



SIRMO GAMES S.A.
-GAME 1000-
GENERAL MANUAL

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Supply

The main card of the game (PCB 1000) should be supplied with a primary voltage included between 160 Va.c. to 240 Va.c.. If the primary voltage is 120 Va.c. (USA, ...) wiring of transformer should be changed.

Correct functioning of the card does not require any regulating.

Main voltages

These voltages do not require any functioning of the program. When power is on, they are set.

a.- Vcc : main voltage allowing supply of integrated circuits of the card. This voltage is 5 Vdc with an maximal intensity of 3.15A. It is protected by the fuse F1 (3,15A). The green LED L18 is lit if this voltage is present.

b.- G.I. (General Illumination) : this voltage allows to light up the lights of the playfield and is equal to 6,3 Vac with a maximal intensity of 3A. It is protected by a fuse of 3A (F8) and a green led L25 indicates its presence.

c.- Vflot : regulated voltage generated from the G.I., this voltage allows the connection of external peripherals to the game (floating mass in relation to the GND of the card). This voltage (8 Vdc) is protected by the fuse F9 (1A) and a green LED L26 indicates its presence.

d.- 50 Vac : this alternative voltage (50 Vac - 1A) supplies the motors. It is protected by a fuse F10 (1A) and a green LED L27 indicates its presence.

Controlled voltages

Voltages which require the operating of the program. Those voltages are settled when the program is operating and when the multiplexing signals (SCAN) are operational.

a.- Vcc 2 : tension required (5 Vac) to supply the external logic to the card (LCD, display, external logical circuits to the card). It is protected by the fuse F3 (3,15A) and a green LED L20 indicates it is working.

Power on

Before switching on the board, check,:

A.- that circuit U3 (ISPLSP2064) is programmed correctly.

This device is programmed in the factory and is software or customer dependant;

B.- that the security circuit U87 (COP8SAA716) is programmed correctly.

This device generates an interruption that drives the matrix control. (light, switches). A blinking green LED (L28) indicates the operating of the circuit.

C.- Game program

The game program is loaded in an EPROM (U6). Verify that the program enclosed in this device corresponds to the desired game (version + checksum). Check that the position of jumpers JP1 and JP2 correspond to the fitted EPROM.

D.- Sound program

Check that sound EPROMs (U45 and U46) are compatible with the game. Depending on the kind of EPROM fitted, check the position of jumpers JP5, JP6 and JP9.

Power on

When power is on, the following messages appear on the " GENERAL DISPLAY " :

```

S I R M O   G A M E S   s . a .   W I
" N A M E   O F   G A M E "
V E R S I O N : 0 0 0 0 0 0 - 0 0 0 0
N U M B E R   : X X X X X X

```

This information will help you to check :

- the type of the game;
- the version of the program together with its checksum;
- the number of the game (allocated by the operator).
- WI :address of the first active witness (see TEST T1 - Dump memory).

***Remark** : at the very first power on (new version of the program), the LCD display is longer because the program has to calculate the CHECKSUM of the program.*

Error codes

Different error codes can be displayed on the "General Display". Errors due to the deficiency of an electronic component or to bad handling.

```

C R E D I T :
[           E R R O R   x x           ]
d e s c r i p t i o n
  
```

Error 2x

Error due to the opening of an element that allows access to the game.
These elements are :

- door;
- front moulding (back face with luminous buttons) ;
- front panel (situated at the back of the front mirror).

It is possible to control the access to the machine when power is off.
The controls depend on the OPTIONS (see description of the OPTIONS)

- Generally /steppers Door witness (n°19)
- Generally / steppers Door witness when power is on (n°18)

<i>CODE</i>	<i>ACCESS</i>
21 (29)	Door
22 (2A)	Front moulding
23 (2B)	Door & front moulding
24 (2C)	Front panel
25 (2D)	Door & front panel
26 (2E)	Front moulding & front panel
27 (2F)	Door & front moulding & front panel

(2x) code between brackets corresponds to access to the game when power is off.

Deleting Error 2x depends on OPTION : *General* / *steppers* Password error 20 (nr 1)

- OPTION = 0000 : press keys [M], [Q] ;

- OPTION \neq 0000 : the content of the OPTION represents a secret code. Press [M] key followed by the 4 figures of this secret code.

