INGLES - ENGLISH

Jofemar

BLOCK OF EXCHANGEABLE TUBES

GUIDE MANUAL

☞ # <u>WARNING</u>

<u>Read these instructions carefully before installing the compact</u>:

- ⓘ **Before connecting**, make sure the voltage is correct.

- ⓘ **Consult appendix 5** of this manual to install the compact.

- **We recommend** you to read this instruction manual before connecting the compact.

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MNP11M01GB06   May 2007- Rev.4   Page: 2 de 40

INDEX:

1- WORKING CONDITION.

The compact can work between   0 ⁰C up to 60 ⁰C.

2- SYMBOL OF THE INSTRUCTION MANUAL.

ⓘ This symbol indicates that there are more information in another point of this manual.

Ⓟ This symbol is in reference with programming.

☞ This symbol notices that the text is very important.

✕ This symbol notices that there isn´t to place   something material in rubbish.

♺ This symbol indicates recyclable material.

3.- INTRODUCTION TO MODEL J-2000.
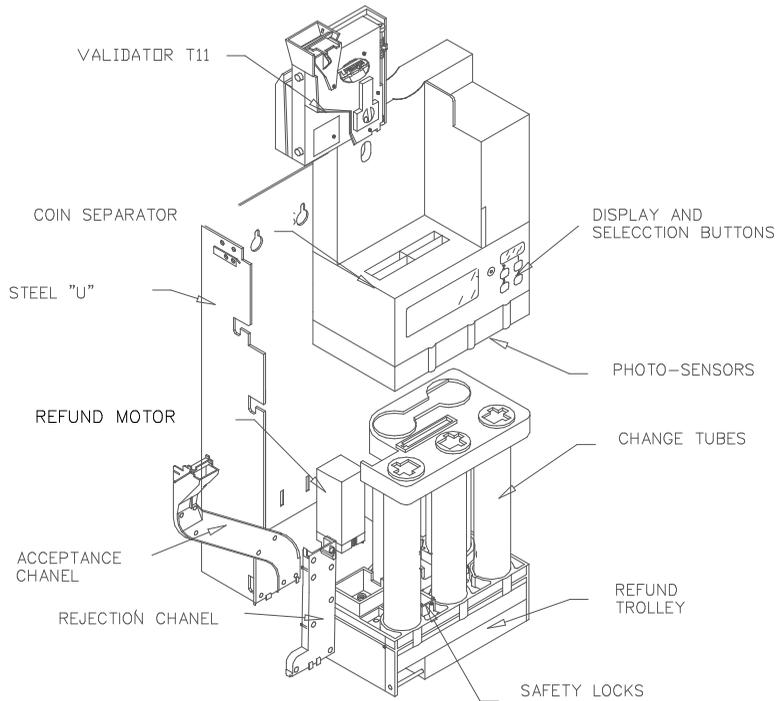
The J-2000 validation group is an integrated system made up of an electronic coin validator and a refund system for automatic vending machines with MDB or Executive protocol. It consists of a electronic coin validator model T10, a 5 routes coin separator and five self loading change tubes.

Its water protection system allows it to run in a hard environment.

This compact has also the possibility to dump the count data to a serial printer or reprogram some of its options with the help of a PC computer.

T10 Validator.

The T10 is an electronic validator that can identify up to 15 coins or tokens. It has a built in separating system with a coil that rejects or accepts the coins. It is powered by 12VDC through a connector to the control board.

Coin separator

This subsystem permits the routing of accepted coins by the T10 validator to reload the five change tubes or the coin deposit. It has photo-sensors in the bottom to make coin acceptance faster and detect coin jams in the top of change tubes.

Refund slide:

This is the system that makes it possible to extract coins from the bottom of each change tube by a claw. It also has two safety locks to avoid the accidental falling of the coin in the tubes.

☞ ### *Installation of the compact*

Verify that the compact is installed vertically and that the refund lever of the validator is not activated by the lever of the machine.

Connect power to the compact. Verify that the coins programmed on   address 22 correspond with the size of the tubes. Verify too if the protocol programmed on address 65 it is correct. If the communication is running correctly you can see the points of the interior display flashing.

Introduce at least three coins in each tube through address 25, as indicated on page 18 of this manual.

Introduce a coin and carry out a purchase (repeat this process with different coins and channels of the machine).

Unload coins from the tubes (address 26) and verify that they fall correctly into the refund drawer.

Cleaning of the validator.

Periodical cleaning of the walls and ramps of the validator, where the coins circulate, with a rag or damp cloth is recommended.

Coin jams and tube replacement:
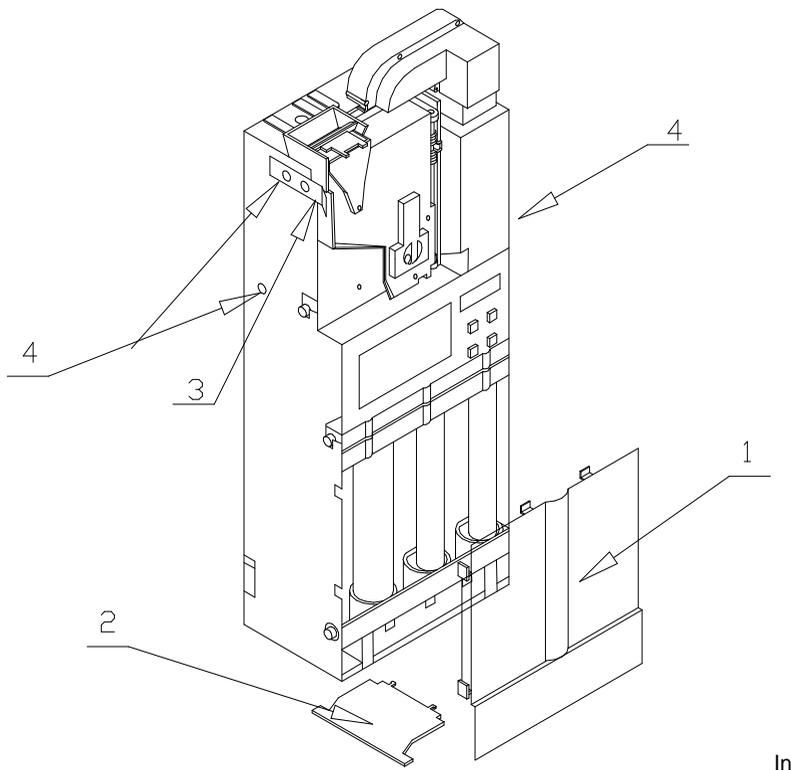
In order to disassemble the compact follow the next steps:
- Unload completely the coins in the tubes.
- Disengage the front protector (1).
- Unscrew the coin deflector (2).
- Take off the coin validator lifting the clip placed on the left of the validator (3).
- Unscrew the three screws placed in the validator clip on the sides of the steel U.
When you have done this, put the compact laying on a horizontal surface and then lift up the steel U as indicated on the figure. Then move the separator and display block laterally to reach the tubes.

④
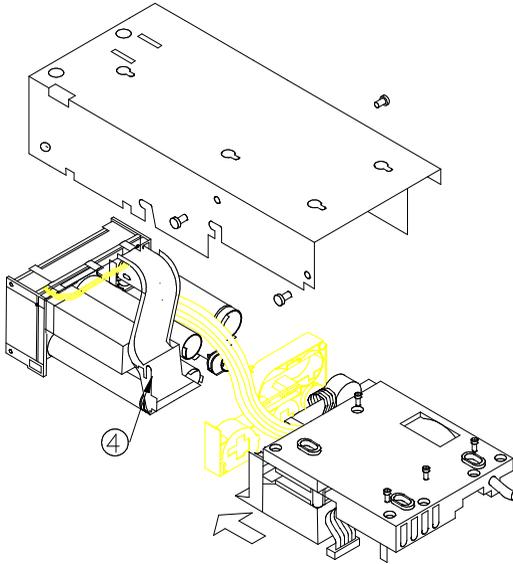
When you have made any changes , reassemble the compact in the reverse order, making sure you pass the flat cable of the slide through the plastic guide (4).

