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 USA
## K52-S

## TECHNICAL MANUAL

## INSTALLATION AND MAINTENANCE

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## INDEX OF SECTIONS

## 1 - GENERAL INFORMATION

1.1 Introduction ..... Page 2
2 - TECHNICAL DATA
2.1 External dimensions ..... 3
2.2 Table of K52-S technical data ..... 3
3-INSTALLATION INSTRUCTIONS
3.1 Pre-Installation ..... 4
3.2 Connections ..... 4
3.3 Assembly instructions ..... 5
3.4 Voltage-change ..... 8
4 -INSTRUCTIONS FOR MAINTENANCE
4.1 Control board K52-S ..... 9
4.2 MPT/3-MYSUN : Programming using the keyboard ..... 10
4.3 Remote controls ..... 14
4.4 Periodic control procedures ..... 15
4.5 Demolition of the machine ..... 15
4.6 Waste materials ..... 15
4.7 Maintenance ..... 16
4.8 K52-S Spare parts list ..... 22
4.9 Troubleshooting and rapid diagnostics ..... 23
5 - CIRCUIT DIAGRAMS
5.1 Circuit diagram legend ..... 24

### 1.1 INTRODUCTION

## IMPORTANT

BEFORE OPERATING THE MACHINE, READ THE TECHNICAL INSTRUCTIONS CONTAINED IN THIS TECHNICAL MANUAL CAREFULLY AND COMPLETELY.

This Technical Manual is designed for use by installers and operators, and should be read carefully and completely before the machine is operated.
This manual contains all the instructions and information necessary to operate the machine:

- Correct installation of the machine.
- Description of the functions of the machine.
- Circuit diagrams.

The installers and the operators can use this manual to understand the characteristics of the machine and to learn the correct operating procedure.

## THE UNIT IS SUPPLIED FOR INPUT VOLTAGE AT 230V ~ 60 Hz AND IT IS SUPPLIED WITH OUT THE FEEDING CABLE

To make a power cable connection, make reference to the chapter "INSTALLATION INSTRUCTIONS " paragraph "ASSEMBLY INSTRUCTIONS" table 2 and to the K52 nº 2/6 diagram.
To make a voltage-change, make reference to the chapter "INSTALLATION INSTRUCTIONS" paragraph "VOLTAGE-CHANGE".
THE MAGNETOTHERMIC DIFFERENTIAL MUST BE INSTALLED IN THE POWER SUPPLY BOARD OF THE ESTHETICAL CENTRE AND IT MUST BE DONE BY THE CENTRE ITSELF.

K52-S: ( $2 \times 32 \mathrm{~A}-30 \mathrm{~mA}$ ) to feed 230 V ~
( $3 \times 25 \mathrm{~A}-30 \mathrm{~mA}$ ) to feed 230V-3~
The installation must be done by technical personnel.
THE POWER SUPPLY CONNECTION (UNIT- BOARD) MUST BE DONE BY THE CENTRE. THE SKILLED TECHNICIAN MUST USE A CERTIFIED CABLE WITH THE PROPER SECTION AND WITH ADEQUATE MECHANICAL PROTECTION, IN ACCORDANCE WITH THE RULES IN FORCE.

SEE CAHAPTER 2.2 TABLES FOR TECHNICAL DATA "POWER SUPPLY CABLE SECTION"

TO HAVE A CORRECT USE OF THE EQUIPMENT, THE ROOM TEMPERATURE MUST NOT EXCEED THE $33^{\circ} \mathrm{C}$ DEGREES. IF ROOM TEMPERATURE EXCEEDS THIS VALUE, WE SUGGEST TO UTILIZE AN AIR-CONDITIONING UNIT.

### 2.1 EXTERNAL DIMENSIONS

EXTERNAL DIMENSIONS
MAXIMUM LENGTH
MAXIMUM WIDTH
MAXIMUM HEIGHT
WEIGHT
M
M

### 2.2 TABLE OF TECHNICAL DATA K52-S

| K52-S | UNIT | DATA |  |
| :--- | :---: | :--- | :---: |
|  |  |  |  |
| POWER SUPPLY | V | $230 \mathrm{~V} 3 \sim$ | $(230 \mathrm{~V} \sim$ |
| POWER ABSORPTION | KW | 5,6 | $(18)$ |
| CURRENT ABSORPTION | A | 26 | 0,95 |
| POWER FACTOR CORRECTION | $\mathrm{COS} \varphi$ | 0,98 | $(4)$ |
| FREQUENCY | Hz | 60 |  |
| SECTION OF POWER CABLE | $\mathrm{mm}^{2}$ | 6 |  |
| CALORIES EMITTED | $\mathrm{Kcal} / \mathrm{h}$ | 2889 |  |
| HEAT DISSIPATION | $\mathrm{Kcal} / \mathrm{h}$ | 1926 |  |
| EXAUST AIR FLOW | $\mathrm{m} 3 / \mathrm{h}$ | 1500 |  |
| FACIAL LAMPS TYPE | N. | 3 KALFASUN 610 |  |
| BED LAMPS TYPE | N. | 18 KALFASUN B14 RAPID 100W |  |
| SKY LAMPS TYPE | N. | 18 KALFASUN B14 RAPID 80W |  |

## 3．1 PRE－INSTALLATION

In order to ensure correct operation of the machine，it should be installed in an area which has been prepared as shown in the figure．