Top right of the error code (2nd line of the "General display") a "*" will be displayed to inform the technician that the deletion of this error is protected.

Error 30

Indicates the overflow of the maximal limit of the CREDIT. This error depends on the OPTION : *General* / *steppers* / *Limit Credit* (see description of the OPTIONS).

Solution

Open the door of the game, the latter will display ERROR 2x. The deletion of ERROR 2x is described here above.

Error 4x

Indicates access error to the memory (RAMs U7 & U8) of the game.

<i>Error</i>	<i>Meaning</i>
ERROR 40	Writing error on the CREDIT
ERROR 41	Access error (reading/writing) in the RAMs
ERROR 42	Initialization of segment 0 (variables of the game)
ERROR 44	Initialization of segment 1 (accounting, historical)
ERROR 48	Initialization of segment 2 (data safety)
ERROR 4F	Inversion of the RAMs

Solution

Switch the game off and back on again.

If the error subsists, replace the memories (U7 or/and U8).

ERROR 4F (inversion of the RAMs)

To cancel this error : permute both RAMs.

Error 5x

Error due to a problem on the MICROWIRE bus on the serial communication system.

<i>Error</i>	<i>Meaning</i>
ERROR 51	Access problem (reading/writing) to the EEPROM serial (U15)
ERROR 52	Initialization of the OPTIONS (EEPROM series) (U15)
ERROR 54	Problem with the RTC (clock) (U88)

Solution

Switch the game off and back on again.

If the error subsists, change the concerned device.

Error 6x

Defect when counting balls.

Display of these errors depends on the OPTION General/Trip/Display ball error

<i>Error</i>	<i>Meaning</i>
ERROR 60	Number of balls in the holes higher than the number of balls to be lifted.
ERROR 62	Number of balls in the holes higher than the number of balls launched
ERROR 63	Yellow ROLL OVER blocked (>5 seconds)
ERROR 64	Red ROLL OVER blocked (>5 seconds)
ERROR 65	Incorrect ball number. Check detection of holes of playfield, the alley switch, the gate switch, the trough switch (ramp), the ROLL OVER.
ERROR 66	Removing of a ball on the playfield
ERROR 69	detection alley or gate switch at the end of the game

Solution

Errors 63 and 64 disappear once the roll over is inactive.

The opening of the door changes this error code 6x into error code 2x (see solution ERROR 2x).

Error 7x

These errors indicate incorrect operating of a motor.

<i>Error</i>	<i>Meaning</i>
ERROR 70	Defect with operating of the shutter motor (playfield) - no OPTO detection after 10s
ERROR 71	Defect with operating of lifter motor. Check supply of lifter motor or of OPTO allowing detection of lifter motor propeller.
ERROR 77	Front moulding detection. Re-position front moulding to cancel this error.

Solution

Switch the game off and on again or open the door of the game (change this code into error 2x).

Error 8x

These errors are similar to errors 6x but only appear after a PENDULUM TILT.

Solution

See errors 6x.

Error 90

Error due to a problem with series communication.

Solution

This error is displayed during a delay and is cancelled automatically.

If the error persists, check devices driving the series transmission (U9, U10, U12, U13, U14).

Test program

The program of the game includes tests allowing to check, control and manage the game.

Access to the different tests is available using a keyboard which can be connected (J KEYB) either on the PCB 1000 or on the body (PCB 1010, located on the lifter system).

Results of the tests will be displayed on the "DISPLAY GENERAL".

To enter into a test, the game cannot be in error.

In the description of the tests, a symbol included between [] means press the corresponding key on the keyboard.

TESTS LIST

<i>TEST</i>	<i>DESIGNATION</i>
T1	DUMP MEMORY (scrutation of the memory)
T2	DISPLAYS' TEST (test of the displays)
T3	HOPPER TEST (test of the hoppers)
T4	SWITCHES' TEST (test of IN)
T5	LIGHTS' TEST (test of OUT)
T6	SOUND REGULATING (sound level regulating)
T7	LCD CONTRAST (contrast of the "General Display" regulating)
T8	DATE & TIME SETTING (date and hour regulating)
T9	HOLES STATISTICS (statistics of realized numbers)
T10	HISTORICS (historics)
T11	OPTIONS' TEST (options test)
T12	INTERNAL METERS (visualization of internal meters)
T13	SPECIAL METERS (visualization of special meters)

Keyboard handling

To enter into a test, connect the keyboard (J KEYB), press [T] key, followed by the number of the desired test or by successively pressing [+] or[-] keys.