☞ *Updating the program:*

IN COMPACT WITHOUT FLASH MEMORY:
If it is necessary to update the program to a new version you have to replace the EPROM chip present in the control card. To do this you must move away the steel U, as is indicate in the previous figure. Then carry out the next steps:
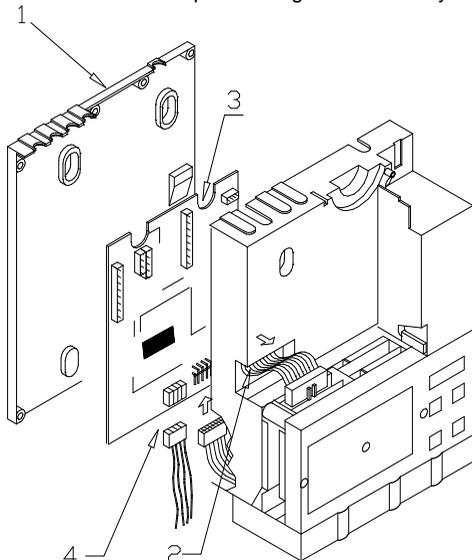
- Remove the screws that attach the water protection cover. (1)
- Disconnect the flat cable that joins the control board to the display board.
- Uncouple the flat cable of T10 validator (2).
- Then you can see the components side of the control card, where you can replace the EPROM chip with the help of a flat screwdriver .
Before replacing the water protection cover check connecting the flat cable of the display and extracting the validator flat cable (2).

- IN COMPACT WITH FLASH TECNOLOGY:

• RECORDING FROM PC:

To recording the programme from PC it is neccessary to have the next components:

■ Comunication cable RS-232, cod: 8800756.
■ Recording programme memory flash: REPROYYXX.EXE.

1.- To connect the cable comunications RS-232 to the output RS-232 from de compact.

2.- To do the next steps:

a) To copy the programme that We want to record in the subdirectory \ J2000 of the directory where is the programme REPROYYXX.EXE.

b) Execute the programme REPROYYXX.EXE (YY letter mean the language and XX mean the version). Enter in option FLASH-GRABAR-J2000, choose the programme to record with extension H00, the other programme with extension H01 will be loaded automatically.

3.- To connect supply to the compact from the machine.

4.- When the recording had finished in the screen of the computer appears J2000 RECORDING.

- RECORDING FRON THE CARD READER:

To recording the programme from the card reader it is neccessary to have the next components:

* Recording card of 128 K, cod : 8590052.
* Tabletop card reader with the current version

1.- To copy the programme of extension H00 and H01 in the subdirectory   \ j2000 in the directory where is the programe REPROYYXX.EXE.

2.- To load in the card the programe to be recorded, to do this execute the programe REPROYYXX.EXE and in the menu choose TARJETA-GRABAR-J2000, and choose the programe to be loaded.

3.- To connect the card reader to the compact.

4.- Introduce the card in the card reader.

5.- To connect the compact to supply.

6.- To begin the recording, and the two leds of the card reader will be switch off and switch on alternately. When the red led is switch on only, the programming has finished.

Using the selection buttons and the programming display.

The J-2000 compact has two operating modes, the coin acceptance and refund mode and the program mode. In the first the compact is ready for the machine to carry out sales (sell mode), in the second the operating options of the J-2000 can be modified (program mode).
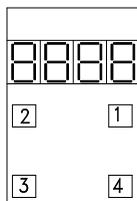
This compact has a 4 digit display and 4 selection buttons integrated in the separator block, which allow the selection and visualisation of the different addresses and their contents.

In sell mode the decimal points of status (thousands and hundreds) that light alternately permitting the visualisation of the dynamic status of the J-2000.

- OFF: The J2000 is not receiving power.
- EITHER ONE LIT: The J-2000 is receiving power but the VMC is not communicating with it.
- ALTERNATING: The VMC is communicating.

In sell mode the alternately flashing of the points of status of thousands, hundreds and tens tell of the state of the communication between the J-2000 and the machine.
✷ One point flashing at the thousands indicates that the compact is tracing the peripherals.
✷ One point flashing at the hundreds indicates that the compact is tracing the coin validator.
✻ One point at tens indicates that the compact is sending the credit command.

The digit 2 tell us about the state of the sale.
1: Selection detected.
2: Waiting for the end of the sale cycle.
3: Recording the sale.

In either communication protocols, when a coin was introduced or the escrow button was pressed, the internal display will show this information in the hundreds:
0   Acceptance inhibited.
1   Refund asked for or refunding change.
2   Coin not recognised.
3   Coin accepted.
6   Coins jammed in the selector.
9   Synchronisation error.

The indication for coins rejected by inhibition (code "0" during the acceptance) distinguishes between VMC and J-2000 inhibitions. Codes for each one are as follow:
- "0": Coin has been inhibited by the VMC.
- "-0.": Coin has been inhibited by the J-2000.

The indication for coins rejected by inhibition (code "0" during the acceptance) distinguishes between VMC and J-2000 inhibitions. Codes for each one are as follow:
0 (fixed) Acceptance of coins inhibited by the machine.
0 (flashing) Acceptance inhibited by the control board.

Selection button "1" is used to enter the programming mode and to select the address that you wish to consult or modify. If maintained pressed, the addresses change in an inverse direction
Selection button "4" is used to return to the sale mode. In the case that it is not pressed the J-2000 returns automatically to the sale mode after one minute from the last action carried out.
Selection buttons "2" and "3" allow you to visualise and modify the contents of the programming addresses.

Self- check:

Each time that you return to sale mode from program mode, or when the compact is turned on, a self check procedure is started. If an error is detected the display will show the errors detected during 3 seconds, as a sequence of 1 2 of 3 depending the problem that is producing this error.

| Thousands | Hundreds | Tens | Units |
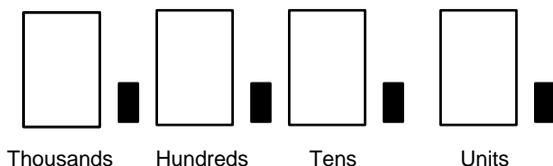
Self - check 1: ⓘ

1: At units indicates that a coil in the coin separator is broken. The number of the coil broken will appear in the address 1_27.
1: At tens a claw of the refund trolley is broken. The number of the tube broken will appear in the address 2_27.
1: At hundreds a photo-sensor of the coin separator is covered. It's possible to know which at the address 3_27.
1: At thousands there is a error in the coin validator. The code of the error will appear on the address 4_27.

Self - check 2: ⓘ

2: At units the motor of the refund trolley is broken or has had a jam. To clear the error go into the address 5_27.
2: At tens the escrow motor is broken. To clear the error go into address 6_27.
2: At hundreds a coin has gone to a wrong tube. To clear the error go into the address 7_27.
2: At thousands a coil of the safety locks was unplugged. To clear the error go into the address 8_27.

Self - check 3: ⓘ

3: At units shows that prices are unprogrammed.
3: At tens shows that there is an error in tokens values.
3: At hundreds shows that notes are unprogrammed.
3: At units shows that coins in the tubes are unprogrammed.

Self - check 4: ⓘ

4: At units shows a error in exterior tubes dispenser.

