

E-EM Series

BISTANDARD ELECTRONICS
Executive - MDB protocols

UK English



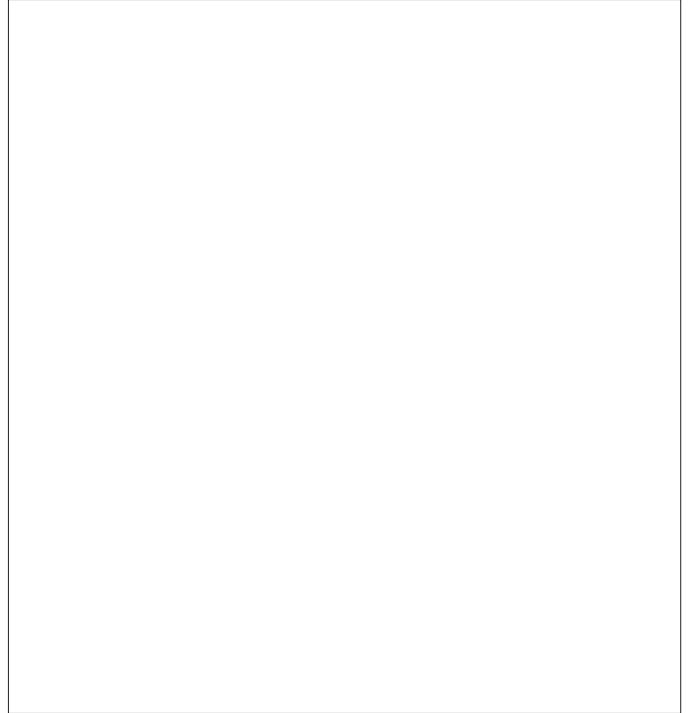
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DICHIARAZIONE DI CONFORMITA'
DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ
KONFORMITÄTSERKLÄRUNG
DECLARACIÓN DE CONFORMIDAD
DECLARAÇÃO DE CONFORMIDADE
VERKLARING VAN OVEREENSTEMMING
INTYG OM ÖVERENSSTÄMMELSE
OVERENSSTEMMELSESERKLÆRING
YHDENMUKAISUUSTODISTUS



Valbrembo, 03/05/2001

Dichiara che la macchina descritta nella targhetta di identificazione, è conforme alle disposizioni legislative delle direttive: **89/392, 89/336, 73/23 CEE** e successive modifiche ed integrazioni.

Declares that the machine described in the identification plate conforms to the legislative directions of the directives: **89/392, 89/336, 73/23 EEC** and further amendments and integrations.

Déclare que l'appareil décrit dans la plaque signalétique satisfait aux prescriptions des directives: **89/392, 89/336, 73/23 CEE** et modifications/intégrations suivantes.

Erklärt, daß das im Typenschild beschriebene Gerät den **EWG** Richtlinien **89/392, 89/336, 73/23** sowie den folgenden Änderungen/Ergänzungen entspricht.

Declara que la máquina descrita en la placa de identificación, resulta conforme a las disposiciones legislativas de las directivas: **89/392, 89/336, 73/23 CEE** y modificaciones y integraciones sucesivas.

Declara que o distribuidor descrita na chapa de identificação é conforme às disposições legislativas das directivas **CEE 89/392, 89/336 e 73/23** e sucessivas modificações e integrações.

Verklaart dat de op de identificatieplaat beschreven machine overeenstemt met de bepalingen van de **EEG** richtlijnen **89/392, 89/336** en **73/23** en de daaropvolgende wijzigingen en aanvullingen.

Intygat att maskinen som beskrivs på identifieringsskylten överensstämmer med lagstiftningsföreskrifterna i direktiven: **89/392, 89/336, 73/23 CEE** och påföljande och kompletteringar.

Det erklæres herved, at automaten angivet på typeskiltet er i overensstemmelse med direktiverne **89/392, 89/336** og **73/23 EU** og de senere ændringer og tillæg.

Forsikrer under eget ansvar at apparatet som beskrives i identifikasjonsplaten, er i overensstemmelse med vilkårene i EU-direktivene **89/392, 89/336, 73/23** med endringer.

Vahvistaa, että arvokyltissä kuvattu laite vastaa **EU**-direktiivien **89/392, 89/336, 73/23** sekä niihin myöhemmin tehtyjen muutosten määräyksiä.


ANTONIO CAVO

C.E.O



THE INTERNATIONAL CERTIFICATION NETWORK

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**IQNet and
CISQ/IMO-CSQ**

hereby certify that the organization

NECTA VENDING SOLUTIONS S.p.A.
Via Roma, 24 - I-24030 VALBREMBO (BG)

for the following field of activities
Design, manufacturing and sale of
electromechanical/electronic vending machines
has implemented and maintains a
Quality Management System
which fulfills the requirements of the following standard

ISO 9001

Issued on: 2000 - 03 - 31

Registration Number: **IT - 12979**



Catherine Neville
Catherine Neville
President of IQNet



Gianrenzo Prati
Gianrenzo Prati
President of CISQ

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ITALIAN CERTIFICATION OF COMPANY QUALITY SYSTEMS



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CERTIFICATE n. **9130.ZAVE**

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Progettazione, produzione e commercializzazione di
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Design, manufacturing and sale of
electromechanical/electronic vending machines

IL PRESENTE CERTIFICATO È SOGGETTO AL RISPETTO DEL REGOLAMENTO
PER LA CERTIFICAZIONE DEI SISTEMI QUALITÀ DELLE AZIENDE
THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE REQUIREMENTS
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1 Giugno 1994

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31 Marzo 2000

Emissione corrente
Current issue

La validità del presente certificato è subordinata a sorveglianza annuale e al riesame completo del Sistema di
Qualità con periodicità triennale secondo le procedure dell'IMO S.p.A.
The validity of the certificate is submitted to annual audits and a reassessment of the entire Quality System
within three years according to IMO S.p.A. rules



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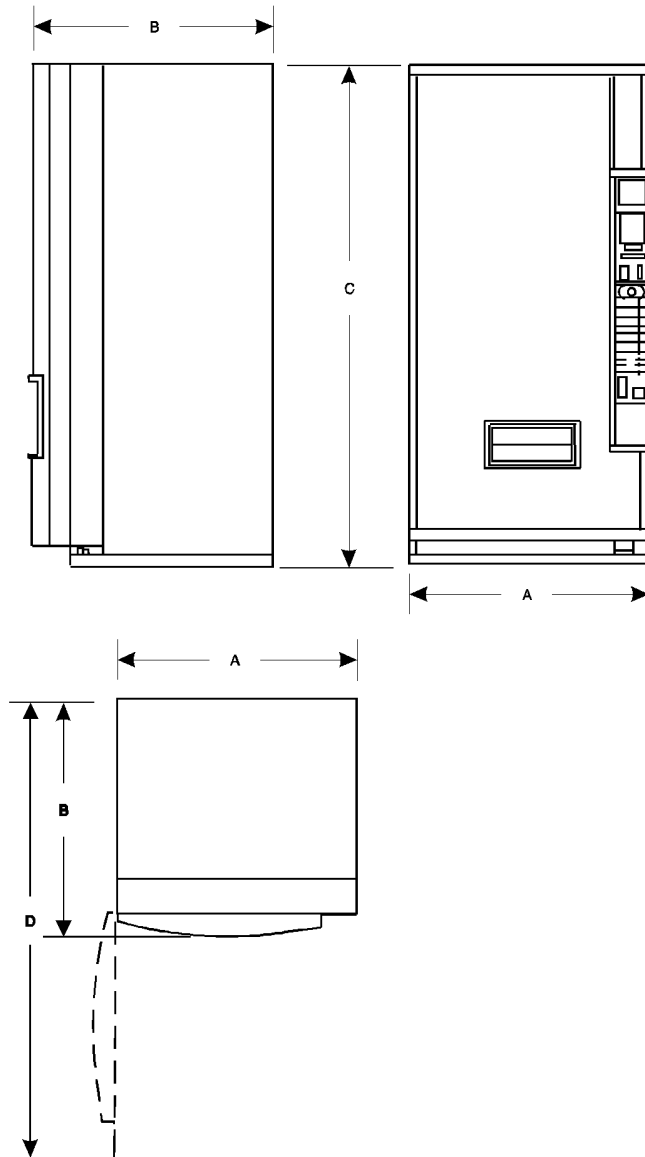
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DIMENSIONS (mm)

Models	A	B	B ¹	C	D
E Series					
E220/5:	780	750	660	1580	1530
E320/5:	780	750	660	1830	1530
E370/6:	945	750	660	1830	1695
E380/6:	945	750	660	1830	1695
E440/6:	780	830	740	1830	1775
E500/8:	945	830	740	1830	1775
E550/6:	945	800	800	1830	1720
EM Series					
EM190/6:	780	830	740	1830	1775
EM230/8:	945	830	740	1830	1775
EM260/9:	1115	830	740	1830	1945
EM300/9:	1115	830	740	1990	1945

B⁽¹⁾ models with flat door

INTRODUCTION

This technical documentation is a part and parcel of the vending machine.

Therefore it must always follow the machine when it is moved or ownership is transferred, so that different operators may be able to consult it.

Before installing and using the machine, it is first necessary to carefully read and understand the instructions contained in this manual, as they offer important information for safe installation, use and maintenance.

This manual is divided into three chapters.

The **first chapter** describes the loading and routine cleaning operations which are carried out in areas of the machine accessible with the sole use of the door key, without using any other tools.