To validate your choice, press [=] key.

The different datas proper to a selected test will be displayed on the "GENERAL DISPLAY".

To quit the test, press [Q] key.

TEST T1 - DUMP MEMORY (scrutation of the memory)

This test enables to visualize and to modify certain data of the program of the game. Those variables are grouped following their use (kind; general, game dependant, ..., identification of the program).

```

D U M P   M E M O R Y
- a r e a
d e s c r i p t i o n
a d > v a l u e   ( m i n / m a x )

```

area : family of the displayed variable

description : definition of the displayed variable

ad : chronological address

value : displayed variable value; if the data blinks, possibility of modifying it.

(min/max) : minimum and maximum limits of the variable
displayed only if it is possible to modify the latter.

To reach a family of variables, press [XY] key.

To reach a variable, push on [+] or [-] key.

It is possible to directly reach the variable pressing [M] key followed by the address of this variable, and of the [=] key to confirm the address.

There are two different types of displayed variable :

a.- the TRIPS - logical variable - can be TRUE (ON) or FALSE (OFF) ;

b.- the STEPPERS - variable the value of which can be included between two limits..

Some of those variables can be modified by the technician.

In this case, a cursor will blink on this variable and the limits will be displayed.

If the variable is a TRIP, press [=] key to modify its value. If the variable is a STEPPER, write the desired value [0...9] and press [=] key to confirm the modification (the symbol [=] will be written on the left hand side of the variable to remind you to realize the confirmation).

If this last value is out of limits, the modification will be refused and the old value will be displayed again.

If you want to cancel the variable, press [CL] key followed by the confirmation [=] key. if you don't want to modify a variable, press [+] or [-] key without pressing [=] key.

Summary TEST T1

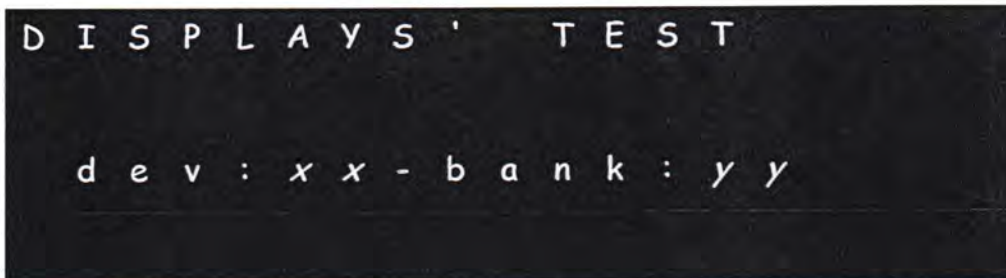
[T] [1][=]	access to the test "DUMP MEMORY"
[Q]	exit of the test
[XY]	selection of a variable family
[+]	increment of the address of the variable
[-]	decrement of the address of the variable
[M] [⌘] [⌘][=]	direct access to a variable
[=]	addition to the variable type TRIP
[⌘][⌘] ...[=]	modification of the variable type STEPPER
[CL]	Reset of the variable
[CL][=]	If visualization NON VOLATILITY WITNESS (add 30) reset of all the witnesses
[⌘]	numbers from 0 to 9

The last family of variables "SYSTEM VARIABLE" allow to check the program of the game.

<i>ADDRESS</i>	<i>DISPLAY</i>	<i>MEANING</i>
01	Program version	Indicates the version of the program as well as the checksum value of the Eprom. If you press [=] key, we will calculate the Eprom checksum
02	Sound version	Indicates the version of the sound program for this game
03	PLD version	Indicates the PLD version of this program (programming in the factory)
04	COP8 version	Indicates the COP (microcontroller) version adapted to the program of the game (programming in the factory)
05	Number of game	Identification number of the game. This number enables the operator to identify the game and it can be modified. Introduce the desired number, then confirm by pressing [=] key.