4.- PROGRAMMING ADDRESSES. ACCESS LEVELS.

Not all of the addresses of the programming mode are directly accessible, nor are they available in all models. They are divided into three access levels. To access the addresses of the second level a code must be introduced in address 50 (or address 60 if you want to get into the third level).
Some addresses will appear only when the compact is running under one of the two protocols available (MDB or Executive). To select the protocol you have to go to address 65.

EXECUTIVE: This address appears when the compact is running under Executive protocol (address 65 at 0).
MDB: This address appears when the compact is running under MDB protocol (address 65 at 1).
Some addresses can be shown at a level, but can only be modified at a greater level.

The addresses that can be accessed in the first level are the following:
101 to 199: Price programming. Ⓟ
21 : Coins in the change tubes. Ⓟ
25 : Reloading the change tubes. Ⓟ
27 : Consulting and resetting breakdowns. Ⓟ
50 : Access code to the second level. Ⓟ
68: Version of programme. Ⓟ

The addresses that can be accessed in the second level (including those that belong to the first level) are the following:
00: Maximum recovery/maximum credit.
1101 a 1199: Nº of sales of each price. Ⓟ
22 : Coin programmed in the tubes. Ⓟ
23: Other coins programmed in the tubes. Ⓟ
24 : Configuration of RS232 to the printer. Ⓟ
26 : Unloads from change tubes. Ⓟ
28 : Clock / calendar. Ⓟ
29 : Programming of maximums at tubes. Ⓟ
30 : Retention and display of prices. Mode of sale. Ⓟ
31 : Automatic unload from change tubes. Ⓟ
34 : Coins inhibited when out of sale mode. Ⓟ
35 : Number of coins to go into out of sale mode. Ⓟ
38 : Inhibition of individual coins and tokens. Ⓟ
42 : Sales with discount. Ⓟ
44 : Tokens value. Ⓟ
48 : Base currency. Ⓟ
49 : Promotion schedule. Ⓟ
51 : Checking of the validator. Ⓟ
52 : Type of protocol. Ⓟ
53 : Coin in external tubes. Ⓟ
55 : Note reader options. Ⓟ
56 : Note reader inhibitions. Ⓟ

60 : Access code to third level. Ⓟ
61 : Identification number. Ⓟ
62 : Date of manufacture. Ⓟ
63 : Country code. Ⓟ
64 : Number of connections of the compact. Ⓟ
65 : Protocol selection: MDB or Executive. Ⓟ
66: Number of prices controlled by the compact in retention mode. Ⓟ
67: Reprogramming a new coin in the compact. Ⓟ
70 a 81 : Sales counters. Ⓟ
85 : Number of sales. Ⓟ
86 : Erasing of counters. Ⓟ

PROGRAMMING ADDRESSES ACCES LEVELS

"_00" MAXIMUM REFUND / MAXIMUM CREDIT.
"1_00" The value programmed at this address represents the maximum value of which a refund is allowed.
"2_00" This value is used to establish the maximum credit that can be accumulated when is in multiple vend or the compact is in not retention mode.
To change this value the second level must be accessed. At the second level (right-hand point of the display lit), pressing "3" will indicate the value programmed. Pressing "3" again increase the digit select. Pressing "2" will select the next digit.

"-101" to "-199" PROGRAMMING PRICES
Addresses "-101" to "-199" allows the price programming of the different sale channels. When the compact is running in no prices retention mode, this address will not appear. When passing from no retention mode to retention, the prices will appear programmed with a value of 9999.
If a price is programmed to zero this indicates a free (of charge) sale.

IF NO PRICE IS DIFFERENT FROM ZERO THE COMPACT WILL NOT ACCEPT CREDIT

"1101" to "1199" Nº OF VENDS FOR EACH PRICE
When the J-2000 works in price retention, the number of sales made from each one of the prices can be consulted at these addresses. Each address has two fields:
In field 1, pressing "3" the compact will show the number of partials vends for this price.
In field 2, pressing "3" the compact will show the number of total vends for this price .
Pressing "1" the compact will return to the address.

"X_21" COINS IN CHANGERS
The number of coins stored in the tube change tubes can be consulted in this address.
By pressing "2" we can select the change tube and pressing "3" we can see the number of coins.

1_21: Nº of coins in tube 1.

.....
5_21: Nº of coins in tube 5.

If we observe that the quantity is flashing on selecting a tube, this indicates that there is a possibility that the count does not coincide with the actual number of coins in the tube.
To solve this problem, access to second level and enter in this address. Press "2" until the flashing tube is found. Pressing "3" we can see the number of coins of this tube. Pressing "3" again the compact will place the maximum number of coins in this tube. Then unload the tube in the address 26 until the count of coins become zero.
When the number of coins is desprogrammed, a error will also appear on address 9_27.
If the compact is running under MDB protocol there will be a gap of 3 coins between the number of coins showed in this address and the number of coins showed at the VMC, because the compact leaves three coins as security minimum.

"X_22" COINS PROGRAMMED INTO THE TUBES

This address has 5 fields. In this address you can program the value of the coins to fill the change tubes. Once the address is reached pressing "2" will select the number of field. Address 3_22 is related to tube 3 and so on.
If we are into the address pressing "3" will show the coin now programmed in this tube. Pressing "2" will select the coin to fill this tube.
If there are different coins with the same value, the newer will appear marked with the units decimal point.
If it is desired to program no coin in a tube, program the value "----" as the coin selected in that tube.
Before changing the coin selected to fill a tube, check you have selected the correct tube size.

"X_23" OTHER COINS INTO THE TUBES

This address is used if there are two different coins that are routed to the same tube. This address is only available in some countries. This address is programmed in the same way as address 22 is. Fields not used on this address must be programmed at a value of "----".
For example, if in one country there are two different 5 c coins and two different 10 c coins and both of them have the same physical size, you can route the coins to the tubes in the next way:

	Tube 1	Tube 2	Tube 3	Tube 4	Tube 5
Address 22:	White 5 c	White 10 c	20 C	50 C	50 C
Address 23:	Yellow 5 c	Yellow 10 c	----	----	----

"__24" RS232C OUTPUT OF SALES COUNT DATA TO THE PRINTER.

This address allows the operator of the vending machine to obtain tickets with the information of the sales counts.

Information is transmitted through the RS232C interface with a speed of 1200 or 110 baud.
The RS232C interface is connected to a 400 mm, 4 line, screened cable that has a standard 9 Pin Sub - D connector.

Printer	J-2000	Pin	Colour
RXD	TXD	2	Black
DTR	DTS	4	White
Ground	Ground	5	Yellow/Green
Power	12Vdc	9	Green

This address has 5 fields:
"0_24": Selection of a long or short ticket. For a long ticket program "0" at this address and "1" for a short ticket.
"1_24" : Selection for communication type. Programming "0", we will have communication at a speed of 1200 baud, 8 data bits and 1 stop bit. Programming "1" we will have communication at a speed of 110 baud, 7 data bits and 1 stop bit.
"2_24" : Selection of the language of the ticket. There are three available tickets:

Value	Language
0	Spanish
1	French
2	English

"3_24" : Use this address to program if the compact will test the DTR line of the printer. Programming "1" the compact will check the DTR line, and programming "0" the compact will not check the DTR line.
"4_24" : Selection of deleting partial count data after a RS232 output. Programming "1" will delete count data, and programming "0" will not delete the partial count data.

The selection of this options should be made without having the printer connected. Tickets can be obtained outside the programming mode, by simply connecting the printer.

If the address 3_24 is programmed as "1" and the DTR line is switched off, the compact will wait until the DTR line is switched on. If more than five seconds pass the transmission will be aborted.