The **second chapter** contains the instructions for correct installation and all information necessary for optimum use of the machine.

The **third chapter** describes the software programming.

The operations described in the second and third sections must be carried out exclusively by personnel who have a specific knowledge of the machine functions from a point of view of electrical safety and health regulations.

IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

Every machine is identified by its own serial number, indicated on the rating plate attached inside the cabinet on the right hand side.

This plate (see Figure 2) is the only one acknowledged by the manufacturer as identification of the machine, and carries all data which readily and safely gives technical information supplied by the manufacturer. It also assists in the spare parts management.

It is therefore recommended that this plate be neither damaged nor removed.

IN CASE OF FAILURE

In most cases, any technical problems are corrected by small repair operations; however, before contacting the manufacturer we recommend that this manual be read carefully.

Should there be more serious problems or malfunctions, then contact the following:

NECTA VENDING SOLUTIONS S.p.A.
Via Roma 24
24030 Valbrembo
Italy
Tel. +39 - 035606111

TRANSPORT AND STORAGE

To prevent any damage, special care should be taken when loading or unloading the vending machine.

The machine can be lifted by a motor-driven or manual fork lift truck, and the forks are to be placed underneath the machine from the side clearly indicated by the symbol on the cardboard package.

Do not:

- overturn the vending machine;
- drag the vending machine with ropes or similar;
- lift the vending machine by its sides;
- lift the vending machine with slings or ropes;
- shake or jolt the vending machine and its packing.

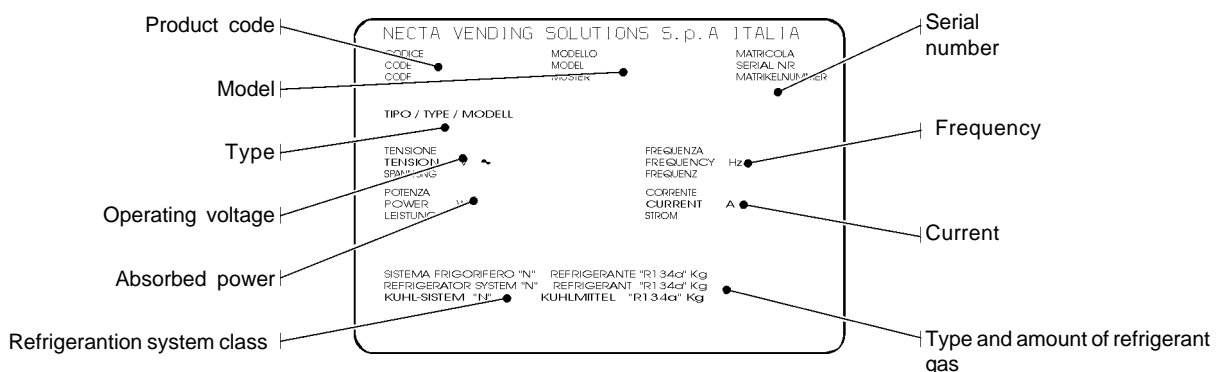
The machine should be stored in a dry room where the temperature remains between 0 and 40° C.

USE OF THE CAN & BOTTLE VENDING MACHINE

Can & bottle vending machines should only be used to sell and dispense drinks contained in factory-sealed cans and bottles made of different materials (such as metal, glass, plastic. etc.).

Strictly comply with the manufacturer's specifications regarding storage and expiry date for each product.

Any other use is incorrect and thus potentially dangerous.



POSITIONING THE VENDING MACHINE

The vending machine is not suitable for outdoor installation. It must be positioned in a dry room where the temperature remains between 2° C and 32° C, and not where water jets are used for cleaning (e.g. in large kitchens, etc.).

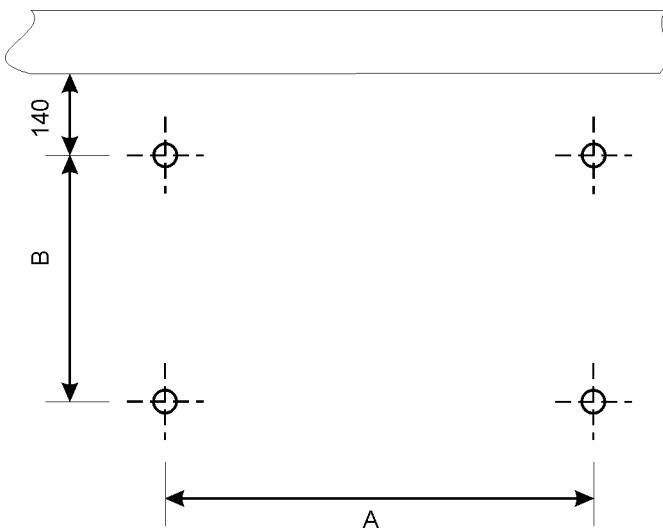
The machine should be placed away from heat sources and close to a wall, so that the back panel is at a minimum distance of 10 cm from it and correct ventilation may be ensured, especially in the compressor area.

The machine should never be covered with a cloth or the like.

The machine should be positioned in such a way that it has a maximum inclination of 2°.

If necessary provide proper levelling by way of the adjustable feet included.

For some versions there is the option of securing the machine to the floor; in this case holes must be made at the distance, in millimetres, indicated in the following diagram:



Vending machine model	A	B
E/EV-360-370-380	665	480
E M/EV-260-300-840	835	559

For some versions of models EV 370 there is the option, as alternative to the floor mounting, of fitting spacers on the back panel of the machine. In this case the back panel has the necessary predrilled holes for fitting the spacers (supplied with the machine).

CAUTION

When completely filled, the machine has a total static weight, bearing on the 4 support feet, that varies between 500 and 700 Kg according to the model.

Therefore, the structure on which the machine stands must be suitable for supporting such weight to avoid any hazardous conditions, like collapsing, sinking, other damage or any possible instability.

WARNING FOR INSTALLATION

Installation and the following maintenance operations should be carried out by qualified personnel only, who are trained in the correct use of the machine according to the standards in force.

The machine is sold without a payment system, therefore the installer of such a system has sole responsibility for any damage to the unit or to things and persons caused by incorrect installation.

The integrity of the vending machine and its conformity with the rules and regulations in force for its relevant systems must be checked by qualified personnel at least once a year.

WARNING FOR USING THE MACHINE

The following precautions will help protecting the environment:

- use biodegradable products only to clean the machine;
- adequately dispose of all containers of the products used for loading and cleaning the machine;
- keep the machine away from heat sources;
- regularly check the condition of the door seal to limit heat transfer to a minimum;
- limit as much as possible door opening time during loading operations to avoid temperature increase inside the cabinet and subsequent increase in power consumption.

WARNING FOR SCRAPPING

Whenever the machine is to be scrapped, the laws in force regarding environment protection should be strictly observed, more specifically:

- ferrous and plastic materials and the like are to be disposed of in authorized areas only;
- insulating materials should be recovered by qualified companies.
- the gas inside the cooling unit, regardless of the type (see the identification plate), should be recovered by qualified companies by means of special equipment.

TECHNICAL SPECIFICATIONS

MODELS E220-EV220-E320-E380

Compressor type S1

Power supply voltage	230	V~
Power supply frequency	50	Hz
Absorbed power*	490	W
Maximum current input	3.3	A
Refrigerating capacity*	410	W

**MODELS EMV190-EM190-EV300-EV320-EV360-
EV370-EV380-E440-EV440-E480-EV480**

Compressor type S2

Power supply voltage	230	V~
Power supply frequency	50	Hz
Absorbed power*	675	W
Maximum current input	4,5	A
Refrigerating capacity*	540	W

MODELS EMV230-EM230-EV500-E550

Compressor type S3

Power supply voltage	230	V~
Power supply frequency	50	Hz
Absorbed power*	738	W
Maximum current input	4,55	A
Refrigerating capacity*	610	W

MODELS EM260-EMV300-EM300-EV480

Compressor type S4

Power supply voltage	230	V~
Power supply frequency	50	Hz
Absorbed power*	1135	W
Maximum current input	7,5	A
Refrigerating capacity*	840	W

* With a room temperature of +32° C, condensing temperature of +50° C and evaporation temperature of -10°C.

NOISE LEVEL

The continuous, weighted equivalent acoustic pressure level is below 70 dB.

PAYMENT SYSTEM

The machine is factory-fitted for Executive and MDB protocol, as well as parallel-type validators.

SALES PRICES

A different price can be set for each single selection.

COIN BOX

Cover and lock are available as an optional feature.

AVAILABLE SELECTIONS

The machine can be set to dispense the following selections:

- 65 to 69 mm. diameter bottles for serie E - EV
- 53 to 98 mm. diameter bottles and cans for serie EM
- 250 cc. cans in three rows
- 330 cc. cans in double or triple rows
- 355 cc. cans in double rows
- 500 cc. cans in single row

CONTROL AND SAFETY DEVICES

- "Machine working" warning
- "Exact amount" warning (with a suitable coin mechanism)
- "Empty column" micro-switch for each single selection
- Door switch
- Maximum preset time for power supply to the vending motors
- Overheating cutout for compressor
- Line fuses
- Transformer fuses

ACCESSORIES

A wide range of accessories can be installed on the machine, to vary its performance:
The installation kits are supplied with their own installation and test instructions, which must be strictly observed to ensure the machine safety.

Installation and the following testing operations must be carried out exclusively by personnel who have a specific knowledge of the machine functions from a point of view of electrical safety and health regulations.

VARIABLE COMBINATION LOCK

Some machine models are fitted with a variable combination lock.

