19 Recharge Key.

11.1 Machine Code ✳
It is a code, consisting of 8 digits, which identifies the single Coin Mechanism. This code is very useful in accounting data recording to identify the device. As a default the data set is 00000000.

11.6 Credit Limit
The menu foresees the following item:

11.6.1 Limit Value
It is the credit limit beyond which the key is not accepted by the System. If the code is zero the function is not active. The setting range is included between 0.00 and 64999.00. As a default the data set is 30.00.

11.19 Recharge Key
It is a normal User Key with a serial number present in the "11.19.2 Key Serial Number List" menu which permits to make a **fast recharge** of the Coin Mechanism tubes without entering the programming menu (see para. 2.1.7.3. "Loading by using the assisted loading function").
During the recharge operation on the display of the Coin Mechanism the number of missing coins in order to reach the level set in the "12.8-12 Setup Tube 1-5" programming menu is displayed.
The submenu foresees the following items:
• 11.19.1 Mode;
• 11.19.2 Key Ser.No. List.

11.19.1 Mode
The fast recharge can be carried out in two modes:
• Standard;
• Automatic Change (default).

Standard
In the standard mode the coins inserted in the Coin Mechanism are counted by the Validator with the "1.3 Manual Recharge" function and are added to the "3.1.2.4 Manual Charge" menu item, which is available for the data recording in an extended format.

Automatic Change
In the automatic change mode the cash inserted in the Coin Mechanism is counted with the "1.3 Manual Recharge" function and at the end of the operation an amount equal to the inserted one - but consisting of coins with high value - is given back. The operation does not imply any change in the total recording: the inserted coins are simply added in the "3.1.2.4 Manual Charge" menu item and the delivered coins are added in the "3.1.4.3 Manual Unload" menu item. In the first recharge of the Coin Mechanism it is recommended to use the Standard mode in order to avoid the tube emptying due to the change.

11.19.2 Key Serial Number List
This function is available only by using a Coges MDB cashless System which permits to manage the keys which will be used for the assisted loading of the tubes in the Coin Mechanism (see para. "2.1.7.3. Loading by using the assisted loading function" and para. " 11.19 Recharge Key"). The submenu foresees the following menu items:
• 11.19.2.1 Delete;
• 11.19.2.2-11 Key No. 1-10.

11.19.2.1 Delete
It permits to delete the serial numbers entered to enable the keys for assisted loading.
The submenu foresees the following options:
• YES;
• NO.

11.19.2.2-11 Key No. 1-10
There are 10 fields available for entering the serial number of the keys for assisted loading.

12 Tube Setup [Operator ($)] ✳

This menu permits to configure the Coin Mechanism in order to use the tube group in a correct way. The menu foresees the following items:
• 12.8 Setup Tube 1;
• 12.9 Setup Tube 2;
• 12.10 Setup Tube 3;
• 12.11 Setup Tube 4;
• 12.12 Setup Tube 5.

12.8-12 Setup Tube 1-5
Inside each submenu it is possible to display the value of the coin. The lock indicates if the interested tube is under the condition to receive the coins or if it is blocked. The menu item foresees the following options:
• 12.8-12.1 Maximum Limit;

- 12.8-12.2 Tube Block.

```
Setup Tube 1 🔓
  0.10€ [12/1]
```

12.8-12.1 Maximum Limit
In this menu item it is defined the maximum number of coins to be accumulated in each tube, which refers to the preset amount (see para. "1.2 Preset Amount"). The number set is a threshold beyond which the coins are addressed to the cash or to the equivalent tube (ex. 70).

12.8-12.2 Tube Block
This menu item permits to block the coin addressing to the tube without changing the programmed model. The menu item is useful for disabling the coin accumulation inside a tube, when this is not available.
By selecting the NO option (lock open 🔓) the coins are accumulated in the tube; by selecting the YES option (lock closed 🔒) the coins are addressed to the cash or are considered rejects. On the display is shown the active option at that moment and its graphic representation.

```
Tube Block
 ✓ [NO]    🔓
```

13 Coin Setup [Operator ($), Technician (🛠)] ✳

The model to be used in the Aeterna Coin Mechanism is programmed by using the **EasyCoinProfit** software. Some of the programmed parameters can be changed, while others can only be displayed. The items available in this menu are:
- 13.1-60 Coin No. 1-60;
- 13.61 Coin Read;
- 13.62 Validator Step.

13.1-60 Coin Number 1-60
These menu items display the data concerning the coin. In the upper line is indicated the coin number, that is the number of channel used to store the coin inside the model and the destination. In the lower line of the display is indicated the coin value and the current menu item. If in the upper line, a lock is displayed between the channel number and the destination, it means that the coin is not enabled and that it will be rejected.

```
Coin No. 6 🔓
  0.50 € [13/6]
```

In this menu it is possible to get information on the coin destination, by simply scrolling the menu items and watching the display.

The tubes from 1 up to 5 are displayed in the following way: ⌊ ⌊ ⌊ ⌊ ⌋

Programming can foresee multiple tubes too; in this case the display will be the following: ex. tubes 2 and 4 or tubes 2, 3 and 5.
The animation is displayed as follows:

Coin destined to the tubes: ex. 1 and 4

Coin destined to the cash:

Rejected coin:

Each type of coin foresees the following menu items:
• 13.1-60.1 Sent Values;
• 13.1-60.2 Coin Security;
• 13.1-60.3 Destination;
• 13.1-60.4 Set Value;
• 13.1-60.5 Compare;
• 13.1-60.6 Acquire;
• 13.1-60.9 Token;
• 13.1-60.10 Fake;
• 13.1-60.11 Security Level;
• 13.1-60.12 Overflow Level;
• 13.1-60.13 Min. Photocell;
• 13.1-60.15 Max. Photocell;
• 13.1-60.16 Description.