☞   *"__25" :LOADING THE CHANGERS.*

This address allows the loading of the tube change tubes. Once the display shows that this address has been reached, it is enough to insert coins in the selector, it will only accept those destined to self load until they fill up the tubes.
If some tubes are empty the refund trolley will be placed in a middle position to avoid the edge of the coins being loaded catching in the groove of the claw causing jams.
This address also shows the value of the coins contained in the tubes.
- Pressing "2" will show the value of the money contained in the tubes.
- Pressing "3" will show the value of the money loaded through this address at the moment. If we go into and out of this address the value will be cleared.

FIRST RELOAD:
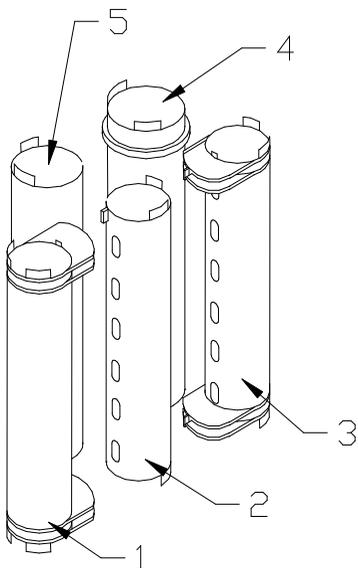
If all the tubes are totally empty, when this address is reached the refund trolley will be placed in the middle left position and the only coins accepted will be those programmed to the 2,3 and 4 tubes. Each time that the count of coins in some of these tubes amounts to 3 coins, the slide will move removing the claw of the tube.

If when the slide is moving the tubes 2,3 and 4 have at least one coin, the slide will be placed in a middle right position and the compact will then accept coins programmed in the tubes 1 and 5, moving the trolley again when any of this tubes reach a value of 3 coins.

It's strongly recommended to reload through this address when one tube is totally empty at least the 3 first coins of the tube. If you try to fill it up when the compact is in normal sale mode (or when filling through the VMC options) you can cause a jam.

Do not manually reload the tubes !!!

"__26" UNLOADING FROM CHANGERS.

If the display is showing "__26" and we press "3" the display will show "----". Pressing "2" the trolley will unload a coin from each tube.

If we are in the direction indicative and we press "2" we can see the next fields in this address:

0_26: Will program the possibility to reach address 26 directly outside of the program mode by pressing "2" "3" or "4". If this function isn't desired this option must be programmed to 0.

On programming 2 in this option will be possible to unload coins from the three first tubes directly in sale mode by pressing "2" "3" or "4":

Key	2	3	4
Tube	1	2	3

If address 0_26 is programmed to 3 it works like programmed to 1 but in these case the contest of this field can´t be changed if it isn´t in the second level of programming.

If the compact is running under the MDB protocol on programming 3 in this option the compact will omit the inhibition orders from the VMC. This allows us to unload the tubes at any moment. The compact will no give information to the VMC about the unloading of the tubes.

1_26: Consult and unload coins from tube 1. Pressing "3" the compact will show the number of coins in the tube. Each time "2" is pressed a coin will be dispensed.
.....
5_26: Consult and unload coins from tube 3.

Although its possible to do, it is not recommend to allow the compact in normal sale mode to have a tube with a number of coins less than the security level (3 coins). For this reason it is not recommended to completely unload any of the tubes.
If a tube it's totally empty it's recommended to load to the security level through address 25.

"__27" : CONSULTING AND RESETTING BREAKDOWNS
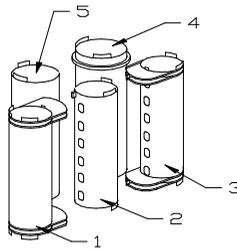
This address allows the consulting of error codes generated by the self check of the compact. To go to over the 10 fields we use the button "2". To show the value of one field we use "3".

To clear the breakdown we have to press "2" again. The value showed in the field will be the sum of the errors detected. For example, if the address 3_27 shows a 9, the photo sensors of tubes 1 and 4 will be covered. The tubes are named as follows:

The error codes showed in each field are:
1_27: Breakdown in the separator coils.
      1: Coil 1 broken.
      2: Coil 2 broken.
      4: Coil 3 broken.
      8: Coil 4 broken.
      16: Coil 5 broken
This error will be marked when a coin did not reach the tube or when the electrical connection of the coil is broken.

2_27: Breakdown in the claws of the refund trolley.
      1: Coil or claw 1 broken.
      2: Coil or claw 2 broken.
      4: Coil or claw 3 broken.
      8: Coil or claw 4 broken.
      16: Coil or claw 5 broken.
This error will also appear when:
- The coin programmed in the address 22 isn't correct.
- There is an error in the count of coins in the tube.
- There isn't a good electrical connection to the coil.
- A jam has happened when dispensing coins from this tube.
- The safety lock of this tube is broken.

3_27: Photo-sensors of the tubes are covered:
     1: Sensor of tube 1 is covered.
     2: Sensor of tube 2 is covered.
     4: Sensor of tube 3 is covered.
     8: Sensor of tube 4 is covered.
     16: Sensor of tube 5 is covered.

Errors of this address will be self cleared when the sensor is uncovered. Errors in this address are normally caused by coins jammed at the top of the tube.

4_27: Shows the sum of the error codes in the coin validator. The possible error codes are:
     1: Photo -sensor or T10 coil broken.
     2: Synchronism error.

5_27: Shows "1" if the refund motor is broken. If the compact is running under executive protocol and the refund motor is broken when a refund is being made, the compact changes to multiple vend to avoid clearing the credit that hasn't been refunded. When this error is marked, check the value of the address 2_30.

6_27: Shows "1" when a error is detected in the escrow system.

7_27: Shows the error code caused by a coin that has not followed the intended routing. The value showed is the sum of the calculated route and the detected route. The values of the tubes are:
     1: For tube 1.
     2: For tube 2.
     4: For tube 3.
     8: For tube 4.
     16: For tube 5.

8_27: This field shows the breakdowns in the coils of the safety locks of the refund trolley. If a safety lock is broken, the compact will also mark as broken the tubes controlled by the lock.
     1: Coil 1 broken-> Breakdown detected in the lock of tubes 1 and 2.
     2: Coil 2 broken-> Breakdown detected in the lock of tubes 4 and 5.
     3: Coil 1 and 2 broken-> Breakdown detected in the lock of tubes 1,2,4 and 5.

9_27: Shows error detected in the programming options of the compact:
     1: Prices are unprogrammed.
     2: Tokens are unprogrammed.
     4: Notes are unprogrammed.
     8: Programming options unprogrammed.
     16: Coins to tubes are unprogrammed.
In program mode the address that has caused the deprogramming will be shown flashing.
A_29: Shows the error in exterior tubes.
     1: Error in exterior tube number 1.
     2: Error in exterior tube number 2.

3: Error in both tubes.

"__28" : CLOCK/CALENDAR

Its function is to program the date and time that appears on the ticket from the printer and on the credit display when there is no money accumulated.
Pressing "2" we select between:

0_28 : Select clock or zero credit.
1_28 : Minutes (0 to 59)
2_28 : Hours (0 to 23)
3_28 : Day of month(vary)
4_28 : Month (1 to 12)
5_28 : Year (00 to 99)

Once one of the 5 options has been selected pressing "3" the current value is shown. Subsequent presses of "2" or "3" increase this 1 by 1 or 5 by 5 respectively. To change option or address press "1".

"__29" : PROGRAMMING MAXIMUMS

This address allows the programming of the maximum number of coins stored in each of the five changer tubes.