The lock is supplied with two silver colour keys to be used for normal opening and closing.

The lock can be customised by using a kit, available as accessory, which permits the combination of the lock to be changed.

This kit includes a change key (black) for the current lock combination as well as the change (gold) and use (silver) keys for the new combination.

Sets of change and use keys with other combinations can be supplied on request.

Additional sets of use keys (silver) may be requested, indicating the combination stamped on the keys.

Generally, only the use key (silver) is used, while the combination change keys (gold) can be kept as spares.

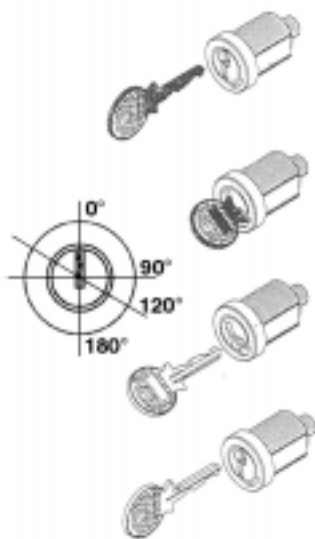
Do not use the change key for normal opening, as it may damage the lock.

To change combination do as follows:

- insert the current change key (black) and rotate to the change position (reference notch at 120°);
- remove the current change key and insert the new change key (gold);
- rotate to the close position (0°) and remove the change key.

The lock will now have the new combination.

The keys with the old combination cannot be used for the new combination.



DOOR SWITCH

When opening the door a special micro-switch disconnects the power from the apparatus electrical system, **except the terminal block connection to the power grid cable and the socket which are always live.**

To energize the system with door open, just pull the switch actuator outwards.

All operations requiring the machine to be energized with the door open should be performed by qualified personnel only, informed on the specific risks of such condition.

When the door is closed, the switch automatically returns to its normal operating position.

CONTROLS AND INFORMATION

All user controls and information are located on the external side of the door, i.e. display, selection menu, coin slot and return, "exact amount" warning lamp, and if fitted the bottle opener.

LOADING

In order to correctly load the products to be dispensed, the following must be done:

- first load the column that bears on the lower portion of the rotor (see Fig. 1);
- do not push the cans in the first row beyond the back panel of the column;
- completely load the next columns, alternating right and left;
- the bottles must be loaded with the top towards the back panel of the column.

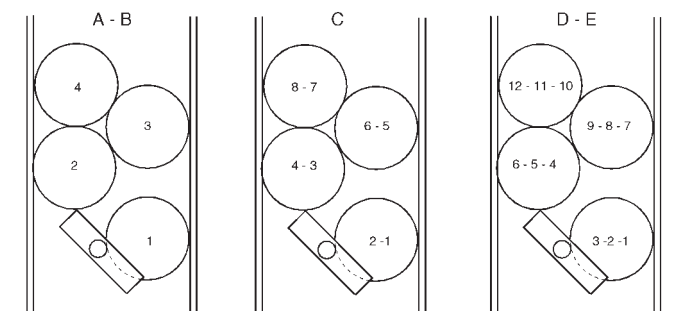


FIG. 1

- A = 0,5 l cans
- B = PET 0,5 l bottles (ø66 ...68)
- C = 0,33 l cans - double row
- D = 0,25 l cans- triple row
- E = 0,33l cans- triple row

If the machine is fitted with a single column for dispensing 330 cc cans in triple row, the first loading of the rotor must be performed according to the following procedure (see Fig. 2):

- Load three cans in a line above the rotor (A)
- Press the dispensing button corresponding to the column for three times. The rotor (B) is loaded with this operation.
- After loading finish to fill the column (C).
- Make a dispensing for each selection after the first loading.

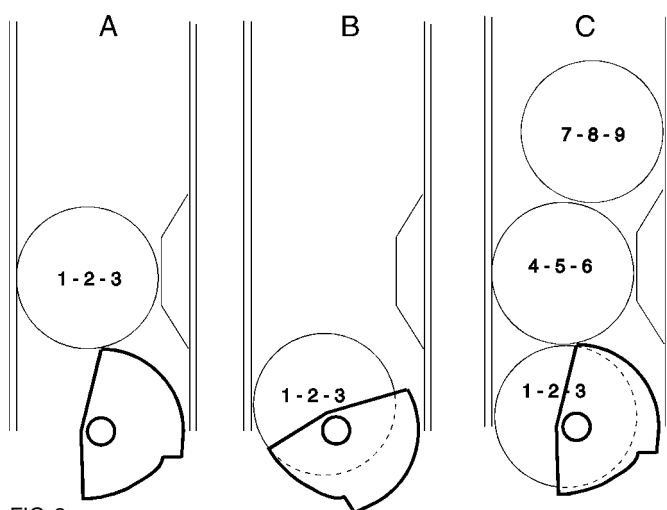


FIG. 2

TEMPERATURE CONTROL

The thermostat is initially adjusted so that a temperature of +3°C is maintained in the lower portion of the refrigerated box (containing bottles and cans which will be sold first). The thermostat is located next to the refrigerating unit (see Fig. 5).

To change temperature, turn the thermostat knob keeping in mind that the temperature is approximately:

- position "1" = + 10°C
- position "7" = + 3°C
- position "0" = Switched off

RELEASING A COLUMN

It may occur that, for any reason, the products are jammed in the dispensing area.

In this case, to restore the full functionality of the jammed column, do as follows:

- switch off the machine and empty the concerned column being sure that the rotor area is clear;
- switch on the machine;
- move minidip 6 (see Fig. 9) to position ON.

Only 24 V voltage is in the card area. However, be carefull so that short circuits on the card can be avoided.

- move minidip 6 back to position OFF
- switch the machine off and refill the module.

ROUTINE MAINTENANCE

Before any cleaning or maintenance operations, disconnect the machine from the mains power supply.

Under no circumstances should sprayed water be used to wash the machine.

COOLING UNIT MAINTENANCE

- Condensed water within the cell is drained into the special cup placed on the compressor bowl and then evaporates because of the heat generated.

However it is recommended to periodically check that the cup is not overflowing; in this case check for any cracks or loosening of the cell seals.

- Avoid dirt build up between the condenser blades (brush the front part regularly), as this may lead to poor air suction resulting in a reduced cooling performance.

- Do not use sharp tools to clean the evaporator or the condenser.

In any case, excess clogging in the area surrounding the evaporator must be avoided, as cold air must flow freely. Otherwise ice may build up on the evaporator surface.

PERIODICAL CLEANING

Clean the metallic parts with lukewarm water and mild non abrasive detergent; then rinse thoroughly and wipe dry carefully.

When cleaning metal parts DO NOT use any detergent containing abrasive or corrosive agents; do not use common steel wool, wire brushes or steel scrapers.

SUSPENDING FROM USE

In the case of failure or malfunction switch the machine off.

If for any reason the machine should remain switched off for a period of time exceeding the use-by date of the products, or anyway for a long time, take the following precautions:

- disconnect the plug from the power outlet;
- remove all products from the columns and clean the inside and all accessories.

Chapter 2 INSTALLATION

The machine installation and the following maintenance operations should be carried out with the machine energised and therefore exclusively by qualified personnel, who are trained in the correct use of the machine and aware of the specific risks of such condition.

To energise the electrical system of the machine with the door open, simply insert the special key into the door switch (see Fig. 5).

The dispensing motors remain disconnected, thanks to the special switch (see Fig. 5), even with the key inserted.

This is to avoid the risk of accidental injury.

The rotors must be electrically operated with the door closed.

Energised parts cannot be accessed with the door open. Only those parts inside the machine with protective covers, and carrying the message "disconnect electricity before removing the protective cover", remain energised.

Before removing such protective covers, the external switch must be disconnected.

The door can be closed only after removing the key from the door switch.

The machine must be installed in a dry room where the temperature remains between 2° C and 32° C.

The relative humidity must not exceed 65%.

UNPACKING THE VENDING MACHINE

After removing the packing, ensure that the machine is intact.

If in doubt do not use the machine.

No packing elements (i.e. plastic bags, polystyrene foam, nails, etc.) should be left within the reach of children, as they are potentially dangerous.

Packing materials must be disposed of in a manner which is safe for the environment, in compliance with current laws, and the recyclable components must be recovered by qualified companies.

The machine should be positioned in such a way that it has a maximum inclination of 2°.

If necessary provide proper levelling by way of the adjustable feet included.

If the vending machine had been laid down during transport, allow at least one hour before connecting it to the mains.

CONNECTING THE MACHINE TO THE POWER SUPPLY

The machine is designed to operate under single-phase 230 V~ voltage and is protected by 10 A fuses.

Before making the connection ensure that the rating corresponds to that of the power grid, and more specifically:

- the supply voltage rating should be within the range recommended for the connection points;
- the main switch should be suitable to withstand the peak load required, and at the same time should ensure proper omnipolar disconnection from the power grid with an opening gap of the contacts of at least 3 mm.

The main switch, the power outlet and the plug should be located within easy reach.

The electrical safety of the machine is ensured only when it is correctly earthed according to the safety standards in force.

This fundamental safety requirement must be duly verified, and if in doubt the system must be carefully tested by qualified technicians.

The power cable must be fitted with a fixed plug. Any replacement of the power cable should be made by qualified and suitably trained personnel only using cables type HO5 RN-F, HO5 V V-F or H07 RN-F with a 3x1.5 mm² section.

Do not use adapters, multiple sockets and/or extensions.

THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY NONCOMPLIANCE WITH THE ABOVE MENTIONED PRECAUTIONS.

INSTALLING THE PAYMENT SYSTEM

The machine is sold without payment system, therefore the installer of such a system has sole responsibility for any damage to the machine or to things and persons caused by incorrect installation

Install the coin mechanism and make sure that the programming of the relevant parameters is correct (see programming chapter).

Insert some different denomination coins, checking that the correct count is indicated on the display.

To reset the credit it is sufficient to make any selection.

ADJUSTING THE DISPENSING MECHANISMS

Through a few simple operations, described below, the dispensing mechanisms can be set for dispensing:

0.5 LITRE PET BOTTLES (66 TO 68 MM Ø)

- using inserts "E", located on the cam (see Fig. 3a), close the cam's slots 2 and 4;
- fit plate C on the dispensing rotor A, using the fastening screws D already present on the rotor.

0.33 LITRE CANS - DOUBLE ROW

- leave the 4 slots on the cam open (see Fig. 3b);
- fit plate C on the dispensing rotor A, using the fastening screws D already present on the rotor.

0.25/0.33 LITRE CANS - TRIPLE ROW

- replace the 4-slot cam with the special 6-slot cam (see Fig. 3c);
- fit plate C on the dispensing rotor A, using the fastening screws D already present on the rotor.

Many other types of cams and plates are available for dispensing all the most common bottle types.

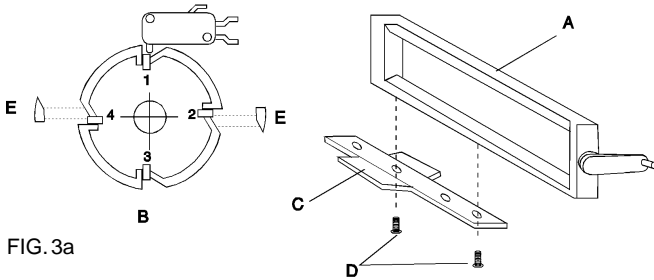


FIG. 3a

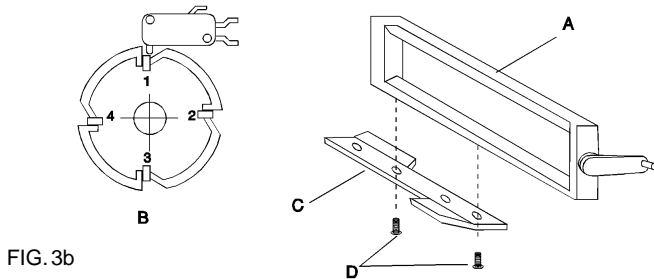


FIG. 3b

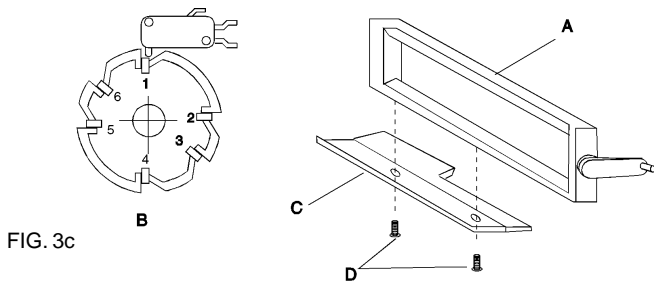


FIG. 3c

A = Dispensing rotor
B = Cam
C = Blade
D = Securing screw

ADJUSTING THE MODULAR COLUMNS

The modular columns can be adjusted for dispensing the most widely diffused bottle and can types by following the procedure described below for the maximum column setting.

According to the bottle type, some adjustments to the setting may be necessary.

The possible settings are as follows:

- width
- depth
- width of bottle-top guides.

To adjust the column settings, the columns must be removed from the machine, disconnecting the special connector and loosening nuts A (see Fig. 4) to release the sliding securing plates.

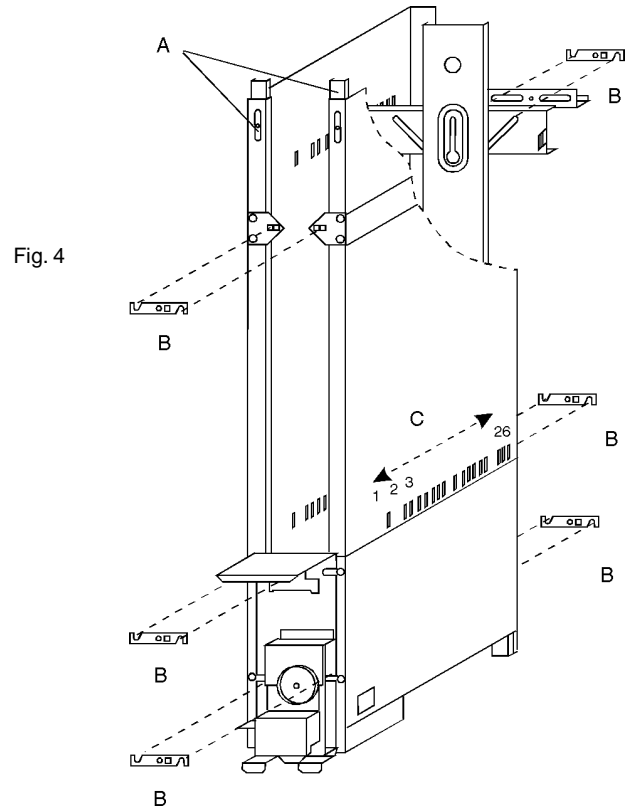


Fig. 4

DETERMINING THE COLUMN WIDTH

The column width is adjusted with plates B (see Fig. 4). Different size plates are available, identified by a letter, that can be fitted in position 1 or 2 (see Fig. 5) to cover all possible sizes.

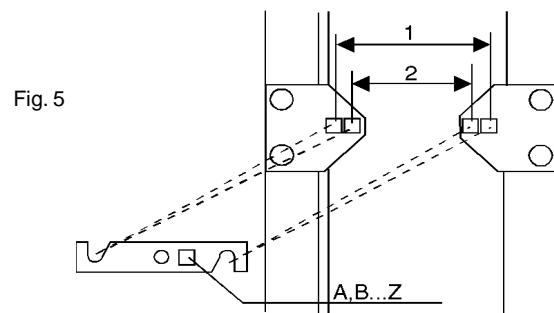
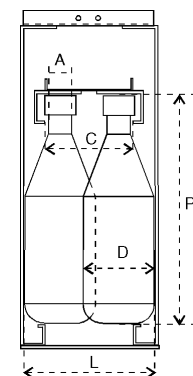


Fig. 5

To determine the column width the following formula is used: $L = D \times 1.87$ (see Fig. 6).

Fig. 6



The following table is used to identify the plate and the fitting position for the calculated width.

L = mm.	Type	Position	L = mm.	Type	Position
100	H	1	132	D	1
101	A	1	133	G	2
103	P	1	136	L	2
105	Q	1	138	N	2
107	B	1	141	E	1
111	C	1	144	F	1
113	G	1	146	M	1
116	L	1	149	I	2
118	N	1	150	R	1
120	H	2	151	D	2
121	A	2	161	E	2
123	P	2	163	O	1
125	Q	2	164	F	2
127	B	2	166	M	2
129	I	1	170	R	2
131	C	2	183	O	2

N.B.: The plates for belonging to the same column must all be of the same type.

DETERMINING THE COLUMN DEPTH

The column depth must be 5 mm greater than the bottle height. The following table is used to identify the slot C (see Fig. 4) corresponding to the calculated size. Position the supports on the column back panel (see Fig. 7) to the correct slot.

P = mm.	Position	P = mm.	Position
136	1	264	14
172	2	270	15
178	3	278	16
189	4	288	17
202	5	297	18
210	6	304	19
217	7	310	20
229	8	316	21
236	9	323	22
242	10	329	23
248	11	336	24
253	12	344	25
259	13	353	26

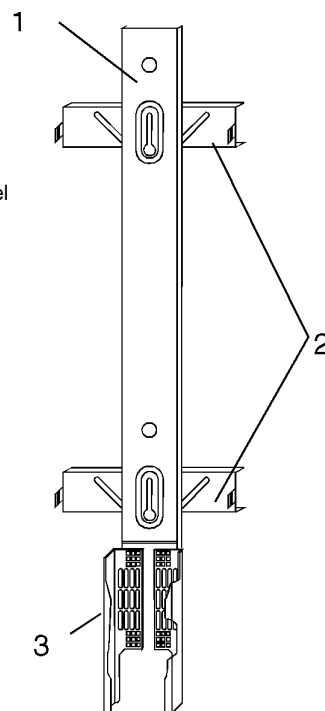


Fig. 7

- 1 - Column back panel
- 2 - Supports
- 3 - Bottle-top guides

DETERMINING THE WIDTH OF BOTTLE-TOP GUIDES

To determine the width of the bottle-top guides (see Fig. 7) the following formula is used: $C = A + (D \times 0.87)$ (see Fig. 6).

To obtain this distance, the bottle-top guides must be fitted on the column back panel, matching the holes as indicated in the following table:

C= mm.	Guide	Back	C= mm.	Guide	Back
69	C3	C4	93	B1	B1
71	A1	A2	95	B2	B2
73	A2	A3	97	C2	C1
76	B3	B4	98	B3	B3
78	B1	B2	99	C3	C2
80	C1	C1	103	A2	A1
81	B2	B3	105	A3	A2
82	C2	C2	110	B2	B1
84	C3	C3	112	B3	B2
86	A1	A1	114	C3	C1
88	A2	A2	120	A3	A1
90	A3	A3	127	B3	B1

N.B. For bottles with a plastic top, the plastic element must be inserted into the guides (see Fig. 8).