TEST T2 - DISPLAYS' TEST (7 segments displays)

This test enables to control the 7 segments displays of the game (not the Liquid Cristal Display (LCD /GENERAL DISPLAY)).



xx: display controller index (Enable)

yy: bank index of this controller

This data is only displayed during the run of the "8" on the displays.

Press [+] ([-]) keys to display the following (previous) on the displays.

Press [CL] key, the test automatically runs. The order of the running can be modified by pressing [+] and [CL] for an increased run or [-] and [CL] keys for a decreased run. To stop this automatic mode, press [CL] key, or [+] key or [-] key once again.

Check the display of the game is done by displaying specific data on the displays.

- run of numbers from 0 to 9 on all the 7 segments displays
- run of an 8 sequentially on each 7 segments displays. During this run we will display a witness allowing to situate the controller of this display.

Summary TEST T2

[T][2][=]	access to test "DISPLAY"
[Q]	Quit the test
[+]	display next data/end of automatic test
[-]	display previous data/end of automatic test
[CL]	Automatic mode /manual

TEST T3 -

TEST T4 - SWITCHES' TEST

This test allows to check the input of the game (mechanical and electronical switches).

```

S W I T C H E S '   T E S T
      [ p l f ] a b [   c o l ]
R O W - - - C B A 9 8 7 6 5 4 3 2 1 0
a d > 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0

```

[col]: matrix drawing of general switches

ab: switches matrix drawing managing the magic motors

[plf]: switches matrix drawing of the playfield

ad: ROW address

0: indicates the condition of the switch opened

1: indicates the condition of the switch closed

These inputs are :

- ⊗ either matrix inputs, arranged as matrixes of 6 x 8 cells and allowing the reading of switches situated in front of the game ([col]);
- ⊗ either matrix inputs, arranged as matrixes of 5 x 8 cells managing the playfield ([plf]);
- ⊗ either a matrix of 2 x 8 cells, allowing the managing of the magic motor (a, b);
- ⊗ or direct inputs (DOOR, FRONT PANEL, TILT, HOPPER, ...).

Operating a switch can be visualized in many ways :

- a.- we will light the lamp of each switch (see correspondence in the table "SWITCH MATRIX" of technical manual of the game);
- b.- display on the "GENERAL DISPLAY".

To go to the following (previous) ROW, press [+] ([-]) key.

Each time a switch change is stated, a sound is played and an indicator is displayed on the "GENERAL DISPLAY" (2nd line).

It is possible to test the motors of the game by moving the switches of the front moulding using the keys of the keyboard :

[0]/RED	⇒ moves the shutter motor
[1]/MANUAL LIFTER	⇒ moves the lifter motor
[A] to [E]	⇒ moves the magic motors

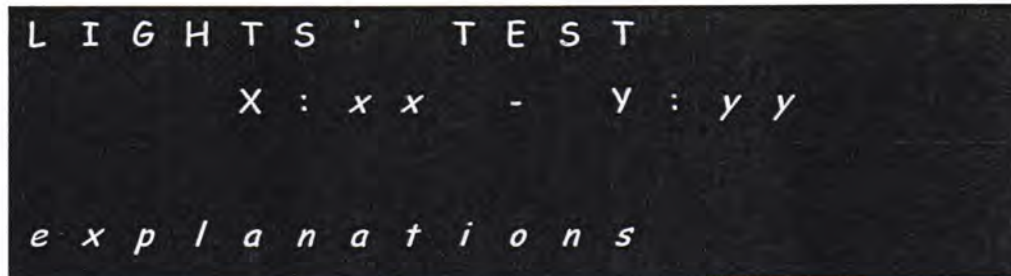
During the test of a points transfer device, (coin acceptor, note validator, telephone,...) and with the door closed, we will write on the "GENERAL DISPLAY" the amount of the transfer (function of OPTIONS).

Summary TEST T4

[T][4][=]	access to the inputs test
[Q]	quit the test
[+]	increment of the ROW address
[-]	decrement of the ROW address
[O]	action SHUTTER
[1]	action LIFTER
[A...E]	action MAGIC MOTOR

TEST T5 - LIGHTS' TEST

This test enables to scan the lamps of the game in order to check the correct operating.



xx: abscissa of the lamp

yy: ordinate of the lamp

explanation : function of keys [+], [-] and [=] [XY]

Press keys [+] or [-] to run through lamps matrix.