1_29: Maximum number of coins in tube 1.
....
5_29: Maximum number of coins in tube 5.

To program the number use the same procedure as when second level code is programmed on the address "__50".

The maximums programmed cannot exceed the maximum number of coins that fit in the tube. If is programmed a greater value, the value that is really stored is the maximum number of coins that fit in the tube.

"__30" PRICE RETENTION, PRICE DISPLAY AND VEND MODE.

This address allows you to choose if the compact shows the price of the channel when there is no credit accumulated and the customer selects a product. You can also select if the J-2000 retains the prices or they were communicated by the vending machine controller whenever a sale channel is selected.
If the J-2000 works in retention, the maximum programmable price is 9999 units of real currency.
If the prices are controlled by the machine, the maximum price programmable will be 250 units of base currency (value programmed in address __48 of the J-2000).

0_30: Selection of retention and indication of prices on the display. Possible values are:
0 : No retention and no indication of the price selected on the display.
1 : Retention and no indication of the price selected on the display.
2 : No retention but indication of the price selected on the display.
3 : Retention of the prices and prices are shown on the display.

1_30: This address determines which peripheral will be connected to the serial transmission network. The possible values are:

0: Only the machine controller (VMC).
1: The VMC and the Accountancy Unit (AU).
2: The VMC and the Card Reader (CPC).
3 : VMC, AU and CPC.
4 : VMC and the Note Reader.
5 : VMC, AU and Note Reader.
6 : VMC, Card Reader (CPC) and Note Reader.
7 : VMC, AU, CPC and Note Reader.

2_30: Sales mode:
Allows the choice of the sale mode between one of the following options:
0 : Simple sale. Refunds automatically after carrying out the sale, if there is sufficient change in the tubes. In event that there is not, the credit is cancelled.
1 : Multiple sale. Consecutive sales are carried out until the credit is used up or the recovery lever is pressed, in which case it refunds if there is sufficient change in the tubes and change value is under value of address "1_00". If there isn't enough change, leaves the remainder on display.
2 : Simple mixed sale. Refunds the remaining credit automatically after each sale, every time it is possible. If it is not the customer can carry out more purchases, until it is possible to refund the remainder credit.
4 : Simple sale with card revaluation.
5 : Multiple sale with card revaluation.
6 : Simple mixed sale with card revaluation.

3_30: Possibility of escrow
This address allows you to determine the operating of the recovery lever. On the one hand you can select if the recovery is carried out by means of the traditional mechanical lever or if a motor and selection button are used for recovery.
On the other hand you can determine if the compact is expected to refund the credit accumulated every time it is requested or if this refund is allowed only after a purchase is made.
The possible options are:
      0 : Mechanical recovery is always possible.
      1 : Mechanical recovery is inhibited until the 1st sale.
      2 : Recovery by motor is always possible.
      3 : Recovery by motor inhibited until the 1st sale.

The recovery option by motor requires the placing of a component kit on the control board and the motor in the validator.

WARNING:
If it's programmed option 0_34 to 1(sale allowed only when there is exact change) and the field 3_30 is also programmed to 1(mechanical recovery is inhibited until the 1st sale), this last option will not run, allowing the compact to refund before the 1st sale.

In the MDB protocol this address is used to program the existence of a recovery motor. Program "1" if the recovery motor is installed and a "0" if it is not.

"__31" : AUTOMATIC UNLOAD OF TUBES

This address allows to unload the tubes of the compact until a fixed coin level. To set the number of coins that will last on the compact tubes after doing a automatic unload you must program the fields "1_31" to "5_31". The default value to this option is leaving 10 coins in each tube.
To use this option press "3" on the address indicative to make the display show "----".
Then press "2" to start the automatic unload.

"__34" OUT OF CHANGE CONDITION

The compact can activate the OUT OF CHANGE condition when the possibility that it cannot return the remaining credit to the customer is very high. In this condition the J2000 can inhibit the acceptance of coins of high value and inform the customer (by means of an illuminated message) that the exact price of the product desired should be introduced.
0_34: Sets if the compact can sale without exact change.
      0: Sale allowed without exact change.
      1: Sale allowed only when there is exact change.

1_34: Coins accepted in out of change
      0: In out of change are inhibited the coins programmed on address 2_34.
      1: Compact only accepts coins routed to tubes.

2_34: Allows that when the out of change condition is activated the coins of greatest value can be inhibited. The value represents the number of coins inhibited, beginning with the coin of greatest value. The possible values are from 0 coins inhibited up to 12 coins inhibited. Not is necessary to inhibit the three tokens since they do not make the compact refund change.
A coin inhibited table for each value programmed is located in the appendix.

"__35" OUT OF CHANGE LEVEL

Use this address to program the minimum level of coins in each one of the tubes to make the compact go out from out of change.
1_35: Minimum number of coins in the tube 1.
....
5_35: Minimum number of coins in the tube 5.
This address has a default value of 9 coins.

"__38" INDIVIDUAL INHIBITION OF COINS AND TOKENS

This address has four fields and allows the inhibition of the individual acceptance of coins.
      1_38: Inhibition of coins 1 to 4.
      2_38: Inhibition of coins 5 to 8.
      3_38: Inhibition of coins 9 to 12.
      4_38: Inhibition of coins 13 to 16.

For example, if at address 3_38 14 is programmed, the compact will not accept the coins 10,11 and 12 (2+4+8). The number assigned for each coin is showed at the appendix. This number can change if the compact is running as MDB or Executive.

"__42" DISCOUNT SALES

The J-2000 allows the vending machine operator to offer the customer who uses the multiple sale, a discount on the price of the products purchased.

This is the purpose of address __42 . When the number of sales in multi sale is equal to the value programmed at address 1_42 (discount level), the quantity programmed at address 2_42 (value of the discount) is added to the credit accumulated. The moment the credit is completely used up or a discount has already been granted, the number of multi sales accumulated is reset to zero.

The way to program the value of the discount is similar to that of programming the prices (addresses x_01 to x_10).

"__44" VALUE OF PROGRAMMABLE TOKENS

The J-2000 can be programmed to accept up to three programmable tokens. The value of this tokens is programmed in the three fields of the address 44.

If 0 is programmed as the value of the token, the compact will interpret that it is a free of charge sale token, and it will not accept more credit, allowing one sale of any value. If a value between 1 and 9999 base currency units is programmed, the compact will interpret it to be a value token, adding the value programmed to the system credit. Nevertheless the J-2000 will not refund any change from money introduced as value tokens.

"__48" BASE CURRENCY

Use this address to program the value of the base currency. The way to program it is the same used in the address "__50".

"__49" SCHEDULED PROMOTION

(WHEN THE COMPACT WORKS IN PRICES HOLDING)

0_49 : Possibility of scheduled promotion.

        0: Not using scheduled promotion.

        1: Activates this option.

1_49 : Doesn´t use in holding prices

2_49 : Doesn´t use in holding prices

3_49 : Promotion start time (from 0 to 23 h).

4_49 : Promotion end time (from 0 to 23h).

If 0_49 = 0 there isn´t promotion programmmed, so it isn´t possibble to make discounts. If 0_49 = 1 there is promotion, and now there are two banks of prices, the bank 1 are prices without discounts and the bank 2 are prices with discounts. If 0_49 = 1 and all credit is from card gets the price from bank number 2, independent of the hour. If the credit is from coin, bill or token and the hour is between the hours programmed in address 1_49 and 2_49 gets the price from the bank 2, and if it isn´t between the hours of 1_49 and 2_49 gets the price from bank 1.(The bank 1 the prices can be from -101 to -149, and the bank 2 can be from -151 to -199).