IMPORTANT NOTICE!!!

The settings calculated with the procedures described in the previous chapters are only an indication, as they depend on the bottle shape.

It will be necessary to test the single columns to ensure good operation.

Chapter 3 PROGRAMMING

CONTROL BOARD FUNCTIONS AND INDICATOR LIGHTS

The control board controls all of the apparatus functions, and more precisely:

- Serial interface for 24 V ac Executive electronic coin mechanism.
- Parallel interface for 24 V coin validator
- Serial interface for MDB coin mechanism.
- Programming of the number of selections: 1 to 9.
- Programming of the vending price for each single selection.
- Time-out function for the vending motors, adjustable from 0 to 30 seconds.
- Programming of the coin values for use with 24 V validator.
- Storing of the total sales for each selection.
- Storing of the total amount of all sales.
- Storing of the total coin value cashed.
- Storing of the motor locks following a time-out condition.
- Storing of the total motor resets.
- Storing of the number of serial transmission failures occurred.

LED L1 is normally switched off; it blinks when no communication takes place with the coin mechanism.

LED L2 is switched on when 24 V dc voltage is detected.

LED L3 is switched on when 5 V dc voltage is detected.

Trimmer TR1 controls the contrast of the liquid crystal display (available as optional).

Push-button P1 resets the control board.

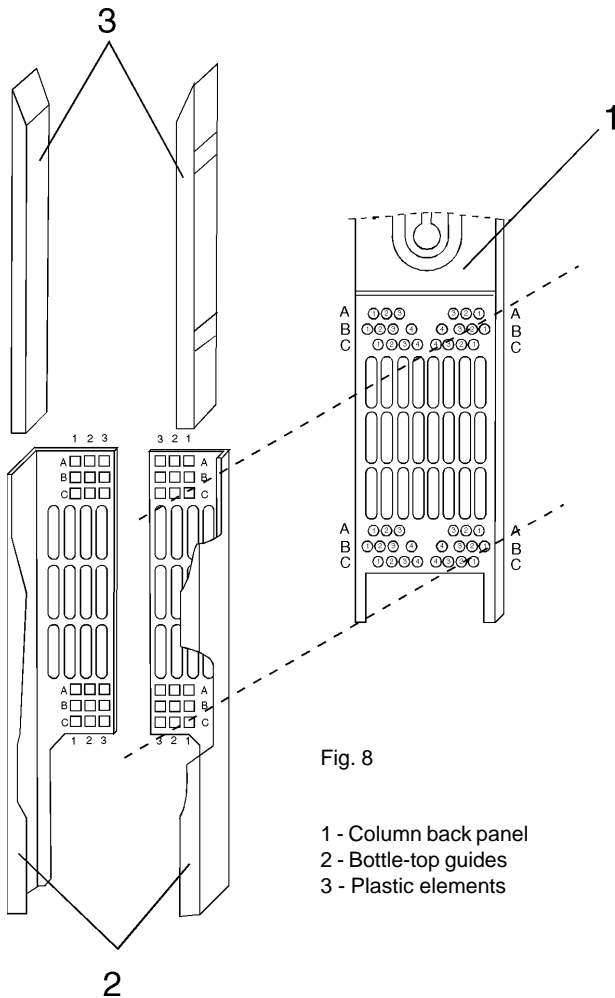
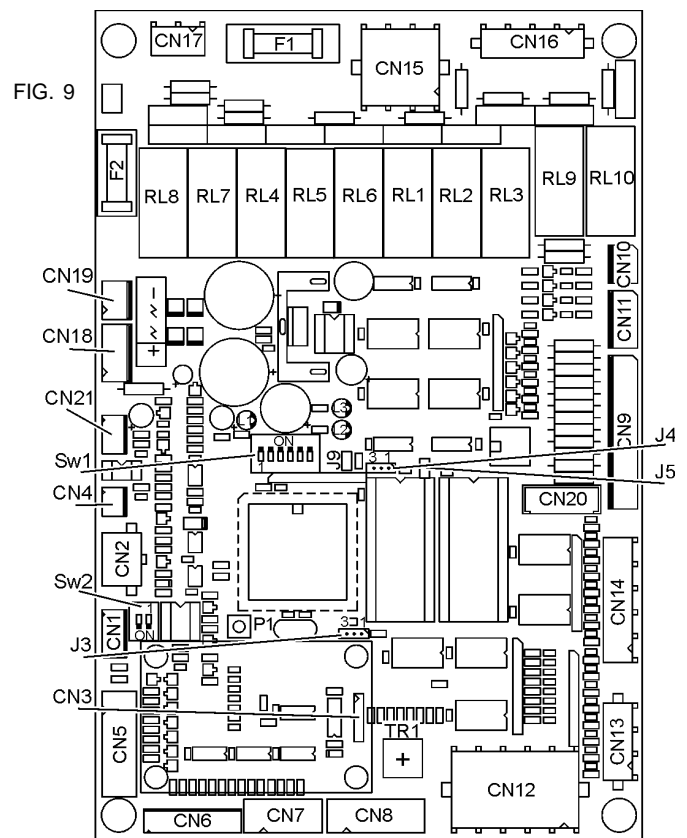


Fig. 8

- 1 - Column back panel
- 2 - Bottle-top guides
- 3 - Plastic elements

CN1	Executive serial interface
CN2	MDB serial interface
CN3	RS232 expansion
CN4	Not used
CN5	24 V validator interface
CN6	Not used
CN7	LED display
CN8	Provision for LCD
CN9	Push-button input, 1 to 6
CN10	Push-button input, 7 to 8
CN11	Push-button input, 9 to 10
CN12	Empty state micro-switch, motors 1 to 7
CN13	Empty state micro-switch, motor 8
CN14	Empty state micro-switch, motor 9
CN15	Motor outputs 1 to 8
CN16	Motor output 9
CN17	Board power supply
CN18	Executive power supply
CN19	MDB power supply
CN20	Not used
CN21	Not used
F1	Motor fuses
F2	24 Vac board power supply fuse
RL1 - 9	Motor relays
J3	(1-2) With 512 Kb EPROM (2-3) With 1 Mb EPROM
J4	(1-2) With 512 Kb RAM (2-3) With 1 Mb RAM
J5	Closed with a 1 Mb RAM
J9	Reset contacts



PAYMENT SYSTEMS

Interface with "Executive" coin mechanism

Connect the coin mechanism to the 15-pin molex power supply connector and to connector CN1 on the control board.

Set the board as described in the "Programming of parameters and prices" section.

Set the two minidips (SW2) to OFF position.

Interface with MDB coin mechanism

Connect the coin mechanism to connector CN2 and energise the board with 24 V ac through connector CN19 using the special cable. Set the board as described in the "Programming of parameters and prices" section.

Set the two minidips (SW2) to ON position.

Interface with 24 V validator

The validator must be connected to connector CN5 on the board (see Fig. 27). Set the board as described in the "Programming of parameters and prices" section.

Free vend for all selections

Place minidip 5 into position "ON".







MINIDIP FUNCTIONS

Each of the 6 minidip (SW1), when moved to position "ON", activates one of functions indicated below.

The two SW2 minidips have the following functions:

1-2 ON = payment system MDB

1-2 OFF = payment system Executive - BDV

ON	
	1 - ON = Programming of parameters and sales prices
	2 - ON = Reading on the display the stored data
	3 - ON = Not used
	4 - ON = Total sales display
	5 - ON = Free vend
	6 - ON = Motor reset

Motor reset

When one or more selections are blocked and the motor cams are out of position, placing minidip 6 into position "ON" automatically resets all blocked motors.

When a selection is blocked, the corresponding button is illuminated.

When pressing the illuminated button, the display indicates **- - - -** if the cause of the blockage is an empty module and **Error** if the cause is a problem connected with the motor or with the micro-switch of that column.

Instant display of total sales

Placing minidip 4 into position "ON" causes the total sales information to be shown on the display, thus skipping the normal "data" procedure. After storing this value, minidip 4 must be placed back to position "OFF".

Resetting the total counters

To reset the total counters of the "data" function, proceed as follows:

- disconnect the board supply connector CN17 (Figure 9);
- join the two "reset" contacts (J9) at the minidip side (Figure 9);

- remove the motor connectors CN15 and CN16 from the board;

- re-insert the board supply connector CN17;

After a short time all of the board relays are activated in sequence, wait about 10 seconds, then remove the jumper from the "reset" contacts and remove connector CN17.

- Re-insert motor connectors CN15 and CN16;

- re-insert board supply connector CN17.

Automatically unloading the columns

Simultaneously placing minidip 4 and 6 into position "ON" enables the function used to automatically unload the columns.

After closing the door the message **AUTO-** will be displayed; pressing the button of the selection to be emptied causes the release motor to be activated at intervals of five seconds and up to 30 consecutive selections maximum.

The motor will continue for other four selections after the signal of "empty" condition.

The automatic unload function can be interrupted by pressing any button during the 5 second interval between two releases.