13.1-60.1 Sent Values
It permits to display the recognition parameters of the interested coin. The data displayed cannot be changed and are used for a possible comparison with the data present in the model. Next to the parameters is indicated an acceptance range. If the coin inserted in the Coin Mechanism has lower or upper values than those indicated in the range, it is rejected.
The number of parameters displayed can change according to the type of coin:
• TM   XXXX-XXXX;
• TP   XXXX-XXXX;
• FM   XXXX-XXXX;
• FP   XXXX-XXXX;
• DM   XXXX-XXXX;
• TM1 XXXX-XXXX;
• RP   XXXX-XXXX;
• AM   XXXX-XXXX.

```
TM   XXXX-XXXX
TP   XXXX-XXXX
```

TM, FM and TM1
Reference parameters concerning the coin alloy.

TP and FP
Reference parameters concerning the coin thickness.

RP e AM
Reference parameters concerning the coin shape.

DM
Reference parameter concerning the coin dimension.

13.1-60.2 Coin Security
It permits to change the acceptance parameters of the coin. By changing the data it is possible to reduce or widen the acceptance intervals of the coin parameters. The setting range is included between -31% and +31% and can be set in a one-sided way or in both extremes (the value **00%** is considered neutral). By changing the data set for the coin security, programming is not more compliant with what defined in the model.

Example of security change
It may happen that some coins, for any reason, are not accepted by the Coin Mechanism. Usually they are coins with particular features, or placed at the extremes of the existing range in circulation. If you intend to widen the tolerance in order to accept the coins with these features too, just imagine the security margin as a segment (a) which can be widened or reduced on the left (b), on the right (c) or on both sides (b+c).

By using the **F** key of the Coin Mechanism it is possible to select the widening of the **left** side **[X-]**, of the **right** side **[-X]** or of **both sides [XX]** and then to set the widening percentage (ex. +05%).

```
Coin Security
   +00%      [--]
```

✎ Select the type of widening you intend to perform by using the **F** key;
set the security margin (+00%) by using the **<<->>** keys;
press the **Enter** key to confirm the data and exit from the menu item.

13.1-60.3 Destination
It permits to change the coin destination (tubes or cash).
Usually the change of a coin destination occurs when the tube configuration in the box has been changed, which requires a series of operations to be performed. The change of configuration concerns both the mechanics, with the check and the replacement of the interested forks and tubes (see para. "Configuration of the tube box"), and some programming operations.
Generally the coin destination can be of 3 types:
- cash destination (⏏);
- tube destination (T XXXXX);
- reject destination (⏎).

Each coin can be assigned to more tubes. The programming menu foresees all the possible combinations for assigning the coin only to a tube (from T 1 to T 5), for two tubes (ex. T 15), for three tubes (choice of the three tubes with the same value ex. 135), for four tubes (ex. T 1345) up to a maximum of five tubes with the same value (ex. T 12345).
If next to the destination tube is automatically displayed a closed lock (🔒), it means that the tube has already been used for the destination of other coins.

Example of destination change
The Aeterna Coin Mechanism configuration is the following: "0.05 €/ 0.10 €/ 0.20 €/ 0.50 €/ 0.05 €". All the just listed values are destined to the Coin Mechanism tubes, the 1.00 € and 2.00 € coins, instead, are destined to the cash. If you intend to replace the 0.05 € tube in the first position with a 1.00 € tube, follow these instructions:
a) Replace the mechanical parts by following the instructions described in chapter 2 (see para. "Configuration of the tube box");
b) Change the destination of 0.05 € coin (coin 3 of the model) from T 15 (tube 1 and tube 5) to T 5;

```
Destination          Destination
✓ T   15             ✓ T    5
```

c) Change the destination of 1.00 € coin (coin 7 of the model) and set the T 1 (tube 1);
d) Make the tube loading following the "1.3 Manual Recharge" mode.

✍ *If the change operation of the coin destination is carried out in more coin mechanisms it may be better to carry out a programming with EasyCoinProfit (see the on-line help of the software at para. "Models File").*

13.1-60.4 Set Value
It permits to change the value of the present coin. Usually the data is changed when it is a customized token which can have a variable value.

13.1-60.5 Compare

It permits to compare in a graphic way the parameters of the coin passed inside the Coin Mechanism with the values stored inside the model (see para. "13.1-60.1 Sent Values").

The symbol -[-■-]- indicates that the parameter is within the range allowed (see the example with the TM parameter).

The symbol -[---]■ indicates that the parameter is out of range in excess (see the example with the TP parameter).

The symbol ■[---]- indicates that the parameter is out of range in defect.

```
TM        -[-■-]-
TP        -[---]■
```

13.1-60.6 Acquire

This operation permits to acquire a new coin/token.

⚲ To carry out this operation it is necessary to scroll the "13.1-60 Coin Number 1-60" menu item and identify a coin where there is no programming (ex. Coin No.10). To be sure that the interested channel is free from any programming, it is necessary to enter the "13.1-60.1 Sent Values" menu item and check that all the values are set at 0000-0000.

```
Coin No. 10
          [13/10]
```

⚲ Enter the "13.1-60.6 Acquire" menu item and insert the coin/token to be programmed at least for 40 times (more passages you make and more reliable will result the acquisition).
The counter is increased at each passage.

```
Acquire
  040
```

⚲ Press the **Enter** key to confirm the data.
The coin/token will take the value 0.00 as a default with reject destination (⤴). Change the value in the"13.1-60.4 Set Value" item and the destination in the "13.1-60.3 Destination" item. Programming of tokens requires to program the "13.1-60.9 Token" item too. In case of a false coin it is necessary to program the "13.1-60.10 Fake" menu item too.

13.1-60.9 Token

The menu permits to manage the coin analyzed as token. Options available:
•   YES;
•   NO.