During visualization of the first 27 lamps (X1 - Y1 \Rightarrow Y27) we will light up the corresponding LED on the playfield (25 holes plus both roll over). the 3 colours of this LED will light up successively.

It is possible to directly reach a lamp of the matrix. To do so, press [XY] key, the coordinate X will blink; you can introduce the desired coordinate followed by [=] key to confirm your choice. Press [XY] key once again will select the coordinate Y.

Pressing [CL] key, we will light up all the lamps of an X. Pressing [CL] key once again will light up all the lamps of the following X.

To light up the previous X, press [-] key followed by [CL] key.

During this test, it is possible to test the mechanical meters by pressing [A] to [E] key of the keyboard.

Summary TEST T5

[T][5][=]	access to the output test
[Q]	quit the test
[+]	lighting of the following lamp
[-]	lighting of the previous lamp
[XY]	selection of a lamp
[CL]	lighting of all the lamps of a X
[CL]	switch to the following X
[-][CL]	switch to the previous X
[A...E]	impulse on mechanical meter

TEST T6 - SOUND REGULATING

This test enables to regulate the sound volume.

When we have access to this test, a melody is played and we will display a sound scale on the 'GENERAL DISPLAY'.



xx: sound level

explanation : function of keys [+], [-] and [=]

Press [+] or [-] key on the keyboard to regulate the volume. Push on [=] key to validate the level.

It is also possible to directly introduce the desired level (two numbers from 0 to 9) followed by the [=] key to validate your choice.

If we want to remove the sounds of the game (with the keyboard) : simultaneously press [0] and [CL] keys and confirm with [=] key.



even if the volume is set to zero, the sound of the keyboard as well as the one of the errors is always active.

Summary TEST T6

[T][6][=]	access to the sound level regulating
[Q]	quit the test
[+]	increase of sound level
[-]	decrease of sound level
[=]	memorization of sound level
[0][=] or [Cl] [=]	removal of the sound of the game
[x][x][=]	writing of the sound level
[x]	numbers from 0 to 9

TEST T7 - LCD CONTRAST

This test enables to regulate the contrast of the LCD of the game ("GENERAL DISPLAY").

A scale level of the contrast is displayed on the 3rd line of the "GENERAL DISPLAY".




xx: LCD contrast value

explanation :function of keys [+], [-] and [=]

Press [+] or [-] key to regulate the LCD contrast. To memorize the desired regulation, press [=] key.

It is possible to directly introduce the desired value by writing this value [0...9] followed by [=] key.

 : if the contrast level is too weak (around 0), maybe the writings on the LCD are not readable. It is advised to begin the regulating of the LCD with the maximum (99).

Remark

The regulating of the contrast depends on the LCD used (not available if the regulating of the LCD is done by a manual potentiometer plugged on the LCD).

Summary TEST T7

[T][7][=]	access to LCD regulating
[Q]	quit the test
[+]	increase of contrast
[-]	decrease of contrast
[=]	memorization of contrast
[0...9][=]	direct writing of contrast

TEST T8 - DATE & TIME SETTING

This test allows to set date and time of the game.

```

D A T E & T I M E   S E T T I N G
u u / v v / w w ( d d / m m / y y )
x x / y y / z z ( 2 4   h o u r s )
e x p l i c a t i o n

```

uu: day

vv: month

ww: year

xx: hour

yy: minute

zz: second

explanation : function of the keys of the keyboard

Press [+] or [-] key to select data to be modified. Modify this data by pressing a key [0...9].

Once modifications have been made, press [=] key to validate the new data.

If we want to read the data of RTC (Reel Time Clock), press [CL] key (it will enable to cancel the introduced values if you have not confirmed the modifications).

Summary TEST

[T][8][=]	access to date/time setting
[Q]	quit the test
[+]	select the following data
[-]	select the previous data
[0...9]	introduce a new data
[=]	validate the data
[CL]	reading of data of RTC

TEST T9 - HOLES' STATISTICS

This test gives access to the statistics of the holes realized on the playfield.

```

H O L E S '   S T A T I S T I C

H o l e   x x
a d > v a l e u r
  
```

xx: *number controlled*
ad: *chronological index*
valeur: *statistic of the hole*

Press [+] or [-] keys to select a hole.