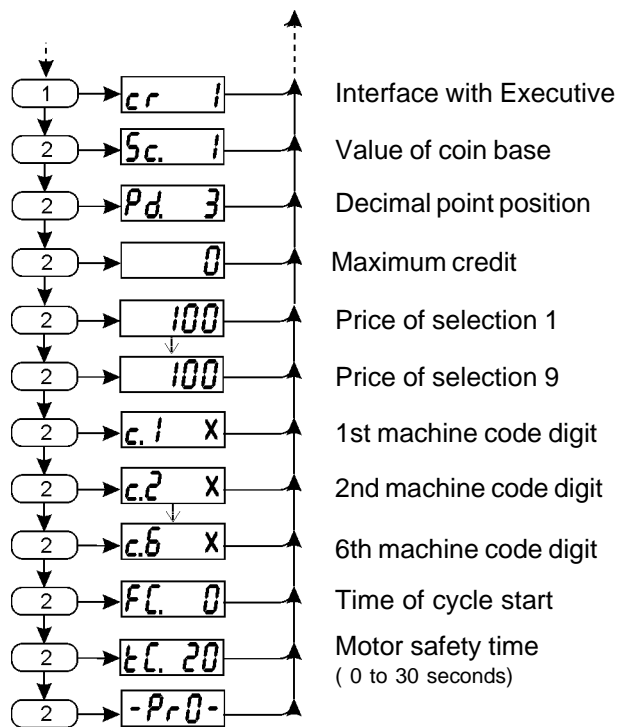
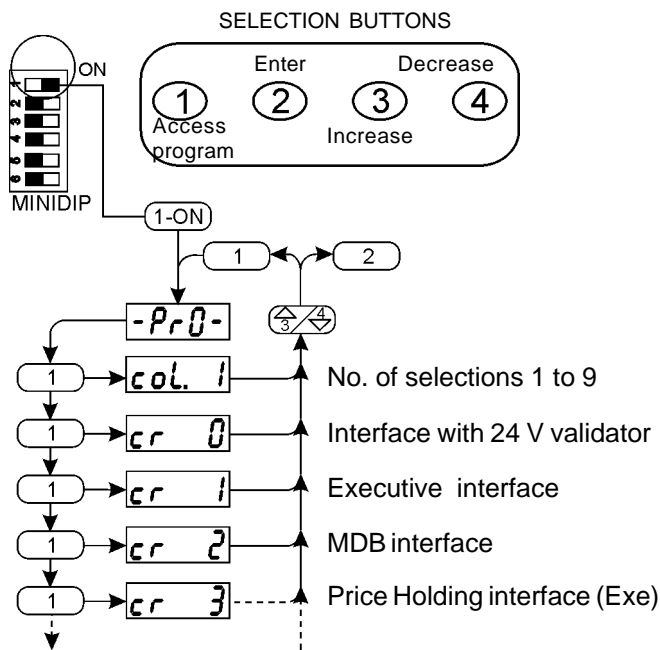
PROGRAMMING OF PARAMETERS AND PRICES

Place minidip 1 into position "ON".

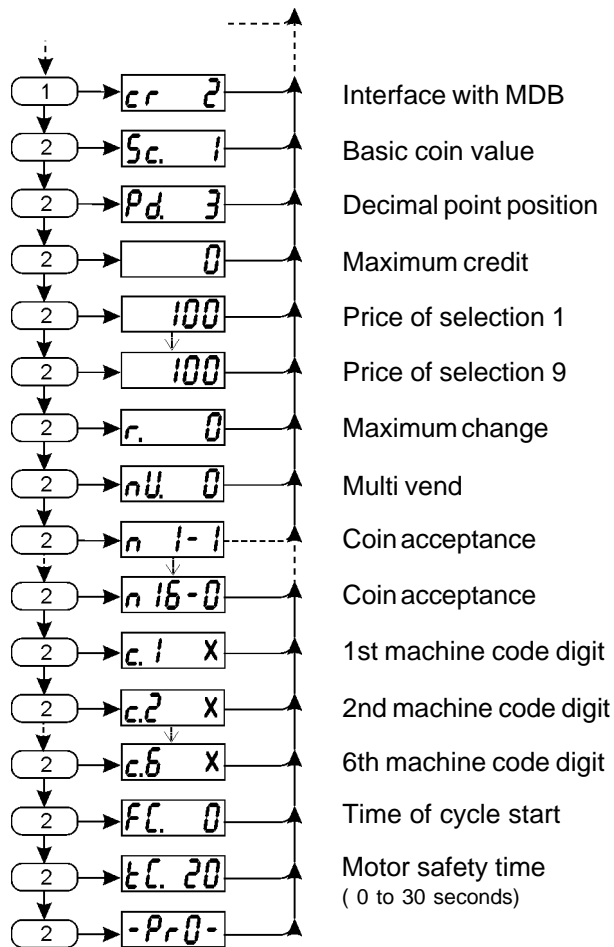
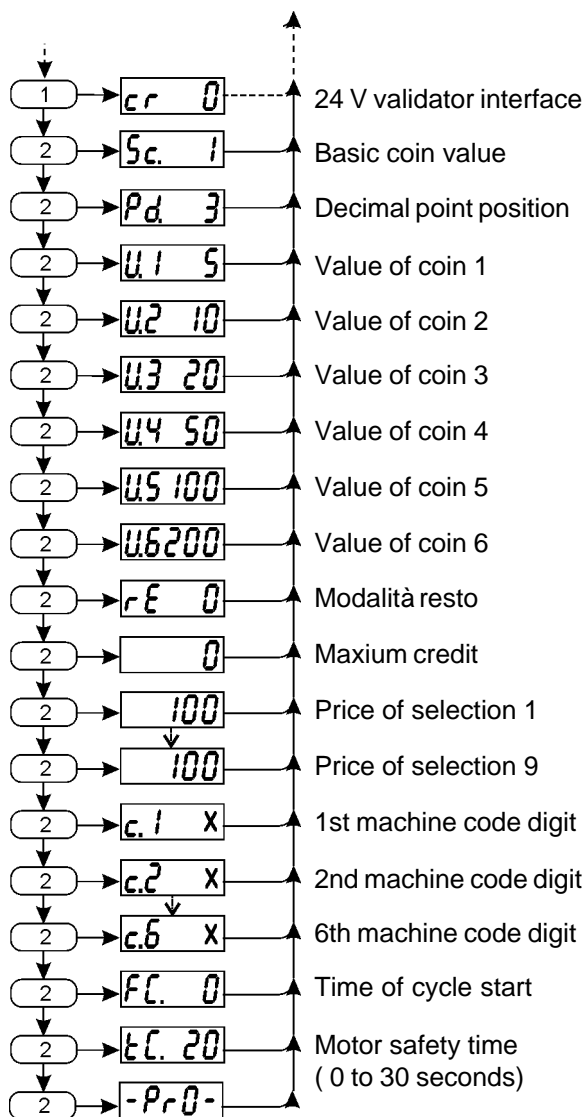
The indication **- P r 0 -**.

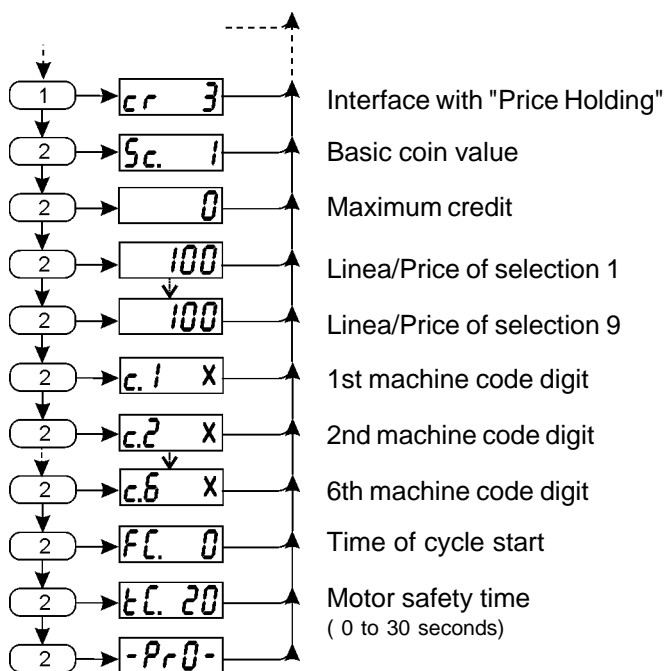
At this point, according to the model, the first or last selection buttons will be lit, having the following functions:

BUTTON	FUNCTION
First	
Last	Enter/exit programming mode
Second	
Second last	Store data unit and/or skip to the next step
Third	
Third last	Increase value
Fourth	
Fourth last	Decrease value



The setting sequence of the parameters varies according to the type of interface selected (refer to the following tables).





To start programming press button 1, the message **col. 6** will be displayed indicating the number of selections for the machine.

If this is the desired number, press button 2 to go to the next parameter, otherwise set the new value by using button 3 to increase or button 4 to decrease (minimum 1, maximum 9 columns), then press button 2 to store the new data unit and go to the next parameter.

col. x

x" is the number of selections.

It can be set to values varying from 1 to 9 (default = 6).

cr x

Type of payment system

- CR 0 = Validators
- CR 1 = Executive
- CR 2 = MDB
- CR 3 = Price holding

Sc. x

Value of basic coin.

"x" must be given the value of the lowest coin denomination accepted by the coin mechanism. The default value is 1 (cent). In "serial" operating mode, this information is transmitted directly from the coin mechanism to the control board.

Pd. x

Decimal point.

"x" is the number of the display digit (1-4) where the decimal point is shown. With x=1 this point is not displayed; to have two decimal digits displayed, enter x=3. In serial operating mode also this information is transmitted directly to the control board.

UX XX

coins accepted by the validator.

This function is used only when the control board is interfaced with a coin validator.