## 3．2 CONNECTIONS

－The area in which the machine is installed must be adequately ventilated．
－The metal structure of the machine is earthed by means of insulated wires connected to the earth terminal in the electrical junction box．
－The earth circuit must be in full compliance with IEC standard 64－8，section IX．
－The earth connection must also be fitted to low－voltage systems situated in wet or very damp areas（if the voltage to earth is in excess of 25 V for alternating current or 50 V for direct current）．
－The earth wires connected to every part of the various sections of the machine and the earth wires from the various power circuits and user groups must be connected to a single earthing circuit．
－Ensure that the materials used for the earth system are suitably robust and provided with adequate protection．
－The connection to the main earth terminal should be as short as possible．The earth wires should not be subjected to mechanical stress of any kind，and must be protected against corrosion．

## 3．3 ASSEMBLY INSTRUCTIONS

## SEE ENCLOSED TABLES 1 AND 2

1－Fix the base $\mathbf{A}$ to the lateral $\mathbf{B}$ with the screws M8X20．
2 －Place the bed $\mathbf{C}$ on the base $\mathbf{A}$ ，fit it in the frontal part and fix it in the back by the specific plates and by the 4 self－tapping screws $3.9 \times 35$ ．
3 －Insert the two brackets $\mathbf{D}$ which support the upper section into the pushing in the lateral section．Ensure that the two limit－position bolt $\mathbf{F}$ face upwards as shown in the table 1.

4 －Slide the upper section $\mathbf{E}$ onto the support brackets $\mathbf{D}$ as far as allowed by the two limit－position bolts．
5 －Fix the upper section $\mathbf{E}$ to the brackets $\mathbf{D}$ using the two $4.2 \times 13$ self－tapping screws provided $\mathbf{F}$ ．
6 －Attach the body ventilation unit $\mathbf{G}$ to the upper section，fasten whith the specific screws M6x20

7 －Put the boxes $\mathbf{H 1}$ and $\mathbf{H 2}$（see table 1）．
8 －Make the following connections：
－32－pin connector from sky to the box H2（right）．
－24－pin connector from bed to the box H1（left）．
－10－pin connector from lateral to the box H1（left）．
－6－pin connector from the box $\mathbf{H} \mathbf{2}$ to the box $\mathbf{H 1}$ ．
－3－pin connector from ventilation box to the sky．
9 －Connect the batteries placed in the internal side of the box $\mathbf{H 1}$ to put in motion the automatic rising function．
10 －Connect the feeding cable to the box $\mathbf{H 1}$ ，as indicated in table 2.
11 －Fix the plastic panel $\mathbf{L}$ using the 4 screws M6．
12 －Connect the unit to the input voltage．


TABLE 1

POWER CABLE CONNECTION TO FEED 230V ~


## IMPORTANT !

## ALWAYS DISCONNECT THE MACHINE FROM THE POWER SUPPLY BY PRESSING THE SWITCH MAGNETOTHERMIC DIFFERENTIAL BEFORE CARRYING OUT MAINTENANCE

### 3.4 VOLTAGE CHANGE

To enter the terminal board for power supply, placed inside the control cassette, make reference to table 2.

- TO MAKE VOLTAGE FROM 230V - 3 ~ TO 230 V ~

1) Change the feeding cable with a cable of adeguate section $\varnothing 6 \mathrm{~mm}^{2}$.
2) Change the thermomagnetic differential switch placed in the feeding board of the estetical centre system with one having the following characteristics: $2 \times 32 \mathrm{~A}-30 \mathrm{~mA}$.
3) Remove the metallic jumper.
4) Remove the connections shown in picture 2 .
5) Make the connections with wire $\varnothing 6 \mathrm{~mm}^{2}$ as shown in picture 1 .

- TO MAKE VOLTAGE FROM 230V ~ TO 230 V-3 ~

1) Change the feeding cable with a cable of adeguate section $\varnothing 4 \mathrm{~mm}^{2}$.
2) Change the thermomagnetic differential switch placed in the feeding board of the estetical centre system with one having the following characteristics: $3 \times 25 \mathrm{~A}-30 \mathrm{~mA}$.
3) Remove the connections shown in picture 1.
4) Make the connections with a metallic jumper.
5) Make the connections with wire $\varnothing 4 \mathrm{~mm}^{2}$ as shown in picture 2 .


## 4 －INSTRUCTIONS FOR MAINTENANCE

## 4．1 CONTROL BOARD K52－S




Pushing this button you start the tanning treatment．

The time button is used to set the time，in minutes，for the time session．May be used by autorized personnel only．


The buttons marked＂＋＂may be used to increase the power of the fan．

When this button is pressed，the upper section descends to the normal operating position．Downward movement of the head is controlled by impulses；if the button is released，the downward movement is interrupted．

This lamp lights when the appliance has been operated for 100 hours to indicate that routine maintenance must be performed．


I
 lamps are switched off and the upper section （ceiling）moves upwards．The tanning session is concluded．

The buttons marked＂－＂may be used to decrease the power of the fan．

Press this button to adjust the height of the head as desired．Upward movement of the ceiling is controlled by impulses；if the button is realesed，the upward movement is interrupted．

This lamp lights when the appliance has been operated for 400 hours to indicate that it is necessary to call a qualified technician for special maintenance．


Pushing this buttons you enter the programme following the customer skin type and how long does it need to tan．

## IMPORTANT

MPT／3 electronic board permits to use the remaining time of a session in case of temporary interruption of power，with the relative＂reset＂of the unit．The remaining time will flash in the display：pushing the Start button you can use such time，while pushing the Stop button you set to zero such time and the unit is ready for a new session．