The main differences between a coin and a token management are the following:
•   by inserting a coin the cash credit is increased of the value assigned to the coin. After the sale any change is delivered. The coin value can be added to the credit present in the key;
•   by inserting a token the sale lines of products with a value lower than or equal to the token inserted are enabled. In this case the token value is a sale Bonus and does not foresee the change delivery or the storage of the equivalent value inside the key.

In the programmed model more tokens with different values can be configured.
The token is accepted by the Coin Mechanism even in condition of "Exact Amount", as in no case the change delivery or the paying back in case of failed sale are foreseen (see para. "3.1.6.2 Not Sold"). The Coin Mechanism does not foresee the token's accumulation inside the tubes and addresses the token to the cash. The preset data (YES/NO) depends on the programmed model.

Token management

Manual programming
The manual programming of the token is carried out completely by using the keypad of the Aeterna Coin Mechanism in the following way:

1) Token programming	Carry out the token acquisition by using the "13.1-60.6 Acquire" menu.
2) Set value	Set the value of the token in the "13.1-60.4 Set Value" menu.
3) Define token	Define the management of the coin acquired as token in the "13.1-60.9 Token" menu.
4) Token destination	Confirm the token destination into the cash in the "13.1-60.3 Destination" menu. As an alternative the token can be given back to the user.
5) Exact amount (optional)	The sale by token operates in condition of "Exact Amount" too, see "6.6.7 Sale at Exact Amount" menu.

Programming by software
The programming of token by means of a software foresees the following operations:

1) Token programming	Carry out the token acquisition by using the EasyCoinProfit software.
2) Value and definition	Set the value and the token management with the special flags.
3) Create model	Select an already existing model, with the same tube configuration and make the copy. Add the acquired token and set as destination cash or reject. Save the model.
4) Model update	Update the model of the Coin Mechanism according to what defined in the para. "Model update by PC".

13.1-60.10 Fake
This menu item is used to identify possible fakes programmed in the model and can be referred to coins or tokens. With the YES option the coin destination is automatically programmed as reject (⊅). With the NO option the token or the coin could be addressed to the cash (⎍) or to the tubes (T X) only if in the destination the reject is not foreseen and if the value is set at zero. The preset data (YES/NO) depends on the programmed model.

13.1-60.11 Security Level
This menu item displays the Security level, that is the quantity of coins **which always remain inside each tube** to guarantee the correct positioning of the coins at entry and a correct delivery of the coins at exit. The value is already programmed inside the coin model and cannot be changed.

13.1-60.12 Overflow Level
The menu item displays the maximum number of coins which shall be inside the tube. The value is already programmed inside the model and cannot be changed. To limit the number of coins inside the tube it is necessary to change the data set in the "12.8-12.1 Maximum Limit" menu item.

13.1-60.13 Minimum Photocell
The menu item displays the maximum number of coins which can be inserted inside the Coin

mechanism tube, without dimming the lower photocell. The value is already programmed inside the model and cannot be changed.

13.1-60.15 Maximum Photocell
The menu item displays the maximum number of coins which can be inserted inside the Coin mechanism tube, without dimming the upper photocell. The value is already programmed inside the model and cannot be changed.

13.1-60.16 Description
In this menu item are displayed the data programmed in the model and concerning the different coins. In the lower line of the display is shown the alphabetic code of the programmed currency, the coin value and the channel where it was stored.

```
Description
EUR 0.50 C06
```

13.61 Coin Read
It displays the parameters read which concern the last coin inserted in the Coin Mechanism. The display shows the same parameters described at "13.1-60.1 Sent Values" item.

13.62 Validator Step
In this menu item is displayed the measure according to which the values of the coins are calculated. With the Step at 1 (0.01), the Validator will calculate the coin value from 0.50 Euro as 50 Step. The value is already programmed inside the model and cannot be changed.

```
Validator Step
     1   0.01
```

14 Default [Operator ($), Technician (⌇)] ✳

This menu item, by means of the **code 6203**, permits to reinitialize the Coin Mechanism. With this operation the accounting data (partial and accumulated totals stored inside menu 3) are reset and all the programming codes assume the default values (59.99 for prices).
The values of the model before the operation remain unchanged. As a default the data set is 0000.

3.3. Recording the data

It is possible to read the data recorded during sales operations using some different devices, which are described here below.

3.3.1. Aeterna Coin Mechanism

To carry out the data recording with a palmtop PC directly from the Coin Mechanism, it is necessary to enter the "10.3.1 Device" item and set the "EVADTS->IRDA" parameter. The recommended distance to carry out this operation is included between 20 and 80 cm.
In addition to the data recording it is possible a remote programming of the cash and key prices on the payment system or on the change-giver coin mechanism.

3.3.2. EVA-DTS recording on PC

To record the data **in EVA-DTS format** (DDCMP protocol) by means of **PC** it is necessary to connect the harness for serial communication to PC to the **J4** connnector of the Base board without power supply (see para. 1.4.7.2. "Harness for serial communication to PC").
To enable this type of recording it is necessary to set the **"EVADTS -> PC"** option at the "10.3.1 Device" menu item. Start the software dedicated to this type of operaion and wait that all the data are downloaded.
Thanks to the EVA-DTS protocol, in addition to the data recording it is possible a remote programming of the cash and key prices on the payment system or on the change-giver coin mechanism.

3.3.3. Comunica Module

To record the data by means of the Comunica Module it is necessary to enter the Coin Mechanism programming and in the "10.3.1 Device" item set the "EVADTS -> PC" parameter. Connect the harness for serial communication to PC available on request (see para. 1.4.7.2. "Harness for serial communication to PC") to the Comunica Module and to the **J4** connnector of the Base board without power supply (see para. 1.3.4. "Base board").
As regards the reception, the collection and the analysis of the data there are two possibilities:
• the installation in the server of a management software supplied by Coges, which carries out the control and monitoring of all the communications sent by the Comunica Module in real time and becomes integrated in a transparent way with the management program used;
• the web hosting management on Coges server for an easier inquiry of the recorded information.