(WHEN THE COMPACT DOESN´T WORK IN PRICES HOLDING)
0_49 : Possibility of scheduled promotion.
        0: Not using scheduled promotion.
        1: Activates this option.
1_49 : Discount in %
2_49 : Discount in units.
3_49 : Promotion start time (from 0 to 23 h).
4_49 : Promotion end time (from 0 to 23h).

When a discount have been programed in addresses 1_49 or 2_49 and all credit is credit from card, the discount will be calculated automatically, and doesn´t care what have been programed in addresses 0_49,3_49 and 4_49.
To carry out a discount with money, or bill it is neccessary to programe 0_49 = 1, to programe in 1_49 or 2_49 the type of discount, and in 3_49 and 4_49 the hours for the schedule promotion, when the hour of the compact will be between the hours of the address 3_49 and 4_49 the discount will be done.

"__50" ACCESS CODE FOR THE SECOND LEVEL

To access the second programming level the user must introduce the access code here. This code is a 4 digit number, introduced one by one.

Once access is obtained, the J-2000 will light the decimal point corresponding to the units. In this situation this address allows the modification of the programmed code.
In addition to this programmable code there exists a permanent code that acts as master code key. This "master" code is recorded with the coins accepted in the E2PROM memory of the control card.

INTRODUCTION OF THE CODE

Upon pressing "2" a zero in digit 4 will light up. Consecutive presses of "3" will make the digit shown increase. Once you reach the value corresponding to the 1st digit of the code, press "2". With this a zero in digit 3 will light. To introduce the other three digits of the code proceed in the same way as described for digit 4.
Once the last digit is selected, press "2", if the code is correct the decimal point corresponding to digit 1 will light up, indicating that access to the second level has been obtained.

CHANGING THE CODE

If we want to restrict the access to options of the compact (count data, coins programmed to tubes, etc.) we can program a new access code to the second level. To change the code press "3". In this moment the display will show the code programmed at present. If you wish to modify it you must press "2". The zero in digit 4 lights up again, and the new code can be introduced following the same procedure that has already been explained to obtain access to the second level.

The "master" code is found in the appendix to the manual.

This second level allows access to all the addresses of the programming level, except those that belong to the third level.

FROM THE MOMENT ACCESS IS OBTAINED TO THE 2nd LEVEL UNTIL THE PROGRAMMING MODE IS LEFT, THE DECIMAL POINT SITUATED AT THE RIGHT OF THE DISPLAY REMAINS LIT.

"__51" SELECTOR CHECK

0_51: Checking of coin recognition. Shows the route and the value of the coin accepted. If the route is a tube, the display will show a number corresponding with the sum of the values of the tubes where the coin is routed.

> Tube 1: Has a value of 1.
> Tube 2: Has a value of 2.
> Tube 3: Has a value of 4.
> Tube 4: Has a value of 8.
> Tube 5: Has a value of 16.

For example, if when a coin is accepted the display shows a 6, the coin is programmed on the tubes 2 y 3 (2+4 = 6).
If the coin will be routed to the cashbox the display will show 32.

1_51: Check of the coin acceptance. Only shows the value of the accepted coin.

"__52" TYPE OF PROTOCOL

If the compact is running under protocol MDB, two speeds of the protocol can be programmed:

> - MDB Protocol ↻ 0.
> - ICP Protocol ↻ 1.

"__53" COINS IN EXTERIOR TUBES

Use this address to program the value of the coins in the exterior tubes.
1_53: Program the value of the coin in the exterior tube 1.
2_53: Program the value of the coin in the exterior tube 2.

"__55" NOTE READER OPTIONS

0_55: Note reader type.
1_55: Value of note 1.
....
7_55: Value of note 7.

"__56" INHIBITION OF NOTES

1_56: Inhibition of notes 1 to 4.
2_56: Inhibition of notes 5 to 7.
3_56: Programming of inhibition of notes in out of change.

"__60" ACCESS CODE TO THIRD LEVEL

To access the third programming level the access code must be introduced here. To enter code do it in the same way as in address 50.

"__61" IDENTIFICATION NUMBER

A six digits identification number is programmed.

"__62" DATE OF MANUFACTURE

The month and year of manufacture is programmed. For example, if the compact was made on July of 1996 the code 0796 will appear on the display.

"__63" COUNTRY CODE

The country code can be visualised (For Spain 0034).

"__64" NUMBER OF CONEXIONS OF THE COMPACT

It shows the number of times that the J-2000 has been switched on. This counter is cleared after obtaining a RS232 ticket if address 4_24 is programmed to a value of 1.

"__65" PROTOCOL PROGRAMATION

In this address we can select if the compact is going to run under MDB or Executive protocol. Has two possible values:
>   0: The compact is going to run under Executive protocol.
>   1: The compact is going to run under MDB protocol.

If content of this address is changed, when trying to exit this address the display will show "----". Then it's necessary to switch off and on the compact and make a reset of the compact to start running the new protocol selected on this address.

"__66" NUMBER OF PRICES CONTROLLED BY THE COMPACT

This address is only shown in the third level. The content of this address selects the number of prices controlled by the compact in price retention mode. The compact can control a number between 10 and 99 prices.
When the compact is controlling a number of prices greater than 10, the addresses used to program prices and sales counts change in the next way:

Price programming:
-101-> In this address you can program the price 1.
..
-199-> In this address you can program the price 99.
Sales counts:
1201-> Partials counts of price 1.

2201-> Total counts of price 1.

....

1299-> Partial counts of price 99.

2299-> Total counts of price 99.

Pressing "2" we can select between 1201 and 2201 addresses.

"__67" RECORDING A NEW COIN IN THE COMPACT.

In this address it is possible to record a new coin in the compact. Before to record a new coin, it will be neccessary that this coin had been recorded in the validator. To record a new coin is neccessary the next steps:

1.- Go to address 0_67 push buttom 3 appears 2 lines and insert the coin in the validator, and will appear the code of the new coin.

2.- Go to address 1_67 push buttom 3 y shows the code of the coin that will be recorded.

3.- Go to address 2_67 and programme the value of the new coin, to reprogramme is like address 50.

4.- Go to address 3_67 and reprogramme the capacibility of the coin in tubes. The inhibitions are calculated automatically.

"__68" VERSION OF THE PROGRAMME.

In this address is possible to see the version of the programme, and appears in the first level programming.

"__70" a "__81" SALES COUNTS

The addresses that go from __70 to __81 allow an exhaustive control of the use of money introduced into the J-2000.

To consult the value accumulated in one of these addresses press "3". The J2000 will show the money accumulated on the display as a 7 digit number, the three highest digits first and a few seconds later the other four.

For example, if 12500 PTAs has been entered into the cashbox, the display will show 1 and two seconds later 2500.

The accumulated value is reset to zero automatically on reaching the sum of 10 million. For example, if the count is at 9999950 and it accepts a coin of 100, the count will become 50.

This addresses have two fields. Pressing "2" we can select the field, and pressing "3" see the contents.

"1_XX" : partial counts.

.....

"2_XX" : total counts.

If the compact is running under the MDB protocol only the marked (*) addresses will appear. The sales counts that the J-2000 carry out are the following:

70(*) : Money directed to interior change tubes.

71(*) : Money directed to the deposit. It does not include the tokens.

72(*): Change refunded.

73(*): Change unloaded using address x_26 and address __31.

74 : Value of over payment. The sum of the money cancelled as a result of not being able to refund due to a lack of coins, or that value tokens have been used.

75: Value sold. This is the sum of the prices of all the products which have been sold.

76 :   Value sold in out of change condition. This is that part of the total sales that were made while in out of change condition.

