

MANUALE D'ISTRUZIONI

(I) (D) (GB) (F)

INDICE

| | | |
|---|------|-------|
| Installazione | pag. | 3 |
| Manutenzione di routine | " | 4 |
| Notizie tecniche generali | " | 4 |
| Tests: Autodiagnosi | " | 5 |
| - Contabilità | " | 5 |
| - Programmazione | " | 6-7 |
| Autodiagnosi della scheda suoni e parlato | " | 7 |
| Tests (tabella) | " | 8-9 |
| Guida alla ricerca guasti | " | 10-11 |

INHALTSVERZEICHNIS

| | | |
|---|------|-------|
| Aufstellung | pag. | 12 |
| Routinewartung | " | 13 |
| Allgemeine technische Hinweise | " | 13 |
| Tests: Autodiagnose | " | 14 |
| - Buchhaltung | " | 14 |
| - Programmierung | " | 15-16 |
| Autodiagnose per platine sound und sprechen | " | 16 |
| Test (tabelle) | " | 17-18 |
| Fehlersuche | " | 19-20 |

TABLE OF CONTENTS

| | | |
|--------------------------------|------|-------|
| Installation | pag. | 21 |
| Routine maintenance | " | 22 |
| General technical information | " | 22 |
| Tests: Self test | " | 23 |
| - Accounting functions | " | 23 |
| - Programming | " | 24-25 |
| Sound and talk board self test | " | 25 |
| Tests (table) | " | 26-27 |
| Trouble shooting | " | 28-29 |

TABLE DES MATIERES

| | | |
|--|------|-------|
| Installation | pag. | 30 |
| Manutention de routine | " | 31 |
| Remarques techniques generales | " | 31 |
| Tests: Self test | " | 32 |
| - Comptabilite | " | 32 |
| - Programmation | " | 33-34 |
| Autodiagnostic de la fiche sons et parle | " | 34 |
| Tests (tableau) | " | 35-36 |
| Depannage | " | 37-38 |

CONNECTOR CARD FOR CLOWN

| | | |
|--|------|-------|
| | pag. | 39+42 |
| TAV. I Basic programs | " | 42 |
| TAV. II Actual programming examples | " | 43 |
| FIG. 1-2 Switches location - Display functions | " | 44 |
| FIG. 3 Assembly drawing | " | 45 |
| FIG. 4 Contact arrangement | " | 46 |
| FIG. 5 Lamp arrangement | " | 47 |
| FIG. 6 Solenoid arrangement | " | 48 |

INSTALLATION

ASSEMBLING

Assembling should be done as follows:

1. Bolt legs to the cabinet (use special bolts in coin box).
2. Gently extract electric cable and place in the proper cavity, checking that non-skid knot is there.
3. Remove the elastic strip that secures the light board and lift it to a vertical position. During this operation make sure that the cable is not crushed between the parts. The light board has an automatic coupling that keeps it in a vertical position, to ease the fitting of the 4 bolts with the relevant washers, that can be found in the coin box too.

VISUAL INSPECTIONS

On all games there are certain points that should be always checked after transport. Some are visual inspections which may be helpful to avoid some time consuming service work later. Minor damages caused by rough handling during the transport are practically unavoidable. Cable connectors may be loosened, switches (especially tilt switches) may lose their proper adjustment. Especially the plumb bob tilt switch should always be adjusted after game is set on location.

1. Check whether cabinet cable is connected to the light board cable.
2. Check for any wires that may have become disconnected.
3. Make sure that the cables do not obstacle the moving parts.
4. Check that all fuses are making good contact.
5. Check whether the transformer is connected for the proper main voltage.
6. Check and adjust the sensitivity of tilt contacts as follows.
 - A. Plumb bob tilt switch.
Adjust the plumb bob tilt length according to the required sensitivity.
 - B. Rail tilt and ball.
Put the ball into the rail and check whether it moves properly and closes the contact when the cabinet is raised.
 - C. Shockproof tilt
There are two:
The first one near plumb bob tilt, the second one near coin chutes. Adjust contact distance to desired sensitivity.