The control software supplied by Coges interacts with the main management programs present on the market (VEGA – Digisoft, Orba, Target, Distrilog and others); in case the operator uses a different management software, even a customized one, it is possible to study an integration process to make it compatible.
In addition to the data recording it is possible a remote programming of the cash and key prices on the payment system or on the change-giver coin mechanism.

For any further explanation contact Coges Customer Service.

Note: it is not possible to connect the IR PORT Module and the Comunica Module at the same time as they use the same connector of the board.

3.3.4. IR PORT Module

To record the data by means of the IR PORT Module it is necessary to enter the Coin Mechanism programming and in the "10.3.1 Device" item set the "EVADTS -> IR PORT" parameter. Connect the IR PORT Module to the **J4** connnector of the Base board without power supply (see para. 1.3.4. "Base board"). To read the data it is necessary that the infrared port of the palmtop computer is addressed towards the IR PORT Module. The recommended distance to carry out this operation is included between 20 and 80 cm.

In addition to the data recording it is possible a remote programming of the cash and key prices on the payment system or on the change-giver coin mechanism.

Note: it is not possible to connect the IR PORT Module and the Comunica Module at the same time as they use the same connector of the board.

3.3.5. Recording by means of printer

To record the data by means of the printer it is necessary to enter the Coin Mechanism programming and in the "10.3.1 Device" item set the "Printer" parameter.

Choose the type of recording to be carried out (partial or cumulative totals) in the "10.3.7 Printer Recording" menu item. Connect the harness for printer to the **J14** connector of the Base board (see para. "Harness for printer" of chapter 1).

After connecting to the Coin Mechanism's display the following message is displayed:

```
    Printing
     Wait
```

The printout starts automatically.

Example of recording by using the printer:
CO.GE.S.
ECS N. 00000000
PRINTOUT OF
TOTALS IN EURO

TAKINGS TO TUBES	000034,75
TAKINGS CASHED	000057,00
RETURNED TO CUSTOMERS	000030,40
MANUALLY UNLOADED	000011,35
OVERPRICE TAKINGS	000000,85
SALES	000026,50
SALES WITH BONUS	000000,00
SALES WITH KEY	000032,08
MANUALLY LOADED	000041,00
FOR KEY RECHARGING	000028,50
EXACT AMOUNT	000009,90 (or real value in tubes)
FOR BONUS RECHARGING	000000,00
TOTALS SELECTIONS	

```
   CASH              WITH KEY
    NO.   PRICE       NO.   PRICE
  1 ! 00000 ! 059,99   1 ! 00000 ! 059,99
  2 ! 00000 ! 059,99   2 ! 00000 ! 059,99
  3 ! 00000 ! 059,99   3 ! 00000 ! 059,99
  4 ! 00000 ! 059,99   4 ! 00000 ! 059,99
  5 ! 00000 ! 059,99   5 ! 00000 ! 059,99
  6 ! 00000 ! 059,99   6 ! 00000 ! 059,99
  7 ! 00000 ! 059,99   7 ! 00000 ! 059,99
  8 ! 00000 ! 059,99   8 ! 00000 ! 059,99
  9 ! 00000 ! 059,99   9 ! 00000 ! 059,99
 10 ! 00000 ! 059,99  10 ! 00000 ! 059,99
```

By removing the harness on the display of the Coin Mechanism is shown the message:

```
              End
              End
```

3.4. Firmware update

To carry out the operations of firmware update, it is necessary to switch off the Coin Mechanism and unhook the Validator by acting on the fastening clip (see para. 2.1.3. "Installation modes") and disconnect it from the Base Board.

3.4.1. Firmware update of the Base board by PC

In the Aeterna Coin Mechanism the firmware update occurs by means of portable or palmtop PC connected to the **J4** connector of the Aeterna Base board (see para. 1.3.4. "Base board"). The software used is **FlashManager**, which is available at our website: www.coges.eu at page Technical support\Download\Software. Connect the special interface (see para. 1.4.6.2. "PC programming interface for systems/validators") to the J4 connector of the Base board.
Start FlashManager and select the file of the new firmware release. Choose the correct serial port and start the update by clicking on the proper icon. The operation in progress is confirmed by the lighting up of the orange LED (DL1) on the base board. Wait that the operation is ended. The orange LED is switched off.

#### 3.4.1.1. Firmware update of the Base board by Maxi Programmer

In the Aeterna Coin Mechanism the firmware update can be carried out by means of the Maxi Programmer too. Connect the "Maxi Programmer harness for TP606 ccTalk and PROFIT Validator" to the **J4** connector of the Aeterna Base board. Switch on the Maxi Programmer, choose the update to be carried out and press the START key.
For further information see the documentation supplied with the Maxi Programmer.

3.4.2. Firmware update of the Validator/Separator group

To carry out the firmware update, it is necessary to unhook the Validator/Separator group from the Coin Mechanism by acting on the fastening clip (see para. 2.1.3. "Installation modes").
Remove the Validator/Separator group from the Coin Mechanism's Base, turn it by 180 degrees and replace it in the proper seats. In this way it is possible to carry out the firmware update and at the same time to keep the connection between the Validator/Separator group and the Coin Mechanism.

fig. 37
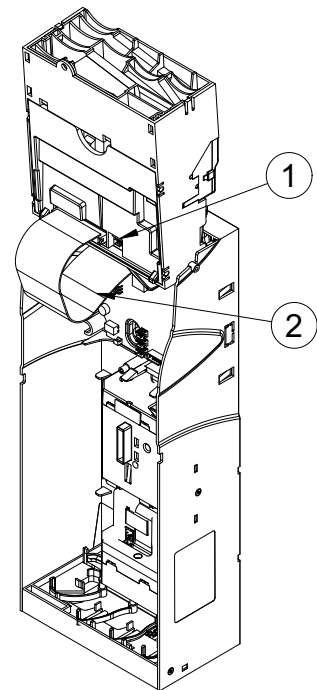
1 = Minitek 2x5 white connector (J6)
2 = Harness for power supply and communication between Validator/Separator group and Coin Mechanism

3.4.2.1. Firmware update by PC

The firmware update of the Validator/Separator group can be carried out by means of the PC too with **FlashManager** software, which is available on the website: www.coges.eu at page Technical support\Download\Software. To proceed with the operation it is necessary to request the special interface (see para. 1.4.6.2. "PC programming interface for systems/validators"). Connect the interface to the Minitek 2x5 white connector of the Validator/Separator group and to the PC.
Start FlashManager and select the file of the new firmware release. Choose the correct serial port and start the update by clicking on the proper icon. Wait that the operation is ended. For further information see the on-line help of the FlashManager software.