Multiply the basic coin value by "xx", to assign the value to the six coins. For example, if the basic coin is set to 1 (Sc 1):

(1st coin)	U1 x=5	5x1	= 0.05
(2nd coin)	U2 x=10	10x1	= 0.10
(3rd coin)	U3 x=20	20x1	= 0.20
(4th coin)	U4 x=50	50x1	= 0.50
(5th coin)	U5 x=100	100x1	= 1.00
(6th coin)	U6 x=200	200x1	= 2.00

rE x

Credit mode (validators only)

This function is used to make available to the user any amount exceeding the selection price

0 = excess cashed

1 = excess made available

2 = excess made available for a programmed time; confirm this option to access function **tr XX** which allows programming of such time for up to a maximum of 99 seconds

X

Maximum credit (only validators and MDB)

The maximum credit (expressed in number of basic coins) accepted by the coin mechanism is displayed. If such value is set to 0 this function is ignored.

XXX

Sales prices per selection.

"xxx" is the price value of a selection; the selection button to which the price is referred is illuminated. The maximum value is 255 times the basic coin (ex. Sc = 1, Max price = 1*255 = 2.55).

READING THE STORED DATA

Place minidip 2 into position "ON".

3 selection buttons are used, and given the following functions:

- BUTTON 1 Data input/output
- BUTTON 2 Data sequence
- BUTTON 5 Data reset

When pressing button 1, the number of sales in the first selection is displayed and button 1 is illuminated.

To read the number of sales related to the other selections, press button 2 each time, the illuminated button indicates the selection to which the value on the display is referred. To reset a value press button 5, the display will be reset and the next data unit will automatically be displayed.

Warning: The values relating to global data, sales and cash cannot be reset with button 5 (see relevant section).

The maximum value which can be stored is 50,000, beyond which counting starts again from 0.

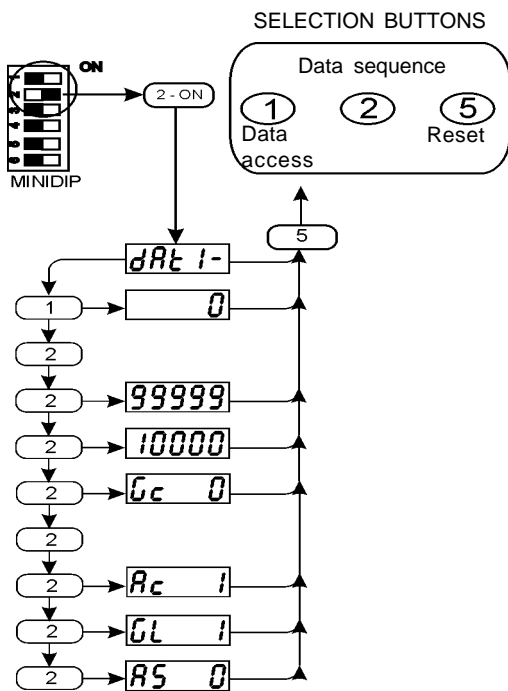
REMOVING THE COOLING UNIT

Before carrying out any cleaning or maintenance operations, disconnect the machine from the mains power supply.

The cooling unit is located in the lower part of the vending machine mounted on guides to make removal easy in case of need.

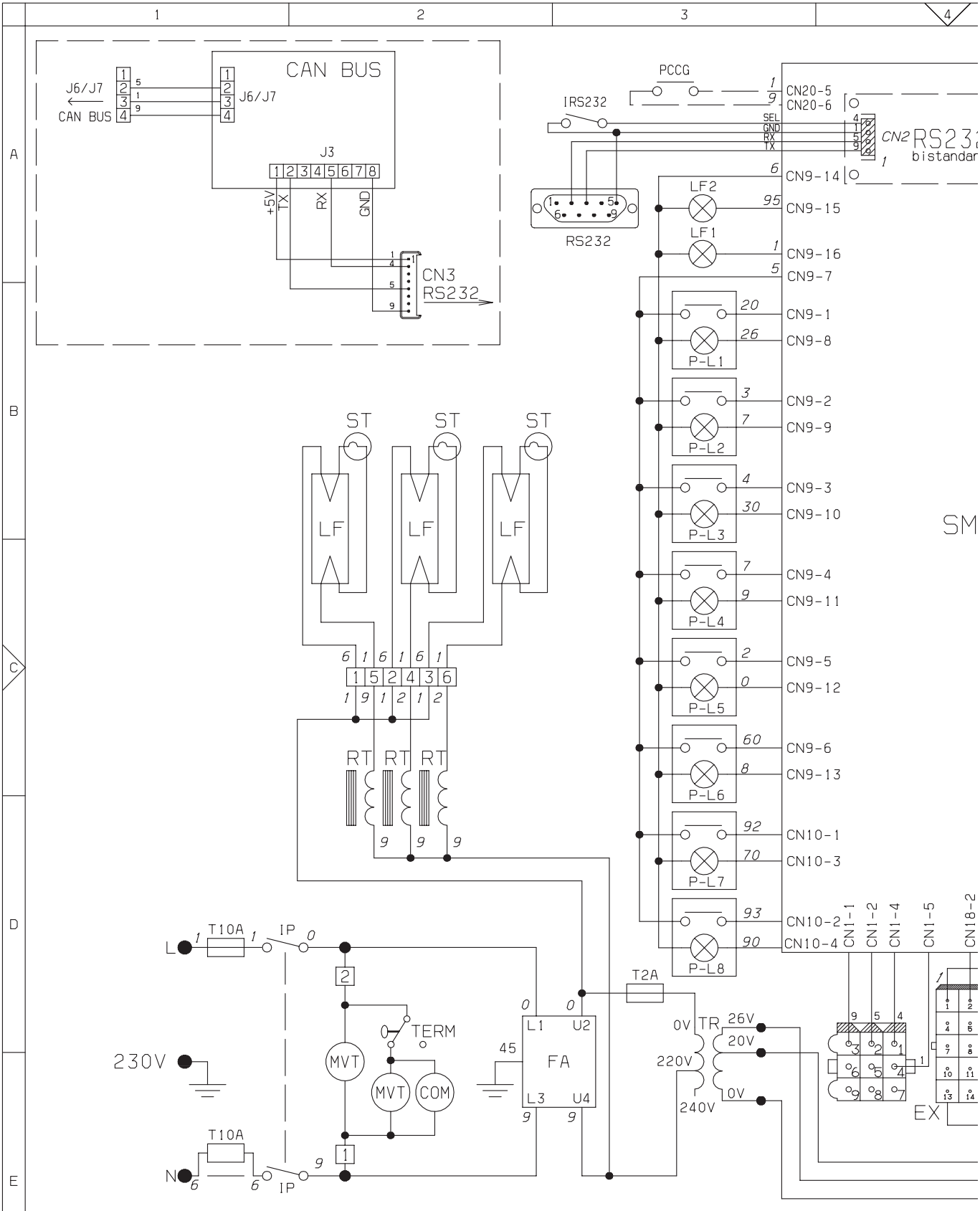
To remove it, the procedure below must be followed:

- Open the door to access the interior of the machine, then remove the front panel that protects the cooling unit, undoing the screws that secure it to the structure.
- Undo the screws from the beverage chute (secured to the upper wall of the compartment that houses the cooling unit).
- Undo the screws from the evaporator's support (located behind the chute indicated above).
- Undo the unit base central screw, located at the front between the two guides.



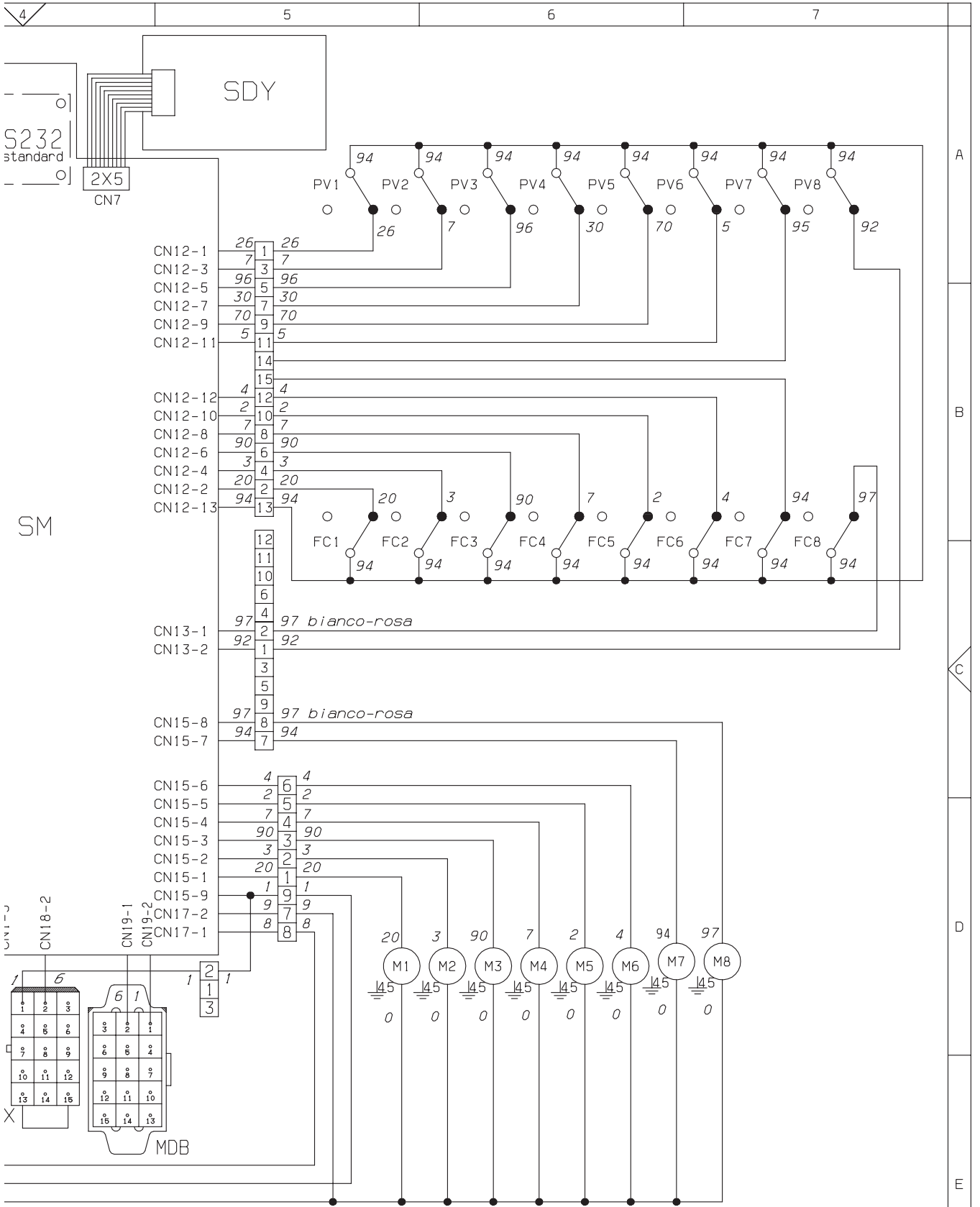
WIRING DIAGRAM LEGEND**MEMORIA ESQUEMA ELECTRICO**