## SELECTOR

1－Switches on the high－pressure facial lamps．
2 －Switches on all the lamps（ high－pressure and low－pressure ）．
3 －Switches on the low－pressure ceiling and bed lamps．
Selection of the lamps must be made by the qualified personnel of the tanning centre and must be set before the session．
The machine is equipped with a radio／cassette－player，so that the client can listen to music during the tanning session．The use of headphones is recommended．

## 4．2 MPT／3－MYSUN ：PROGRAMMING USING THE KEYBOARD

| Function | Code | Value |
| :--- | :---: | :---: |
| Coin time | PU | $1-40$ |
| Sitting time for skin type 4 | P 4 | $1-40$ |
| Sitting time for skin type 3 | P 3 | $1-\mathrm{P} 4$ |
| Sitting time for skin type 2 | P 2 | $1-\mathrm{P} 3$ |
| Sitting time for skin type 1 | P 1 | $1-\mathrm{P} 2$ |
| Board total operating hours reading | OF | $\mathrm{XX}-\mathrm{XX}$ |
| Number of sittings performed reading | nS | $\mathrm{XX}-\mathrm{XX}$ |
| Board manufacture date reading | dC | $\mathrm{WW}-\mathrm{YY}$ |

To be able to read or modify the MPT／3 board base parameters，the board must be programmed using the following procedure：
1）Turn on power to the device，then press the Time key，followed by the II key，and keep them pressed for approximately 4 seconds．
＂PU＂will appear on the display，indicating that the first parameter regarding the coin sitting time can now be accessed and changed as follows：
－Press the start key and the machine will display the currently－loaded value；
－Use the＋or－key to increase or decrease the value；
－Press the stop key to confirm the change and exit from the program；
－Return the machine to normal operating mode by cutting off power for a few seconds．
Use the＋or－keys to select the program to be modified or displayed．

## PU－COIN TIME

When＂PU＂is displayed，the coin sitting time program may be accessed．Press the start key to display the currently－entered value，and then the + or－key to make the desired changes．Press stop to confirm the change and exit from the program．Once exited，the display will read＂P4＂．
P4－SITTING TIME FOR SKIN TYPE 4 （Dark olive complexions）
Follow the procedure outlined above for the PU program．Once exited，the display will read＂P3＂．
P3－SITTING TIME FOR SKIN TYPE 3 （Medium complexions）
Follow the procedure outlined above for the P 4 program．
Once exited，the display will read＂P2＂．
P2－SITTING TIME FOR SKIN TYPE 2 （Light complexions）
Follow the procedure outlined above for the P 4 program．
Once exited，the display will read＂P1＂．
P1－SITTING TIME FOR SKIN TYPE 1 （Very light complexions）
Follow the procedure outlined above for the P4 program．
Once exited，the display will read＂OF＂．
OF－BOARD TOTAL OPERATING HOURS READING
When＂OF＂appears on the display，press the start key to display the total number of board operating hours． For example， 1234 hours will be divided into two parts（ 12 and 34 ）；use the time key to move between the two groups of numbers．The maximum value that can be entered is 8999 ．Press the stop key to exit the OF program．Once exited，the display will read＂$n S$＂．
nS－NUMBER OF SITTINGS PERFORMED READING
When＂$n S$＂appears on the display，press the start key to display the number of sittings．To read this number， repeat the procedure given above for the OF program．Push the stop key to exit the nS program．Once exited，the display will read＂dC＂．
dC－BOARD MANUFACTURE DATE READING
When＂dC＂appears on the display，press the start key to display the week number and，after having pressed the time key，the last two numbers of the year in which the board was manufactured．Push the stop key to exit the dC program．Once exited，the display will read＂PU＂．
At this point，programming has been completed．To return the machine to normal operational status， turn the electrical power off and then back on．

## PARAMETER PROGRAMMING

| Function | Code | Value |
| :---: | :---: | :---: |
| Final ventilation time | A0 | 1-5 |
| Function reserved | A1 | 00 |
| Sitting start delay | A2 | 0-40 |
| Up / down buttons activated/deactivated | A3 | Ab-dS |
| Coin accumulation function activated/deactivated | A4 | Ab-dS |
| START stand-by function activated/deactivated | A5 | Ab-dS |
| START button on keyboard activated/deactivated | A6 | Ab-dS |
| Mid session buzzer activated/deactivated | A7 | Ab-dS |
| Display time | A8 | Ab-dS |
| Time remaining storage | A9 | Ab-dS |
| Center code number setting (StartEst+StopEst) | E0 | 00-99 |
| Set code number of the sub centre | E1 | 0-99 |
| Card functioning mode | E2 | 0-3 |
| Serial number set for RS485 | E6 | 00-99 |
| Parameter copy from a second RS485 board (copy with Time key) | CP | - |
| Test function: 14' cycle, 4' cooling, 2' pause $\times$ three times (start/stop) | FC | - |
| Number of point/minute face only | C1 | 00-99 |
| Number of point/minute face only | C2 | 00-99 |
| Number of point/minute body session | C3 | 00-99 |
| Number of point/ minute body session | C4 | 00-99 |

To enter the second programming phase, proceed as follows:
Once the first programming phase has been completed, "PU" will appear on the display. Press, in this order, the Time key, the IV key and the I key and hold them down for approx. 4 seconds. "AD" will appear on the display indicating that the second level of functions can now been accessed.