3.4.2.2. Firmware update by Maxi Programmer

The firmware update of the Validator/Separator group can be carried out by using the Maxi Programmer too. Connect the "Maxi Programmer harness for TP606 ccTalk and PROFIT Validator" to the Minitek 2x5 white connector of the Validator/Separator group. Switch on the Maxi Programmer, choose the update to be carried out and press the START key.
For further information see the documentation supplied with the Maxi Programmer.
Enter the "2.3.1 Firmware Release" menu and check that the Validator/Separator group is updated to the desired release.

3.4.3. Update of the programmed model

3.4.3.1. Model update by PC

The update of the model can be carried out by PC, by using the **EasyCoinProfit** software available in the website: www.coges.eu at page Technical support\Download\Software. To carry out this operation it is necessary to request the special interface (see para. 1.4.6.2. "PC programming interface for systems/validators"). Connect the interface to the **J4** connector of the Aeterna Base board and to the PC. Download the last release of EasyCoinProfit from the website and install it, set the correct serial port, choose the nation, the model and start programming.
For further information see the on-line help of the EasyCoinProfit software.

3.4.3.2. Model update by Maxi Programmer

The update of the model present in the Base board can be carried out by using the Maxi Programmer too. Connect the "Maxi Programmer harness for TP606 ccTalk and PROFIT Validator" to the **J4** connector of the Aeterna Base board. Switch on the Maxi Programmer, choose the update to be carried out and press the START key.
For further information see the documentation supplied with the Maxi Programmer.

3.5. Executive communication between PC and Coin Mechanism

3.5.1. Management of Executive protocol to PC

The connection between **PC** (COM port) **and Coin Mechanism** (9-ways Molex connector) occurs by means of the EXE-RS232 Interface for Systems and Change-giver. The proper libraries of command implementation of the Executive protocol to PC are available on request by contacting Coges Customer Service (see para. 1.4.5. "EXE-RS232 Interface for Systems and Change-giver").

3.5.2. Codes necessary for starting

The functions described in the table here below are set with default data at purchase time. Each of these functions must be checked and customized with suitable values.

PROGRAMMING	REFERENCE CODE
Decimal point	5 Account Param. (5.4 = Decimals)
Base Step	5 Account Param. (5.5 = Base Step)
Single sale or multisale	6 Running Mode (6.5.1 = Key Sale 6.5.2 = Cash Sale)
Price setting	8 Price Setup (only if 6.2 = Price Holding or Cost by Price)

Chapter 4

4. Cleaning and maintenance

4.1. Cleaning the Validator/Separator Group

The coin recognition occurs at best when the sliding speed of the coins through the channel is in conformity with some defined tolerances. The presence of dust, foreign bodies and dirt can slow down the coins and hold up the success of the operation.

4.1.1. Cleaning the sliding channel

In order to guarantee the good operation of the Validator/Separator group it is necessary to keep the coin sliding channel cleaned.

- Lift the moving wall of the Validator/ Separator group and clean accurately the sliding channel with a paper cloth soaked with detergent (clean the fixed and the moving walls);

fig. 38

    1 = moving wall;
    2 = fixed wall.

- dry carefully by using compressed air.
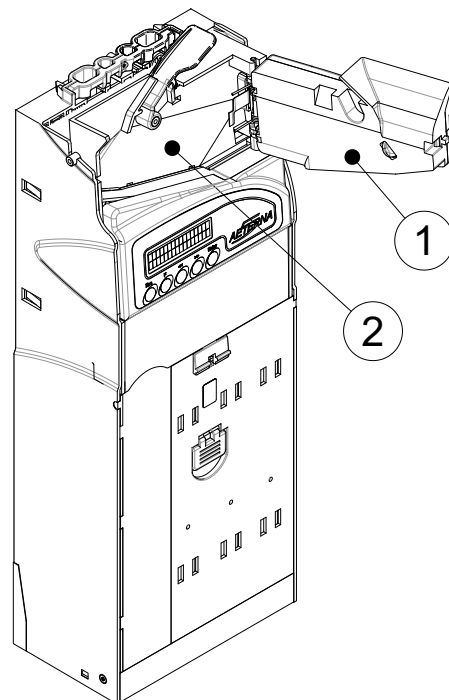
✋ *Do not use silicone spray or other products to improve the coin sliding; do not use lubricant oil on the moving parts of the Validator/ Separator group.*