Addresses 26 and 27 indicate the number of times a ROLL OVER has been realised when the feature is given by the program.

To reset the statistics of the holes, successively press keys[CL] , [=] when we visualise the statistic of the 1st hole.

Summary TEST T9

[T][9][=]	access to the statistics of the holes
[Q]	quit the test
[+]	reading statistic following hole
[=]	reading statistic previous hole
[CL][=]	erase statistics (if 1 st hole is displayed)

TEST T10 - HISTORICS

This test enables to visualise the last 20 specific events as well as the date of those events.

Three types of historic are available, different for each type of event :

- ⊗ TILTS' HISTORY
- ⊗ ERRORS' HISTORY
- ⊗ PAYS' HISTORY

Select the type of historic pressing keys [+] or [-] and confirm pressing key [=].

Once in the desired historic, select function of key [=] with keys [+] or [-]. This function displayed on the right upper side of the "GENERAL DISPLAY" blinks and will be executed by pressing [=] key.

<i>DISPLAY</i>	<i>FUNCTION</i>
prec	Access to the previous address
next	Access to the following address
page	Display of additional datas
ret	Back to HISTORICS menu
quit	Back to the game (end of tests)

Once the function chosen, press [=] key to operate this function.

TILTS' HISTORIC

Memorization of events having caused a technical tilt (counting of balls, ...).

We will also memorize the errors of memory (RAM, EEPROM, ...).

```
T I L T S ' H I S T O R Y   - f c t
a d > d a t e   h e u r e
G A M E : n b   E R R O R : c d
d e s c r i p t i o n
```

fct: function (to confirm by pressing [=] key)

ad: chronological index

nb: number of games between 2 tilts

cd: error code

description: definition of the error

Error code (cd)

<i>CODE</i>	<i>MEANING</i>
Bxx	withdrawal of number xx
60	number of balls in the holes higher than the number of balls to be lifted
62	number of balls in the holes higher than the number of balls shot
65	incorrect number of balls
80	idem error 60 after a tilt
82	idem error 62 after a tilt
85	idem error 65 after a tilt

Additional datas are available.

Select function PAGE with keys [+] or [-] and press key [=].

```

T I L T S ' H I S T O R Y      p a g e
t r x x   h o x x   a l x x
l i x x   s h x x   m x x x
0 0 0 0 - 0 0 0 0 - 0 0 0 0 - 0 0 0 0
  
```

tr: number of balls in the troughs (ramp ball lifter).

ho: number of balls in the holes (playfield)

al: number of balls in the alley (ball lifter)

li: number of balls lifted

sh: number of balls shot

mx: maximum number of balls to be lifted.

The writing on the last line is information for the manufacturer.

To go back to the main page, press key [=] once again (function = PAGE).

To erase historics of tilts, go to ADDRESS 1, press key [CL] followed by [=] key to confirm erasure.

ERRORS' HISTORICS

Memorize errors that have occurred in the game.

```

E R R O R S '   H I S T O R Y - f c t
a d > d a t e   h e u r e
E R R O R : c d
e x p l a n a t i o n

```

fct: function (to confirm pressing [=] key)
ad: chronological index
cd: error code
explication: explanation of the error

Additional datas are available.

Select the PAGE function with keys [+] or [-] and press key [=].

```

E R R O R S '   H I S T O R Y p a g e
t r x x   h o x x   a l x x
l i x x   s h x x   m x x x
0 0 0 0 - 0 0 0 0 - 0 0 0 0 - 0 0 0 0

```

tr: number of balls in the troughs (ramp ball lifter).

ho: number of balls in the holes (playfield)

al: number of balls in the alley (ball lifter)

li: number of balls lifted

sh: number of balls shot

mx: maximum number of balls to be lifted.

The writings on the last line is the information for the manufacturer.

To go back to the main page, press key [=] once again (function = PAGE).