- Press the start key and the machine will display the currently-loaded value;
- Use the + or - key to increase or decrease the value;
- Press the stop key to confirm the change and exit from the program.


## A0 - FINAL VENTILATION TIME

When A0 appears on the display, it is possible to enter the program for modifying final ventilation time. Press the start key to display the currently-loaded value and use the + or - key to make changes. Press stop to confirm the change and exit the program. Once exited, "A1" will appear on the display.

## A1 - FUNCTION RESERVED

When A1 appears on the display, it is possible to enter the program reserved for future applications. The entered value is irrelevant. Press stop to confirm the change and exit the program. Once exited, "A2" will appear on the display.

## A2 - SITTING START DELAY

When A2 appears on the display, it is possible to enter the program for modifying the delay time at the beginning of a sitting, with an external start control. Repeat the procedure given above under program A1. Once the program has been exited, "A3" will appear on the display.
A3 - UP DOWN BUTTONS ACTIVATED/DEACTIVATED
Enter program A3 by pressing the start button. "Ab" (up/down activated) or "dS" (up/down deactivated) will appear on the display. Change the setting using the + or - key. Press stop to confirm the change and exit the program. Once exited, "A4" will appear on the display.
A4 - COIN ACCUMULATION FUNCTION
Enter program A4 by pressing the start button. "Ab" (accumulation activated) or "dS" (accumulation deactivated) will appear on the display. Change the setting using the + or - key. Press stop to confirm the change and exit the program. Once exited, "A5" will appear on the display.

A5－START STAND－BY FUNCTION（with coin accumulation activated）
Enter program A5 by pressing the start button．＂Ab＂（stand－by activated）or＂dS＂（stand－by deactivated）will appear on the display．Change Ab or dS status using the＋or－key．Press stop to confirm the change and exit the program．Once exited，＂A6＂will appear on the display．

## A6－START BUTTON ON KEYBOARD

Enter program A6 by pressing the start button．＂Ab＂（key activated）or＂dS＂（key deactivated）will appear on the display．Change Ab or dS status using the + or－key．Press stop to confirm the change and exit the program．Once exited，＂A7＂will appear on the display．

A7－MID SESSION BUZZER ACTIVATED／DEACTIVATED
Enter program A7 by pressing the start button．＂Ab＂（buzzer activated）or＂dS＂（buzzer deactivated）will appear on the display．Change Ab or dS status using the＋or－key．Press stop to confirm the change and exit the program．Once exited，＂A8＂will appear on the display．

## A8－DISPLAY TIME

Enter program A8 by pressing the start button．＂Ab＂（display activated）or＂dS＂（display deactivated）will appear on the display．Change Ab or dS status using the + or－key．Press stop to confirm the change and exit the program．Once exited，＂A9＂will appear on the display．

## A9－TIME REMAINING STORAGE

Enter program A9 by pressing the start button．＂Ab＂（storage activated）or＂dS＂（storage deactivated）will appear on the display．Change Ab or dS status using the＋or－key．Press stop to confirm the change and exit the program．Once exited，＂E0＂will appear on the display．

## E0－CENTER CODE NUMBER SETTING

When EO appears on the display，it is possible to enter the program to set the code number of the tanning center for that board．Press the external start stop keys and，using the＋and－keys，enter the number of the center．Press stop to confirm the change and exit the program．Once exited，＂E1＂will appear on the display．

## E1－SET CODE NUMBER OF THE SUB－CENTRE．

For MPT／3－TRS／1 versions precedent to the 6.00 version：E1 indicates the cost in points that the card debits when it is set in card mode，from a minimum of one point to a maximum of 99 ．With the 6.00 and later version，the E1 parameter has changed meaning and has become the number of the franchising agency．The card reads the number of the franchising agency from the card and memorizes the value in the E1 parameter．At this point，with the SUN MANAGER software，that value can be read and the cost debited to the agency that issued the chip card．
In the versions successive to 6.00 ，the E1 parameter（cost in points）has been substituted by the parameters C1－C2－C3－C4．

## E2－CARD FUNCTIONING MODE

When E2 appears on the display，it is possible to enter the program to select the operation mode of the card reader installed on the machine．Press the start key to confirm the already－loaded value，or use the＋and－ keys to make changes．Press stop to confirm the change and exit the program．Once exited，＂E3＂will appear on the display．
＂Zero＂mode indicates that the reader has not been activated．

## E6－SERIAL NUMBER SET FOR RS485

When E 6 appears on the display，it is possible to enter the program to set the board i．d．serial number for connection to a computer．Press start to enter the program and use the + and－keys to make changes． Press stop to confirm the change and exit the program．Once exited，＂CP＂will appear on the display．

## CP－PARAMETER COPY FROM A SECOND RS485 BOARD

With the display showing CP you access the programme that allows the copying of set parameters from one card to another．The cards must be connected through the serial connection（terminals 20 and 21）．Press Start and gain access to the programme：Press the Time key for 4 seconds in order to carry out the copying of the parameters．Press Stop to exit from the programme．On exiting the display shows FC．

## 4 －INSTRUCTIONS FOR MAINTENANCE

FC－TEST FUNCTION
When FC appears on the display，it is possible to enter the program that allows the board to perform three complete self－test routines．Push start to enter the program and the board automatically carries out a cycle of three self－test routines made up of three 14－minute operating cycles，each with its respective 4－minute cool－down period and 2－minute pause．
C1－NUMBER OF POINTS／MINUTE FACE ONLY．
With the display showing C 1 you access the programme that allows the insertion of the number of points that are deducted at every face session，or for every token in those cases in which the card is programmed on card 2 mode， whenever the card is used with a matched chip card reader．Example：if we wish to enter 4000 points for the face session we must set up the card with $\mathrm{C} 1=40, \mathrm{C} 2=00$ ．Press the Start key to accept the parameters already memorized， or else the keys＋or－to carry out the variation．Press the Stop key to confirm the variation and exit from the programme．On exiting the display will show C2．