4.1.2. Cleaning the plastic parts

The coin passage inside the Coin Mechanism leaves some waste which periodically should be removed. To carry out the cleaning it is necessary to remove the tube box (see para. 2.1.4. "Configuration of the tube box") and remove the conveyor by acting on the side clips.
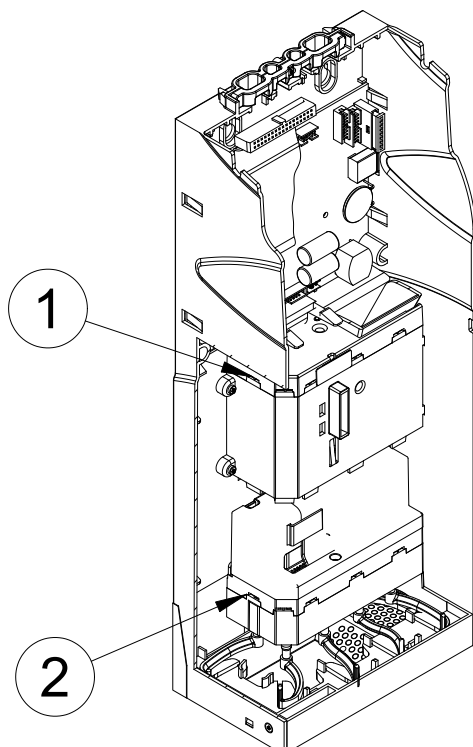
fig. 39

1 = Fastening clip for conveyor
2 = Coin conveyor

The tube box and the conveyor are both made of plastic materials and can be cleaned by soaking them in water and detergent. Rinse the parts carefully by using plenty of running water.
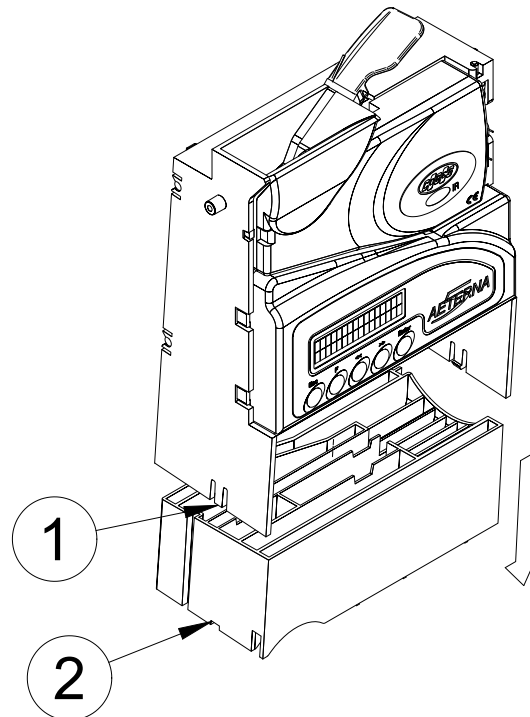
4.1.3. Cleaning the photocells and the tube box

To maintain the perfect transparency in front of the photocells for controlling the coin level inside the tubes, it is necessary to carry out a periodical cleaning. Remove the tube box, manually empty the coins from the tube box from the coins and use some compressed air to remove some dust particles or other material both in the tube box and the control holes of the photocells.

Do not use abrasive products for cleaning the Coin Mechanism (see para. 5. "Warnings").

For each level there are 5 photocells, three for each tube, which are placed in correspondence of the holes for controlling the coin level inside the tubes (see para. 1.3.6. "Tube Group").

fig. 40

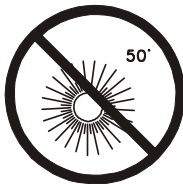1 = Upper photocells
2 = Middle photocells
3 = Lower photocells

Load **manually** the coins inside the tube box and place the box in the Coin Mechanism again (see para. 2.1.6. "First loading").
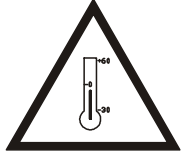
Chapter 5

5. Warnings

⚠️ *We kindly ask you to pay attention to the following points in order to ensure the integrity and the full functionality of your Aeterna Change Giver Coin Mechanism.*

Avoid direct sunlight and anyway do not expose the appliance to temperatures higher than 50 centigrade degrees.

Temperatures below zero centigrade degrees may compromise the good operation of the device.
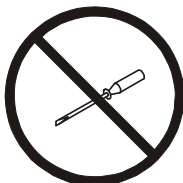
Keep the appliance out of dust.

Do not leave the appliance in very wet places.

Avoid any contact with liquids. Do not use solvents, petrol or other volatile agents to clean the Coin Mechanism.

Do not try to disassemble or repair the appliance. The manufacturer is not responsible for possible damages caused by operations carried out by unskilled personnel.

Do not use silicone sprays or other substances to improve the sliding of the coins.

Do not use lubricating oil on the movable parts of the Coin Validator.

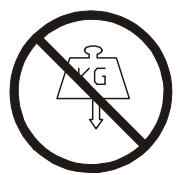Use exclusively not corrosive detergents for cleaning operations.

The flat batteries present on the device are not household waste; therefore they shall be handled according to the laws in force.

Clean frequently the sliding channel of the coins with compressed air.

Do not let the appliance fall down and make sure that it does not undergo strong impacts.

Do not put heavy objects on the appliance.

Enclosure: Aeterna Executive - BDV - Electromechanical VM Menu - release 2.7

Legend
($) Operator
(!) Technician
(■) User

1 Tube Counters [$! ■]
1.1 Set Quantity
1.2 Preset Amount
1.3 Manual Recharge
1.4 Reset All

2 Diagnostics [$! ■]
2.1 Firmware Rel.
2.2 Tube Unit
2.2.1 Manual Distrib.
2.2.2 Sequential Dis
2.2.3-7 Empty Tube 1-5
2.2.8 Empty Tubes
2.2.9 Tube Photocells
2.2.10 Upper Photocells
2.2.12 Lower Photocells
2.3 Coin Validator
2.3.1 Firmware Rel.
2.4 Key Parameter
2.4.1 Key Credit
2.4.2 Serial Number