77 : Value of the discount. This is the total sum of the money paid to the user as discount from multi sales or scheduled promotion.

78 : Tokens. It adds up the value programmed for each value token introduced and the value of the sales accomplished with each free sale token.

79(*) : Value of the money reloaded into the tubes through address "__25"

80 : Value of the sales with card.

81 : Value of the money revalued to cards.

"__85" TOTAL NUMBER OF SALES

In this address the display will show the counter with the number of sales that the J-2000 compact has made. This address has two fields:

1_85: Partial number of sales.

2_85: Total number of sales.

"__86" CLEARING SALES COUNTS

This address is only shown in the third level. With the "2" button we can select field 1 or 2.

Selecting address 1_86 and pressing "3" we will clear the partial sales counts. After clearing, the display will show 0000 during half a second.

Selecting address 2_86 and pressing "3" we will clear the total sales counts. Clearing total counts implies clearing partial counts. After clearing, the display will show 0000 during half a second.

The user can't clear counts one by one. They have to be cleared all together.

5- TECHNICAL CHARACTERISTICS

☞

|	
Size:	353 x 137 x 82 mm
Weight:	2,8 kg.
Steady supply current:	150 mA.
Peak supply current:	4 A.
Power supply range:	D.C. between 18,5 y 45 V
	A.C. 24 V.

Programming summary:

MDB	EX	
	2	00: Maximum refund / maximum credit. ⓘ
	2	01 a 10: Price programming. ⓘ
	2	11 a 20: Nº of sales of each price. ⓘ
1	**1**	21 : Number of coins in the changers. ⓘ
2	**3**	22 : Coins programmed to tubes. ⓘ
2	**3**	23 : Other coins programmed to tubes. ⓘ
2	**2**	24 : Data outlet RS232C. ⓘ
1	**1**	25 : Reload the change tubes. ⓘ
2	**2**	26 : Unload the change tubes. ⓘ
1	**1**	27 : Reset breakdowns. ⓘ
2	**1**	28 : Clock /calendar. ⓘ
2	**2**	29 : Level of tube maximums. ⓘ
2	**2**	30 : Prices. Retention and display. Sale mode. ⓘ
2	**2**	31 : Automatic unload from change tubes. ⓘ
	2	34 : Inhibited coins when out of change. ⓘ
	2	35 : Out of change level. ⓘ
2	**2**	38 : Inhibited coins. ⓘ
	2	42 : Discount sales. ⓘ
	2	44 : Value of tokens. ⓘ
2	**2**	48 : Base currency. ⓘ
	2	49 : Scheduled promotion. ⓘ
1	**1**	50 : Access code to second level. ⓘ
2	**2**	51 : Selector check. ⓘ
2		52 : Protocol speed selection (MDB-ICP). ⓘ
	2	53 : Coins in exterior tubes. ⓘ
	2	55 : Note reader options. ⓘ
	2	56 : Note inhibitions. ⓘ
	2	60 : Access code to third level. ⓘ
2	**3**	61 : Identification number. ⓘ
2	**3**	62 : Fabrication serial number. ⓘ
2		63: Country code. ⓘ
	3	64 : Number of times has been switched on. ⓘ
2	**3**	65 : Protocol programming. ⓘ
	3	66 : Number of prices controlled by the compact. ⓘ
2	**3**	67: Recording a new coin in the compact ⓘ
		68: Version of the programme. ⓘ
2	**3**	70 a 81 : Sales counts. ⓘ
	3	85 : Number of vends. ⓘ
2	**3**	86 : Sales counts and number of vends clearing. ⓘ

Connections for the executive protocol

MOLEX 1991-15P Connector.

Nº	Colour	Function
1	Brown	Active.
2	Blue	Neutral.
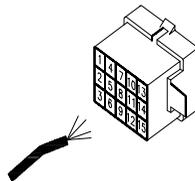
MOLEX 1625-9P Connector.

Nº	Colour	Function
1	Red	TX1
2	Green	TX2
3	White	RX1
4	Grey	RX2
9	Grey	Shield

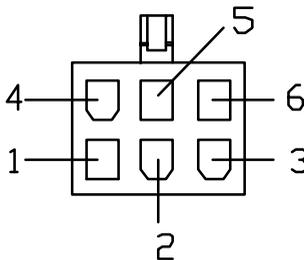*MDB connections:*

The connections between the J-2000 compact and the VMC is made through a MOLEX 39-01-2060 connector.

The connections are

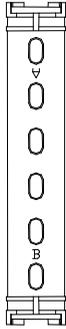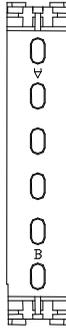| N1	Colour	Function
1	Blue	Vcc
2	Black	Ground
3	—	n.c.
4	Pink	Master RXD
5	Green	Master TXD
6	Violet	Common RXD/TXD

FRONT VIEW

☞ **Sizes of available tubes.**
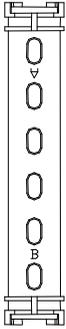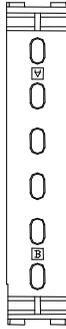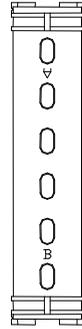
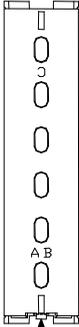| T7010072	T7010073	T7010074	T7010098	T7010075	T7010097
TUBE Ø17	TUBE Ø19	TUBE Ø21	TUBE Ø22.2	TUBE Ø23.5	TUBE Ø24.7
MON.>15<=16.2	MON.>16.2<=18.2	MON.>18.2<=20.2	MON.>20.2<=21.4	MON.>21.4<=22.7	MON.>22.7<=23.9
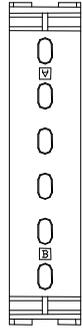
Position A down: Coins with ticknes between 1.2mm and 1.7mm
Position B down: Coins with ticknes between 1.7mm and 2.3mm
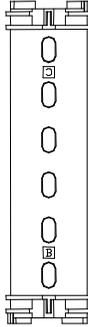Position C down: Coins with ticknes between 2.3mm and 3.1mm
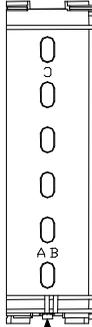
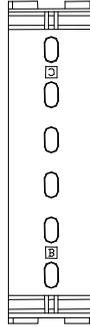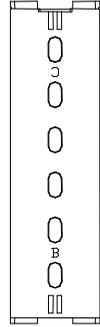| T7010076	T7010099	T7010061	T7010077	T7010062	T7010078
TUBE Ø26	TUBE Ø26.8	TUBE Ø27.5	TUBE Ø29	TUBE Ø30.5	TUBE Ø32
MON.>23.9<=25.2	MON.>25.2<=26	MON.>25.2<=26.7	MON.>26.7<=28.2	MON.>28.2<=29.7	MON.>29.7<=31.2

To place in the B position cut as indicated

ADAPTATION RINGS FOR 4 AND 5 POSITIONS

T7030129
TOP RING
Ø22.2 ,Ø23.5 ,Ø24.7
AND Ø26 TUBES

T7030130
BOTTOM RING
Ø22.2 ,Ø23.5 ,Ø24.7
AND Ø26 TUBES

T7030133
TOP RING
Ø21,Ø19 AND Ø17 TUBES

T7030134
BOTTOM RING
Ø21,Ø19 AND Ø17 TUBES

To fit the tube in positions 4 and 5
you must use a top ring and a bottom
ring.

To fit the tube in positions 4 and 5
you must use a top ring and a bottom
ring.