## C2－NUMBER OF POINTS／MINUTE FACE ONLY．

With the display showing C2 you access the programme that allows the insertion of the number of points that are deducted at every face session，or for every token in those cases in which the card is programmed on card 2 mode， whenever the card is used with a matched chip card reader．Example：if we wish to enter 4000 points for the face session we must set up the card with $\mathrm{C} 1=40, \mathrm{C} 2=00$ ．Press the Start key to accept the parameters already memorized， or else the keys＋or－to carry out the variation．Press the Stop key to confirm the variation and exit from the programme．On exiting the display will show C3．

## C3－NUMBER OF POINTS／MINUTE BODY SESSION．

With the display showing C3 you access the programme that allows the insertion of the number of points that are deducted at every body session，or for every token in those cases in which the card is programmed on card 2 mode， whenever the card is used with a matched chip card reader．Example：if we wish to enter 4000 points for the body session we must set up the card with $\mathrm{C} 3=40, \mathrm{C} 4=00$ ．Press the Start key to accept the parameters already memorized， or else the keys＋or－to carry out the variation．Press the Stop key to confirm the variation and exit from the programme．On exiting the display will show C4．

C4－NUMBER OF POINTS／MINUTE BODY SESSION．
With the display showing C4 you access the programme that allows the insertion of the number of points that are deducted at every body session，or for every token in those cases in which the card is programmed on card 2 mode， whenever the card is used with a matched chip card reader．Example：if we wish to enter 4000 points for the body session we must set up the card with $\mathrm{C} 3=40, \mathrm{C} 4=00$ ．Press the Start key to accept the parameters already memorized， or else the keys＋or－to carry out the variation．Press the Stop key to confirm the variation and exit from the programme．On exiting the display will show AO．

At this point，programming has been completed．To return the machine to normal operational status，turn the electrical power off and then back on．

## MPT／3－MYSUN CIRCUIT BOARD TERMINALS：NUMBERING AND DESCRIPTION

1 ＝POWER SUPPLY PHASE．
$2=$ POWER SUPPLY NEUTRAL．
$3=$ CONTROL PHASE FOR FIRST LAMP SWITCH－ON．
$4=$ CONTROL PHASE FOR SECOND LAMP SWITCH－ON．
$5=$ CONTROL PHASE FOR LAMP COOLING FANS．
$6=$ CONTROL PHASE FOR ADJUSTABLE BODY－COOLING VENTILATION．
7 ＝COMMON CONTACT FOR ASCENT．
$8=$ NC CONTACT FOR ASCENT．
$9=$ NA CONTACT FOR ASCENT．
$10=$ COMMON CONTACT FOR DESCENT．
11 ＝NC CONTACT FOR DESCENT．
12 ＝NA CONTACT FOR DESCENT．
$13=$ COMMON
14 ＝ENABLE START
15 ＝START．
$16=$ STOP
17 ＝COMMON．
18 ＝SELECTOR 1
19 ＝SELECTOR 2
20 ＝SERIAL＋
21 ＝SERIAL－

## 4．3 CONNECTING A COIN BOX

An impulse or timer coin box may be connected to the MPT／3 board．
For the former，at each impulse，the assigned time per coin will be displayed and this time may be accumulated using the accumulation function．
1）Connect the two wires of the impulse coin box（G）to numbers 1 and 3 on the terminal strip（MG）located inside the lateral．Please refer to electrical diagram＂K52－S＿6／6＂．The coin box cable input is located near the power supply cable input in the lateral．Picture 1.

For the latter，the contact remains closed for the duration of the time entered for the timer． Please note，the time entered for the MPT／3 board must be greater than that of the timer． 2）Connect the two wires of the timer coin box（G）to numbers 1 and 3 on the terminal strip（MG）located inside the lateral and create a jumper between terminals 1 and 4 ． Please refer to electrical diagram＂K52－S＿6／6＂．The coin box cable input is located near the power supply cable input in the lateral．Picture 2.


Numbers 1 and 2 of the terminal board MG are used for enable start．（Enable Start ）．

Numbers 1 and 4 of the terminal board MG are used for remote stop．


Number 1 and 3 of the terminal board MG are used for Start．

## 4．4 PERIODIC CONTROL PROCEDURES

Check that the electrical safety devices，and the acoustic／illuminated signal devices and alarms are undamaged and that they function correctly．Check that the equipment and devices in the electrical control box are in satisfactory condition．
The standby batteries should be replaced after 1000 hours（or three years）of operation．
These checks must be performed by qualified personnel

## 4．5 DEMOLITION OF THE MACHINE

Each country applies specific legislation concerning the disposal of machinery．Disposal of this machine must be carried out in compliance with the regulations laid down by local legislation and bye－laws．Dismantle the machine and group the various parts according to their chemical characteristics．

## Dismantling of the machine must be performed by qualified personnel

## 4．6 WASTE MATERIALS

The high－pressure lamps are considered as disposable waste materials and all the materials regarding the packing．Due to their characteristics，these lamps are classified as non－toxic and non－harmful special waste materials．Disposal of the lamps must therefore be effected as required by the appropriate legislation．
Batteries must be discharged as differentiated waste following the specific rules in force in each country．