3 Totals [$]
3.1 Partial Totals
3.1.1 Total Takings
3.1.1.1 Total Takings
3.1.1.2 Pieces
3.1.1.3 Coin Takings
3.1.1.3.1 Value
3.1.1.3.2 Pieces
3.1.1.4 Bill Takings
3.1.1.4.1 Value
3.1.1.4.2 Pieces
3.1.2 Tube Takings
3.1.2.1 Real Value
3.1.2.2 Pieces
3.1.2.3 Total Value
3.1.2.4 Manual Charge
3.1.2.5-9 Taking Tube 1-5
3.1.2.5-9.1 Value
3.1.2.5-9.2 Pieces
3.1.2.5-9.3 Total Value
3.1.2.5-9.4 Manual Charge
3.1.2.5-9.5 Correction
3.1.3 Total Sold
3.1.3.1 Cash Sale
3.1.3.2 No. Sales
3.1.3.3 Sold by Key
3.1.3.3.1 Sold by Key 1
3.1.3.5 Sold in EA
3.1.3.6-15 Line 1-10
3.1.3.6-15.1 Cash Sale
3.1.3.6-15.2 No. Cash Sale
3.1.3.6-15.3 Key Sale
3.1.3.6-15.4 No. Key Sale
3.1.4 Distributed
3.1.4.1 Value Given
3.1.4.2 Coins Given
3.1.4.3 Manual Unload
3.1.4.4-8 Distr. by Tube 1-5
3.1.4.4-8.1 Value Given
3.1.4.4-8.2 Coins Given
3.1.4.4-8.3 Manual Unload
3.1.5 Total Recharge
3.1.5.1 Key Recharge
3.1.5.1.1 Key Recharge 1
3.1.6 Without Sale
3.1.6.1 Overprice
3.1.6.2 Not Sold
3.2 Cumulated Totals (see submenu 3.1)
3.3 Partial Delete   [NO]

4 Security [$]
4.1 Operator PIN   [0000]
4.2 User PIN   [0000]
4.3 Technician PIN   [0000]
4.4 Totals PIN   [0000]

5 Account Param. [$]
5.1 Max Cash Cred.   [3,00]
5.2 Max Key Credit   [15,00]
5.3 Max. Distrib.   [3,00]
5.4 Decimals   [2]
5.5 Base Step   [1]

6 Running Mode [$! ■]
6.1 Protocol   [ExecutiveMaster / BDV Master]
6.2 Prices Manag.   [Prices in VMC]
6.3 Prices Display
6.3.2 Machine Prices
6.3.3 Compatibility   [NO]
6.5 Sale   [Multisale]
6.5.1 Key Sale
6.5.2 Cash Sale   [Single Sale]
6.6 Exact Amount
6.6.1-5 TubeExactAmount1-5   [0]
6.6.6 Select. Inhibit   [NO]
6.6.7 Sale at EA   [NO]
6.6.8 Limit for EA   [0,00]
6.6.9 Reference Tube   [None]
6.7 Change Manag.   [After Sale]
6.8 Sale Max Time   [70]
6.9 Credit Max Time   [5]

7 General [$!]
7.1 Language   [Italiano]
7.3 Currency Displ.   [YES]
7.6 MDBCurrency Code   [1978]

8 Price Setup [$!]
8.1-50 Price Line 1-50
8.1-50.1 Cash Price   [59,99]
8.1-50.2 Price Key   [59,99]

9 Bill Setup [$!]
9.0 Bill Validator   [MDB always enab.]
9.1 Bill 1   [5,00]
9.2 Bill 2   [10,00]
9.3-16 Bill 3-16   [0,00]

10 Reading Setup [$]
10.2 Credit Reading   [Real Tubes]
10.3 Recording Device
10.3.1 Device   [None]
10.3.2 IRDA Password   [00000000]
10.3.3 Automatic Delete   [NO]
10.3.5 Baud Rate   [2400]
10.3.7 Printer Rec.   [Partial]
10.12 Audit Executive   [Not Active]

Note: menu item 10.12 only Executive

11 Key Setup [$]
11.1 Machine Code   [00000000]
11.6 Credit Limit
11.6.1 Limit Value   [30,00]
11.19 Recharge Key   [Automatic Change]
11.19.1 Mode
11.19.2 Key Ser.No. List
11.19.2.1 Delete
11.19.2.2-11 Key No. 1-10   [NO]

12 Tube Setup [$]
12.8-12 Setup Tube 1-5
12.8-12.1 Max. Limit
12.8-12.2 Tube Block

13 Coin Setup [$!]
13.1-60 Coin No. 1-60
13.1-60.1 Sent Values
13.1-60.2 Coin Security
13.1-60.3 Destination
13.1-60.4 Set Value
13.1-60.5 Compare
13.1-60.6 Acquire
13.1-60.9 Token
13.1-60.10 Fake
13.1-60.11 Security Level
13.1-60.12 Overflow Level
13.1-60.13 Min. Photocell
13.1-60.15 Max. Photocell
13.1-60.16 Description
13.61 Coin Read
13.62 Validator Step

14 Default [$!]   [0000]

Enclosure: Aeterna MDB Menu - release 2.7

Legend
($) Operator
(!) Technician
(■) User

1 Tube Counters [$! ■]
1.1 Set Quantity
1.2 Preset Amount
1.3 Manual Recharge
1.4 Reset All

2 Diagnostics [$! ■]
2.1 Firmware Rel.
2.2 Tube Unit
2.2.1 Manual Distrib.
2.2.2 Sequential Dis
2.2.3 Empty Tube 1
2.2.4 Empty Tube 2
2.2.5 Empty Tube 3
2.2.6 Empty Tube 4
2.2.7 Empty Tube 5
2.2.8 Empty Tubes
2.2.9 Tube Photocells
2.2.10 Upper Photocells
2.2.12 Lower Photocells
2.3 Coin Validator
2.3.1 Firmware Rel.