TUBE POSITIONING INTO COMPACT

POSITION 5   POSITION 4

TUBE Ø17
TUBE Ø19
TUBE Ø21
TUBE Ø22.2
TUBE Ø23.5
TUBE Ø24.7
TUBE Ø26
TUBE Ø27.5
TUBE Ø29

TUBE Ø21
TUBE Ø22.2
TUBE Ø23.5
TUBE Ø24.7
TUBE Ø26
TUBE Ø27.5
TUBE Ø29
TUBE Ø30.5
TUBE Ø32

TUBE Ø17
TUBE Ø19
TUBE Ø21
TUBE Ø22.2
TUBE Ø23.5
TUBE Ø24.7
TUBE Ø26
TUBE Ø26.8

TUBE Ø17
TUBE Ø19
TUBE Ø21
TUBE Ø22.2
TUBE Ø23.5
TUBE Ø24.7
TUBE Ø26
TUBE Ø26.8

TUBE Ø17
TUBE Ø19
TUBE Ø21
TUBE Ø22.2

POSITION 1   POSITION 2   POSITION 3

When the Ø17 and Ø19
tubes were placed in positions
1,2 and 3 you must place this
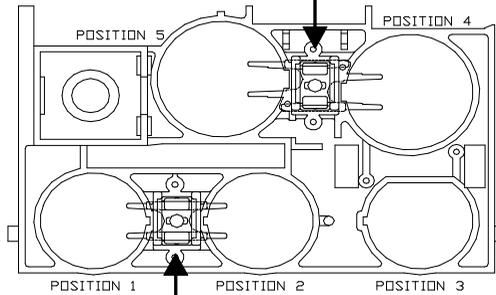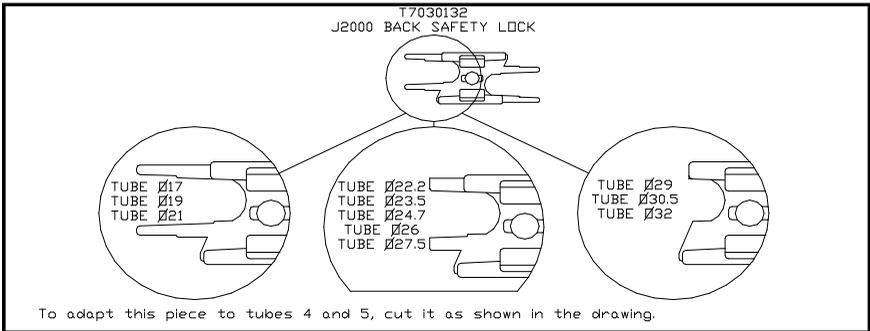piece in the top of the tube:

T7030128
Ø17 and Ø19 tube suplement

It is possible to
fit coins with a maximal
size of Ø21 mm in the
position 3 .

- Place the smallest tubes in the positions 1, 2 and 3.
- Tubes to be placed in positions 1, 2 and 3, place the greatest in the position 1 and the smallest in the position 3.
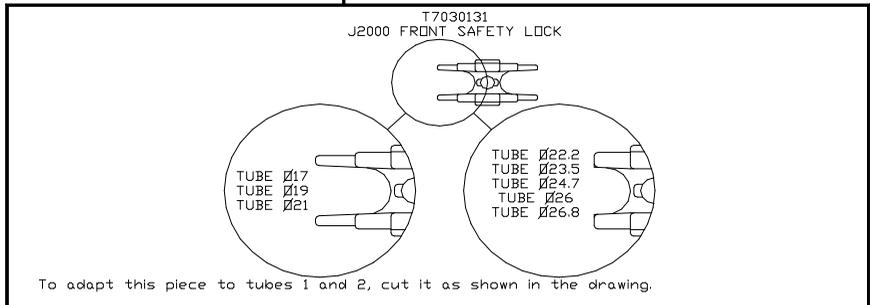
☞ **Safety locks size.**

```
                    T7030132
            J2000 BACK SAFETY LOCK
```

TUBE Ø17
TUBE Ø19
TUBE Ø21

TUBE Ø22.2
TUBE Ø23.5
TUBE Ø24.7
TUBE Ø26
TUBE Ø27.5

TUBE Ø29
TUBE Ø30.5
TUBE Ø32

To adapt this piece to tubes 4 and 5, cut it as shown in the drawing.

POSITION 5   POSITION 4

WARNING
   After placing the
tubes and the safety
locks test that locks
go up and down without
problems.

POSITION 1   POSITION 2   POSITION 3

```
                    T7030131
            J2000 FRONT SAFETY LOCK
```

TUBE Ø17
TUBE Ø19
TUBE Ø21

TUBE Ø22.2
TUBE Ø23.5
TUBE Ø24.7
TUBE Ø26
TUBE Ø26.8

To adapt this piece to tubes 1 and 2, cut it as shown in the drawing.

Not place in rubbish any electronic control board, because there are a lot of components that can be recyclable. Consult to the local authorities to obtain information on their recyclable.

6.- TROUBLE SHOOTING:

The following description attempts to help to rectify the most common breakdowns in the coin changers. It describes a series of operating anomalies of the J-2000, the possible causes and the steps to follow to correct or to determine the cause of the same prior to contacting our service technician.

Problem	Possible causes	Steps to follow
It does not accept coins, both displays are extinguished. The programming mode cannot be accessed.	The J-2000 does not have power or the voltage is not correct.	Check the voltage is within 15% of the nominal voltage of the compact.
		Check the continuity of the cables between the machine and the J-2000.
The program mode can be accessed, but compact doesn't communicate.	Error in the connection between compact and machine.	Check the lines connection.
	Wrong protocol	Check the value programmed in address 65.
The compact communicates correctly, program mode can be accessed, but compact doesn't accept coins, showing a 2 on the interior display when a coin is rejected.	The validator is rejecting the coins.	Go to address 51 and verify coin acceptance.
	Coin acceptance channel of the machine is pressing the anti fishing protection system of the validator.	Move the switch number 8 of the validator to the on position. And test again the coin acceptance.
The compact rejects all coins.	Unprogrammed prices.	Program prices.
The J-2000 send all coins to deposit.	Change type incorrectly programmed.	Test the values programmed on the address 22. Verify the route of the coins in the address 51.

	Change tubes are broken.	Check address 27 and reset breakdowns.
	The tube coin maximum programmed has been exceeded.	Check addresses 26 and 29 to see if they have reached the maximums.
The coins jams at the top of the tubes.	Change type incorrectly programmed.	Check the values of the address 22.
	The separators are jammed.	Send the J-2000 to technical service.
	Tube size is incorrectly selected.	Replace the tubes with others with the correct size.
The out of change lamp does not light up.	Lamp burn out or a fault in the connection.	Check the continuity of the connection and the condition of the lamp.
The J-2000 rejects a high percentage of coins. In sale mode the display shows a "2" whenever a coin is introduced.	Dirt in the measuring channel.	Clean the selector with a rag impregnated with alcohol. If it continues to reject send the selector to a technical service center.
	The gate of the selector is not completely closed.	Check the operating of the recovery lever. Eliminate any other obstruction.
The J-2000 does not accept any coin. When a coin is introduced the display shows nothing.	The flat cable between the J-2000 and the selector is broken or it isn't connected.	Check the flat cable.
The J-2000 does not accept coins and there is one "1" permanently on the display.	Communication with the machine's control board cannot be established.	Check the continuity of the serial connection between the J-2000 and the machine.
The programmed data has been lost.	Electrical noise.	Make sure that there is a good connection of the device to ground.
In address 25 the compact rejects coin routed to tubes 1 and 5.	The first load has not been done in a correct way.	Check page 18.

NOTES:

Jofemar S.A.

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