DEFINITION OF SPECIAL WASTE MATERIAL：Residual material deriving from industrial processes or agricultural，artisan，commercial or service activities which，in view of their quantity of characteristics，are not classified as normal household refuse．

# IMPORTANT！ <br> ALWAYS DISCONNECT THE MACHINE FROM THE POWER SUPPLY BY PRESSING THE SWITCH MAGNETOTHERMIC DIFFERENTIAL BEFORE CARRYING OUT MAINTENANCE 

## 4．7 MAINTENANCE



## PILOT LAMP FOR ROUTINE MAINTENANCE

This lamp lights when the appliance has been operated for 100 hours to indicate that routine maintenance nust be performed：
－cleaning of the internal and external filters．
The signal light is taken off as follows：
－push button I，
－Keeping pushed button I，push button II，
－Keeping pushed button I，II，push button III，
－Keeping pushed button I，II，III for 4 seconds．
The procedure must be done with the equipment in pause．


## PILOT LAMP FOR SPECIAL MAINTENANCE

This lamp lights when the appliance has been operated for 400 hours to indicate that it is necessary to call a qualified technician for special maintenance：
－cleaning of the internal and external filters
－replacement of the high－pressure and low pressure lamps．
－Grease the screw on the latch mechanism．Use MOLIKOTE BR2，only．This lubrificant is available from SPORTARREDO spa
－Check that the timer devices are undamaged and running correctly．
－Check that the warning for SAFETY AND ACCIDENT PREVENTION is readable and in satisfactory condition．
－Every 800 hours change the reflector，UV－filters and the high pressure starters；clean the fans and internal parts of the machine．
The signal light is taken off as follows：
－push button I，
－Keeping pushed button I，push button II，
－Keeping pushed button I，II，push button＋，
－Keeping pushed button I，II，＋，push button－，
－Keeping pushed button I，II，＋，－for 4 seconds．
The procedure must be done with the equipment in pause．

## REMOVING AND CLEANING THE PLEXIGLASS PANELS

We recommend to use household liquid detergents containing ammonia（i．e．detergents for cleaning glass）．

## N．B．DO NOT USE ALCOHOL OR ALCOHOL－BASED PRODUCTS FOR CLEANING

## CLEANING THE HIGH PRESSURE LAMPS FILTERS

Clean the filters internally and externally using a $50 \%$ solution of water and denatured alcohol．
Any tampering with the appliance or the use of non－original material or parts may lead to injury．In such cases，the manufacturer declines all civil and penal liability， and the warranty shall automatically be considered null and void．



## ACTUATOR SUBSTITUTION FOR LOWERING THE CEILING



## ACTUATOR SUBSTITUTION FOR LOWERING THE CEILING

－Remove the $n^{\circ} 6$ screws and remove the panel from the lateral．
－Disconnect from the terminal board the feeding wires of the actuator．
－Support the ceiling．
－Unscrew the block D and release the screw nut．
－Unscrew the block E，release the screw nut and release the actuator．
－Replace the actuator whith an approved original spare part cod．4027．0010．0．4．
－To assemble the part act the opposite procedure，by paying attention to connect the feeding wires of the motor to the terminal board，as shown in table 7 （ blue wire，red wire ）．


## ADJUSTING THE LIMIT SWITCHES

- Fixing the ring 1 at a distance $\mathbf{A B}$ of 4 cm . With the allen screw $\mathbf{C}$.
- Loosen the rings 2 and 3 of the limit stop nuts 1 and 2 and make sure that the limit stop nuts are in axis between them and that the small sliding rod slides inside them smooth.
- Make with impulses the up and down cycle of the sky adjusting the limit stop nuts of the lowered sky and of the raised sky by the release of the limit stop nuts.
- Once made the adjustment, fix the rings 2 and 3 with the allen screws $\mathbf{C}$.
- Perform a cycle of upward and downward movement in order to check that the unit operates correctly.