PAYS' HISTORICS

Memorize the game which has been reached a total win higher than 2500 points.

```

P A Y s'   H I S T O R Y       - f c t
a d > d a t e   h e u r e
G A M E : i d
V a l : v a l e u r , c d
  
```

fct: *function (to confirm by pressing [=] key)*

ad: *chronological index*

id: *identify type of game*

Valeur: *amount game wins*

cd: *identify condition of the door*

DO: door opened

DC: door closed

Identification of the game type (id): corresponding PDOC to your game

It is possible to visualise the additional datas relative to this part.

This data is visualized in the pages we will select using function "page".
Select function PAGE (keys [+] or [-]) and press key [=].

```

P A Y S '   H I S T O R Y   p a g e
a d > s t :   y y y , e x b :   z z z
B A L L : x x   x x   x x   x x   x x
           x x   x x   x x   x x   x x

```

ad: chronological index

yyy: stake of the game

zzz: amount purchase of extra ball

xx: numbers realized

To go to the following page, press key [=] (function = PAGE).

```

P A Y S '   H I S T O R Y   p a g e
F L A G : x x   x x   x x   x x   x x
           x x   x x   x x   x x   x x

```

xx: identification kind of payment

Identification kind of payment (xx) : see PDOC corresponding to your game

TEST T11 - OPTIONS' TEST

The options enable to configure the settings of the game.

```

O P T I O N S '   T E S T
a r e a / t y p e
d e s c r i p t i o n
a d > v a l       ( m i n / m a x )

```

area: option family

type: type of the option, either TRIP, or STEPPER

definition: description of the option

ad: chronological index

val: option value

(min/max): option limit values

OPTIONS are two different types :

- ⊗ TRIPS, logical variables, which can take two values : either ON (variable is TRUE), or OFF (variable is FALSE). Modification of AN OPTION TRIP doesn't need to enter a PASSWORD and can be made by pressing [=] key.
- ⊗ STEPPERS, variables which can take a value included between two limits.

Introduction of PASSWORD

The modification of certain variables firstly requires the technician's recognition by introducing a PASSWORD (writing the word "password" instead of the limits of this option). To do so, press [A] key followed by the 4 figures of the PASSWORD. If the PASSWORD introduced is correct, the limits of the OPTION visualized (STEPPER) will be displayed. If the PASSWORD is not correct, writing "PASSWORD" will blink at the bottom of the "GENERAL DISPLAY".

If during introduction of the PASSWORD, you have to begin the code once again, press key [CL].

Modification of the PASSWORD

If we want to modify this PASSWORD, introduce the present PASSWORD (see procedure here above) press [A] key, introduce the 4 figures which constitute the new PASSWORD. The program asks to re-introduce it to validate.

The default value of a PASSWORD (factory) is 0000.

Modification of the OPTION

Once the correct PASSWORD is introduced (display of the limits of the OPTION), introduce the new OPTION VALUE [0...9] and confirm pushing on [=] key.

If the new value is out of allowed limits, modification will be invalid and the old OPTION value will be displayed once again.

In order to make use of OPTIONS easier, the latter have been grouped in different families.

Therefore we will find :

<i>DISPLAY</i>	<i>FUNCTION</i>
GENERALY/TRIPS	Option of TRIP type of general use
GENERALY/STEPPERS	Option of STEPPER type of general use
BINGO/TRIPS	Option of TRIP type proper to game bingo
BINGO/STEPPERS	Option of STEPPER type proper to game bingo
...	

Press [+] or [-] keys to reach an OPTION.

Press [XY] key to read the beginning of the following family zone.

Display of the description

To display the description of the OPTION, press keys [C] and [D]. To suppress this display, press key [C] or [D].

Summary TEST T11

[T][1][1][=]	access to the test of OPTIONS
[Q]	end of test
[xy]	selection OPTIONS family
[7]	increment OPTION address
[-]	decrement OPTION address
[M] [⌘] [⌘] [=]	direct access to an OPTION
[=]	addition to the OPTION of TRIP type
[⌘] [⌘] [=]	modification of the OPTION of STEPPER type
[A] [⌘] [⌘] [⌘] [⌘] [⌘]	introduction secret code modification OPTIONS
[A] [⌘] [⌘] [⌘] [⌘] [⌘] [⌘] [⌘] [⌘]	modification secret code
[C] [D]	display OPTIONS description
[C] or [D]	erase display description
[CL]	reset of OPTION
[⌘]	figures from 0 to 9