3 Totals [$]
3.1 Partial Totals
3.1.1 Total Takings
3.1.1.1 Total Takings
3.1.1.2 Pieces
3.1.1.3 Coin Takings
3.1.1.3.1 Value
3.1.1.3.2 Pieces
3.1.2 Tube Takings
3.1.2.1 Real Value
3.1.2.2 Pieces
3.1.2.3 Total Value
3.1.2.4 Manual Charge
3.1.2.5-9 Taking Tube 1-5
3.1.2.5-9.1 Value
3.1.2.5-9.2 Pieces
3.1.2.5-9.3 Total Value
3.1.2.5-9.4 Manual Charge
3.1.2.5-9.5 Correction
3.1.4 Distributed
3.1.4.1 Value Given
3.1.4.2 Coins Given
3.1.4.3 Manual Unload
3.1.4.4-8 Distr. by Tube 1-5
3.1.4.4-8.1 Value Given
3.1.4.4-8.2 Coins Given
3.1.4.4-8.3 Manual Unload
3.2 Cumulated Totals (see submenu 3.1)

4 Security [$]
4.1 Operator PIN   [0000]
4.2 User PIN   [0000]
4.3 Technician PIN   [0000]
4.4 Totals PIN   [0000]

5 Account Param. [$]
5.4 Decimals   [2]
5.5 Base Step   [1]

6 Running Mode [$!]
6.1 Protocol   [MDB Slave]
6.7 Change Manag.   [vmc]
6.15 MDB Setup
6.15.7 Status MDB   [Standard]

7 General [$!]
7.1 Language   [Italiano]
7.6 MDBCurrency Code   [1978]

11 Key Setup [$]
11.1 Machine Code   [00000000]

12 Tube Setup [$]
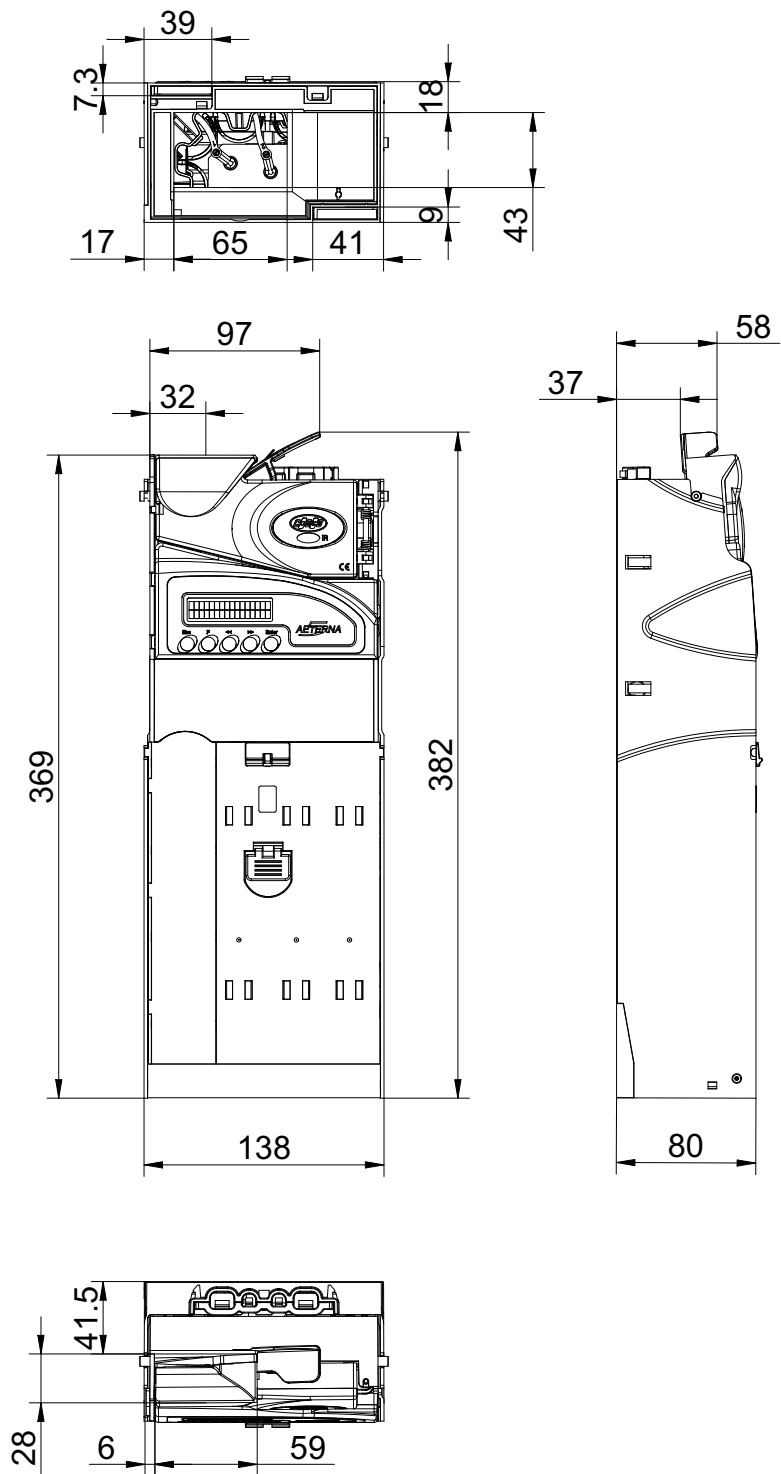**12.8-12** Setup Tube 1-5
12.8-12.1 Max. Limit
12.8-12.2 Tube Block

13 Coin Setup [$!]
13.1-60 Coin No. 1-60
13.1-60.1 Sent Values
13.1-60.2 Coin Security
13.1-60.3 Destination
13.1-60.4 Set Value
13.1-60.5 Compare
13.1-60.6 Acquire
13.1-60.9 Token
13.1-60.10 Fake
13.1-60.11 Security Level
13.1-60.12 Overflow Level
13.1-60.13 Min. Photocell
13.1-60.15 Max. Photocell
13.1-60.16 Description
13.61 Coin Read
13.62 Validator Step

14 Default [$!]   [0000]

Appendix

✎ *Note: all the measures of the drawing are quoted in mm.*