## 4．8 K52 SPARE PARTS LIST

| REF． | $\mathbf{N}^{\circ}$ | CODE NUM． | DESCRIPTION |
| :---: | :---: | :---: | :---: |
| 1 | 18 | 4028.1001 .06 | MAGNETEK D100 60Hz BALLASTS |
| 2 | 18 | 4028.1001 .05 | MAGNETEK D80 60Hz BALLASTS |
| 3 | 3 | 4028.1000 .02 | MYSUN 610 220／230／240V FEEDER |
| 4 | 5 | 4028.4300 .00 | CONDENSER $65 \mu \mathrm{~F} 400 \mathrm{~V}$ |
| 5 | 1 | 4028.2100 .04 | LAMPS CONTACTOR FANTINI \＆COSMI HR1710 |
| 6 | 1 | 4028.2100 .00 | LAMPS CONTACTOR FANTINI \＆COSMI HR0910 |
| 7 | 1 | 4028.4500 .01 | CONTROL RELAY FOR COOLING FAN UNIT FINDER 60.13 |
| 8 | 1 | 4028．4550．01 | UNDECAL RELAY SOCKET FINDER 90.27 |
| 9 | 1 | 14703．018．0．0 | POWER SUPPLY MODULE 12VCC U |
| 10 | 1 | 4028.1010 .00 | 220－230／30V 60VA TRANSFORMER |
| 11 | 1 | 4027.5010 .00 | 26MB60 DIODE BRIDGE |
| 12 | 1 | 4026.0010 .00 | RCT／1 ELECTRONIC CARD |
| 13 | 1 | 4027.3020 .16 | 12V 1．2AH ACCUMULATOR |
| 14 | 2 | 4028.3122 .00 | LEGRAND 37089 FUSE－HOLDER |
| 15 | 8 | 4028.3120 .04 | TERMINAL LEGRAND 37064 |
| 16 | 1 | 4028.3121 .02 | TERMINAL LEGRAND 37304 |
| 17 | 3 | 4028.0021 .00 | EBM W2S130 AA0308 LAMPS COOLING FAN |
| 18 | 1 | 4028.0040 .03 | EV TGO 60／1 FAN |
| 19 | 1 | 4028.0040 .01 | EV TGA 60／1 FAN |
| 20 | 1 | 4028.0042 .00 | EBM D2E097 BD04 45 CEILING COOLING FAN |
| 21 | 3 | 14073．008．0．0 | BPK 610 REFLECTOR |
| 22 | 18 | 4028.4012 .01 | LAMP KALFASUN B14－S RAPID 100W |
| 23 | 18 | 4028.4012 .00 | LAMP KALFASUN B14 RAPID 80W |
| 24 | 3 | 4028.4000 .00 | KALFASUN 610 230V UV－A LAMP |
| 25 | 3 | 4028．4400．04 | ZRM6－ES－B IGNITOR |
| 26 | 36 | 4028.3310 .00 | NEON HOLDER WITHOUT STARTER |
| 27 | 36 | 4028.3310 .01 | NEON HOLDER WITH STARTER |
| 28 | 36 | 4028.4020 .03 | STARTER PHILIPS S12 |
| 29 | 2 | 16976．002．0．0 | KALFALUX TR－T 26X21 FILTER |
| 30 | 2 | 16976．011．0．0 | KALFALUX TR－T 26X18 FILTER |
| 31 | 9 | 16976．000．0．0 | COBALT FILTER（DIMENSIONS 250 X 75 ） |
| 32 | 1 | 16916．019．0．0 | BED PLEXIGLASS K52 |
| 33 | 1 | 16916．018．0．0 | CEILING PLEXIGLASS K52 |
| 34 | 1 | 4028.5510 .00 | PLUG WIELLAND WITH 3 PINS ST18／3 S |
| 35 | 1 | 4028.5510 .00 | SOCKET WIELLAND WITH 3 PINS ST18／3 B1 |
| 36 | 1 | 14003．000．0．0 | VENTILATION BOX K52 |
| 37 | 1 | 4027．0010．04 | LINEAR ACTUATOR ALI 3 |
| 38 | 2 | 16960．008．0．0 | TRACTION SPRING |
| 39 | 1 | 14703．003．0．0 | ＂MPT／3－MYSUN＂ELECTRONIC TIMER BOARD |
| 40 | 1 | 4027.3025 .03 | RADIO MAJESTIC SD731D |
| 41 | 1 | 4027.3026 .00 | PANNEL JACK |
| 42 | 2 | 4027.3030 .00 | LOUDSPEAKER FAITAL |
| 43 | 1 | 4028.6000 .01 | HOUR COUNTER REVALCO |
| 44 | 1 | 4028.2187 .03 | SELECTOR AT 3 STEADY POSITIONS |
| 45 | 1 | 4028.2185 .05 | CONTACT FOR SELECTOR |

### 4.9 TROUBLESHOOTING AND RAPID DIAGNOSTICS

- The solarium does not switch on and the pushbutton display panel does not light.

1 - Check that the power supply terminal board "M.AL" is connected to the power supply.
See enclosed circuit diagram K52 $\mathrm{n}^{\circ}$ 2/6.
2 - Check the fuses on the timer board "MPT".
3 - Check the voltage ( $230 \mathrm{~V} \sim$ ) across terminals 1 and 2 on board "MPT".
See enclosed circuit diagram K52 $\mathrm{n}^{\circ}$ 6/6.

- The display panel lights up but the solarium does not switch on when START is pressed.

1 - Check the existing connection "bridge or remote control by token meter" across terminals 1 and 2 on connector "Mg". See enclosed circuit diagram K52 n ${ }^{\circ} 6 / 6$.
2 - Switch the solarium off using the overload cut-out switch, wait 5 seconds and then switch on again.
3 - Check that the timer board "MPT" is programmed correctly ( program P5).
See Section 4 - " INSTRUCTIONS FOR MAINTENANCE ", par. 4.2.

- The display panel lights up but when START is pressed the ventilation system only is switched on.

1 - Check that remote control switches "HL1" "HL2" operate correctly. See enclosed circuit diagram K52 n ${ }^{\circ}$ 2/6.
2 - Check the voltage 230 V ~ across terminals 2 and 3 of the timer board "MPT".
See enclosed circuit diagram K52 $n^{\circ} 6 / 6$.

- The display panel lights up but when START is pressed only the lamps switch on (no ventilation).

1 - Check that remote control switch "RV" operates correctly. See enclosed circuit diagram K52 no 2/6.
2 - Check the voltage 230 V ~ across terminals 2 and 5 of the timer board "MPT".
See enclosed circuit diagram K52 $n^{\circ}$ 6/6.

- Body cooling system inoperative or cannot be regulated.

1 - Check the voltage ( variable up to a maximum of $230 \mathrm{~V} \sim$ ) across terminals 2 and 6 of the timer board ("MPT"). See enclosed circuit diagram K52 $\mathrm{n}^{\circ} 6 / 6$.