INITIALS	DESCRIPTION	SIGLA	DENOMINACION
CF	FILTER CONDENSER	CF	CONDENSADOR DEL FILTRO
COM	COMPRESSOR	COM	COMPRESOR
EX	EXECUTIVE COIN MECH CONNECTO	EX	CONECTORES MONEDERO EXECUTIV
FA	RADIO INTERFERENCE SUPPRESSO	FA	FILTRO ANTIPARASITARIO
FC1-..	LIMIT MICRO-SWITCH	FC1-..	MICROINTERRUPTOR DE TOPE
IP	DOOR SWITCH	IP	INTERRUPTOR PUERTA
IRS232	RS232 PORT SWITCH	IRS232	INTERRUPTOR PUERTA RS232
LF	LAMP	LF	LAMPARA
LF1-..	LAMP	LF1-..	LAMPARA
M1-...	RELEASE MOTOR	M1-...	MOTOR DE DESENGANCHE
MDB	CONNECTOR FOR MDB COIN MECH	MDB	CONECTOR PARA MONEDERO MDB
MVT	FAN	MVT	MOTOVENTILADOR
P-L1..	ILLUMINATED BUTTONS	P-L1..	PULSADORES LUMINOSOS
PV1-..	FULL / EMPTY MICRO-SWITCH	PV1-..	MICRO LLENO / VACIO
RS232	SERIAL PORT	RS232	PUERTA SERIAL
RT	BALLAST	RT	BALAST
SAF	ANTIFLICKER BOARD	SAF	CIRCUITO ANTIFLICKER
SDY	DISPLAY BOARD	SDY	CIRCUITO DISPLAY
SM	CONTROL BOARD	SM	CIRCUITO CONTROL MAQUINA
ST	STARTER	ST	STARTER
TERM	THERMOSTAT	TERM	TERMOSTATO
TR	TRANSFORMER	TR	TRANSFORMADOR
TX....	DELAYED FUSE (X=COURRENT)	TX....	FUSIBLE RETARDADO (X=CORRIENT)

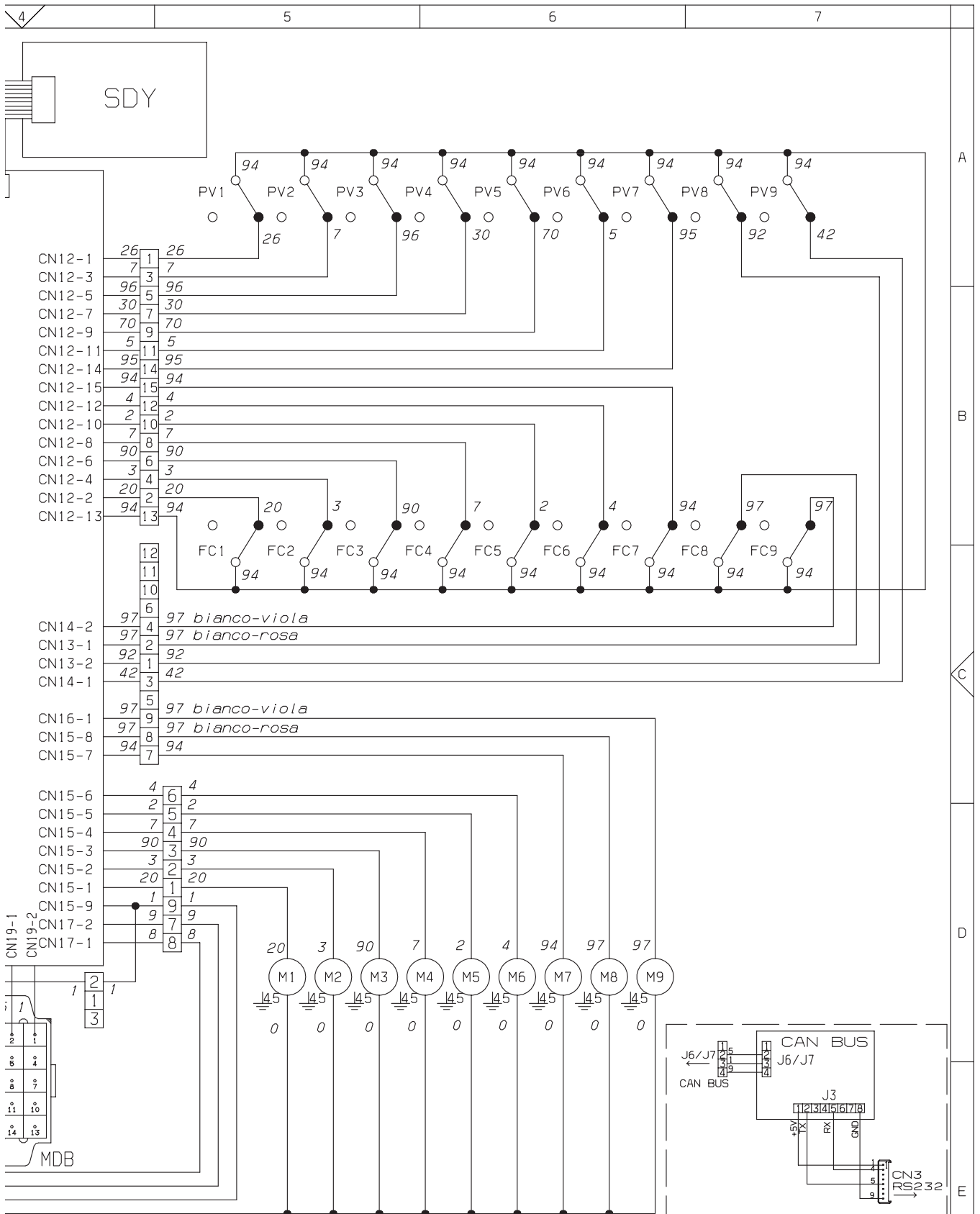


0 NERO	1 MARRONE	2 ROSSO	3 ARANCIO	4 GIALLO	5 VERDE	6 AZZURRO	7 ROSA	8 VIOLA	9 BIANCO	0 BLACK	1 BROWN	2 RED	3 ORANGE	4 YELLOW	5 GREEN	6 BLUE	7 LIGHT BLUE	8 PINK	9 VIOLET	0 GREY	1 WHITE	2 NOIR	3 MARRON	4 ROUGE	5 JAUNE	6 VERT	7 BLEU CIEL	8 ROSE	9 BRIS	0 BLANC	1 SCHWARZ	2 ROT	3 BRAUN	4 ORANGE	5 GELB	6 GRUEN	7 BLAU	8 GELBLEBLAU	9 ROSA	0 LILLA	1 GRAU	2 WEISS	3 NEGRO	4 MARRON	5 ROJO	6 NARANJA	7 AMARILLO	8 VERDE	9 OSCURO	0 AZUL CLARO	1 ROSA	2 BRIS	3 BLANCO	4
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BISTANDARD	NECTA VENDING SOLUTIONS SpA A company of N&W GLOBAL VENDING GROUP		MODELLO E - EM Series <i>Bistandard</i>	GRUPPO SCHEMA ELETTRICO FUNZIONALE	DATA 09-04-96	FOGLIO 1 / 1	DISEGNATO BONACINA	CONTROLLATO MONGUZZI
					LEGENDA		CODICE 608528402	
	4	5	6	7				



BELLAGNO 1978	NECTA VENDING SOLUTIONS SpA A company of N&W GLOBAL VENDING GROUP		MODELLO EV 840 <i>Bistandard</i>	GRUPPO SCHEMA ELETTRICO FUNZIONALE	DATA 25-01-97	FOGLIO 1/1	DISEGNATO BONACINA	CONTROLLATO MONGUZZI	
	LEGENDA							CODICE 608529302	
	4		5		6		7		

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