Summary TEST T11

[T][1][1][=]	access to the test of OPTIONS
[Q]	end of test
[xy]	selection OPTIONS family
[7]	increment OPTION address
[-]	decrement OPTION address
[M] [x] [x] [=]	direct access to an OPTION
[=]	addition to the OPTION of TRIP type
[x] [x] [=]	modification of the OPTION of STEPPER type
[A] [x] [x] [x] [x]	introduction secret code modification OPTIONS
[A] [x] [x] [x] [x] [x] [x] [x] [x]	modification secret code
[C] [D]	display OPTIONS description
[C] or [D]	erase display description
[CL]	reset of OPTION
[x]	figures from 0 to 9

TEST T12 - INTERNAL METERS

This test enables to see the accounting of the game.



*definition: definition of the displayed meter
to display the definition, press keys [C] and [D]*

ad: chronological index

val: meter value

Push keys [+] ([-]) to visualize the following internal meter (previous).

To display the meaning of the meters, successively press [C] and [D] keys.
To suppress this display, Press [C] or [D] key.

Resetting these meters is done during visualisation of the 1st meter by pressing [CL] key followed by [=] key to confirm.

Summary TEST T12

[T][1][2][=]	access to test
[Q]	end of test
[+]	display next meter
[-]	display previous display
[CL][=]	erasure of meters (if visualisation 1 st meter)
[C][D]	display description of meters
[C]or[D]	cancellation description of meters

TEST T13 - SPECIAL METERS

These meters enable to realise a more detailed analyse of the operating of the game.

```

S P E C I A L           M E T E R S
f a m i l y
d e f i n i t i o n
a d > v a l

```

famille: family of visualised meter

définition: definition of visualised meter

to display definition, press keys [C] and [D]

ad: chronological index

val: meter value

For facilitate things, these meters have been split up into a family following the type of the game.

To gain access to the following zone, press key [XY]. To select the address of a meter, press keys [+] or [-] or press [M] key followed by the address of the meter and confirm pushing [=] key.

If the written address is higher than the number of meters of this zone, operation is cancelled.

If you want to cancel direct introduction of the address of the meter, press [M] key.

If we want to display the meaning of the meter, press [C] key, then [D] key. To erase this display, press [C] or [D] key.

Resetting the meters

When you reset these meters, the meters of all zones are reset together. You cannot reset per individual zone.

Resetting these meters depends on the condition of an OPTION (test T13, OPT Nr 6 GENERALY/TRIP/RESET T13 during T12)

a.- OPTION = ON : resetting all meters is done together while resetting meters T12.

b.- OPTION = OFF : press keys [CL] and [=] if we visualize the 1st meter of the 1st zone.

Summary TEST T13

[T][1][3][=]	access to test
[Q]	end of test
[+]	display next meter
[-]	display previous meter
[M][][][=]	direct access to a meter
[XY]	access beginning following zone
[CL][=]	erasure of meters (if visualization 1st meter)
[C][D]	display description of the meters
[C]or[D]	erasure of description of the meters
[]	figures from 0 to 9

Printer

It is possible to connect a printer to print information relative to the game.

To do so, connect the printer to the connector SUB.D 9 positions on the connector J ELECTR.KEY of BODY SPLIT (lifter system).

Press the red button situated under this connector to begin the transfer.

If you want to print the entire test, select it and print (do not confirm this test).

If you want to print a page of variables in a test, confirm the desired test [=], select the family [xy] you want to print and print.

To print description of the variables, confirm the test ([=]), display the description by pressing on keys [C] and [D] and print. If you want to print the entire test, press [T] key and print.

The printable information is :

<i>TEST</i>	<i>Designation</i>	<i>Notes</i>
T1	DUMP MEMORY	
T9	HOLES STATISTICS	
T10	HISTORICS	Select type of historic
T11	OPTIONS	
T12	INTERNAL METER	Printing these meters is done during the game by pressing MANUAL LIFTER and by printing.
T13	SPECIAL METERS	

If you want to stop printing, carry on pressing the red button until you hear a sound,

Transmission settings

The material used is a serial printer :

data length : 8 bits + 1 stop bit

Parity : No

Busy control : XON/XOFF

Band rate : 9600