- One of the high-pressure or low-pressure does not switch on.

1 - Check for voltage on the wiring to the lamp. Check the ignition reactor or the starter for the lamp.
WARNING: The central terminals of the igniters for the high-pressure lamps carry extremely high voltage.

- The ceiling section cannot be raised or lowered.

1 - Check fuses "F1", "F2", "F3", which are located inside control box.
2 - Check that the primary of transformer "T1" carries a voltage of 230 V ~, and that the secondary carries $24 \mathrm{~V} \sim$. See enclosed circuit diagram K52 $n^{\circ} 2 / 6$.
3 - Check that the output of the diode bridge "PD" carries 30 Vcc . See enclosed circuit diagram K52 $\mathrm{n}^{\circ}$ 2/6.
4 - Check that circuit board "RCT", motor "M" and circuit board "MPT" function correctly. See enclosed circuit diagrams K52 $\mathrm{n}^{\circ} 2 / 6$ and 6/6.

- The ceiling section cannot be raised or lowered in case of power failure.

1 - Check that the standby battery " B " is charged.
2 - Check that circuit board "RCT" functions correctly.
3 - Check the voltage 24V DC across terminals 9 and 11 of the terminal board "ML". See enclosed circuit diagram K52 n ${ }^{\circ}$ 6/6.

- The radio does not work.

1 - Check that the output of the power supply module "AL1" carries 12VDC. See enclosed circuit diagram K52 $n^{\circ}$ 2/6 and 6/6.
2 - Check the voltage 12V DC across terminals 10 and $\stackrel{\perp}{=}$ of the terminal board "ML". See enclosed circuit diagram K52 $\mathrm{n}^{\circ} 6 / 6$.

5－CIRCUIT DIAGRAMS

## 5．1 CIRCUIT DIAGRAMS LEGEND

| SYMBOLS | DESCRIPTION | $\mathbf{N}^{\circ}$ Code |
| :---: | :---: | :---: |
| $\stackrel{1}{\square}$ | Earth terminal |  |
| 1AB－18AB | Ballasts for Kalfasun B14 RAPID 80W lamps | 4028.1001 .05 |
| 1AT－10AT | Ballasts for Kalfasun B14 RAPID 100W lamps | 4028.1001 .06 |
| AC | Igniter for Kalfasun 610 lamps | 4028.4400 .02 |
| RA－RB－RC | Ballasts for Kalfasun 610 lamps | 4028.1000 .02 |
| AR | 12 Vcc power supply module | 14703．018．0．0 |
| BA | Storage batteries（12V 1．2 Ah） | 4027.3020 .16 |
| CH | Selector | $\begin{aligned} & \hline 4028.2187 .03 \\ & 4028.2185 .05 \\ & \hline \end{aligned}$ |
| 1C－1C－3C．．．． | Power factor correction capacitors $65 \mu \mathrm{~F}$ | 4028.4300 .00 |
| CV | Capacitor $2 \mu \mathrm{~F}$ |  |
| CA | Connector between feeders cassettes |  |
| CD | Connector for bed lamps（ 24 poli ）． |  |
| CE | Connector for ceiling lamps（ 32 poli ）． |  |
| CB | Connector for control panel（ 10 poli ） |  |
| 1F | Fuse 1 A |  |
| 2F | Fuse 5 A |  |
| F3 | Fuse 5 A |  |
| h | Hour－counter | 4028.4600 .00 |
| HB | Contactor for low－pressure lamps | 4028.2100 .04 |
| HA | Contactor for high－pressure lamps | 4028.2100 .00 |
| L2 | Kalfasun Lamps B14 RAPID 80W | 4028.4012 .00 |
| L | Kalfasun Lamps 610 | 4028.4012 .01 |
| L1 | Kalfasun Lamps B14 RAPID 100W | 4028.4012 .01 |
| LSP－RSP | Loudspeakers | 4027.3030 .00 |
| mg | Terminal board for connection of remote control unit |  |
| M | Motor for ceiling． | 4027.0010 .00 |
| MB | Terminal board for bed |  |
| ML | Terminal board for lateral |  |
| MT | Terminal board for ceiling |  |
| MA | Terminal board for power supply |  |
| M | Terminal board for head feeders cassette |  |
| MPT | Switching circuit board，mod．＂MPT／3＂ | 14703．003．0．0 |
| RA | Radio | 4027.3025 .03 |
| RV | Control relay for cooling fan unit | 4028.4500 .01 |
| R－S－T | Phases of power supply |  |
| RCT | Circuit board for battery－charger and automatic control of ascent | 4026.0010 .00 |
| TM | Transformer 230V／ 30 V | 4028.1010 .00 |
| PD | Diode bridge | 4027.5010 .00 |
| V3－V4 | Cooling fan for high－pressure lamps | $\begin{aligned} & \hline 4028.0040 .03 \\ & 4028.0040 .01 \end{aligned}$ |
| Vg | Cooling fan for low－pressure lamps of bed | 4028.0021 .00 |
| V1 | Cooling fan for body | 4028.0042 .00 |
| V2 | Cooling fan for ceiling | 4028.0021 .00 |

CIRCUIT DIAGRAMS DESCRIPTION
1／6 Voltage－change diagram．
2／6 Pratical diagram of the bed feeders cassette（control unit）．
$3 / 6$ Pratical diagram of the head feeders cassette．
4／6 Pratical diagram of head．
5／6 Pratical diagram of bed．
6／6 Pratical diagram of lateral．