GENERAL GAME OPERATION

1. Put one the ball into the bottom hole
Connect voltage and start the game.
2. The «GAME OVER» lamp is lit.
3. Check whether the machine accepts properly the coins and increments the relevant credits. Please keep in mind that the machine shall not accept any coins when turned off or if the number of credits has reached the max. programmed amount.
4. If after having started the game the GAME OVER lamp is lit, it is necessary to carry out some control functions, because the data stored in the battery memory, are not valid anymore. If the game has been disconnected for many weeks, this is very likely to happen.
If on the other hand the machine has been recently used, and the GAME OVER lamp blinks, it is possible that the battery or its reloading circuit are out of order.
In any case, before starting the machine it is advisable to reprogram it.
5. Act on credit push-button. The «GAME OVER» lamp shall extinguish.
 - A. First player lamp shall be lit.
 - B. The credits are decreased by one.
 - C. «BALLS TO PLAY» lamp shall be lit.
 - D. The playfield is ready and the ball is ejected from the hole.
6. Each time the credit push-button is operated, the number of credits is decreased by one and the number of players is updated.
7. The max. number of credits available is four.

- have to be carefully checked.
1. Carefully check that securing screws of electronic boards do not work loose.
 - Check and if necessary tighten the screws of the rubber post.
 - Check the conditions of the rubber rings and if necessary change them (remember to check the adjustment of contacts each time the rubber rings are replaced).
 - Carefully clean playfield. Do not use highly caustic cleaners.
 2. Playfield (lower part).
 - Check flipper assembly (tie rod, pin joints and contacts).
 - Check bumpers.
 - Check contact adjustments.
 - Check wiring harness to avoid stresses on the wires and obstacles to the moving parts.
 3. Check and adjust tilt sensitivity.
Remember: an efficient periodic maintenance greatly improves the pintable lifetime and avoids the possibility of damages.

NOTE

Games are factory programmed, according to the special requirements of their designation. The main programming elements may be changed, however, by following procedures below.
We remind you that these procedures shall be performed EXCLUSIVELY by skilled technicians, because wrong programming could cause malfunctions.

GENERAL TECHNICAL INFORMATION

To avoid that any cause (battery discharged or others) causes the loss of the data stored in RAM C-MOS, and thus the failure of the pintable, the basic program contains some typical programmings (to replace the switches that had been used with the precedent series).

When the microcomputer notes that the programming data of RAM C-MOS do not apply anymore, recall one of the 8 lists of typical programming (see table I).
For the CHOICE OF THE TYPICAL LIST, that will be called in case of necessity, the DIP SWS. 1, 2 and 3 are used, that are mounted on the C.P.U. board (see figure 1).

On the sound board there are 2 trimmers provided for the separate tuning of the max. volume of sounds and talking.
For the final tuning of the loud-speaker volume, both for sound and for talk, there is a potentiometer provided, that is located inside the cabinet on the right side of the door.

To operate on the «TESTS» with the pintable in GAME OVER position, on the door there is an «ADVANCE-RETURN» switch with central rest position (or 2 push-buttons, of which one «ADVANCE» and the other one «RETURN»). By acting on «ADVANCE» at each control the tests progress 1 by 1 from 0 through 37 and then again 0, 1, 2 etc. When pushing again «RETURN», each time the test number is decreased by one (contrary to what happens with «ADVANCE»).

The test number is indicated on the 2 figures of the «BALLS TO PLAY» display (see fig. 2). To leave the test, and return thus to GAME OVER, it is sufficient to stop and then start again the game, or to push ADVANCE or RETURN until the display shows 00.

To clear the «accounting» tests or in any case to amend the programming tests, it is necessary that SW n. 4 on the C.P.U.-board (see fig. 1) points to ON (PROGRAM), and then call the test to be changed, and act on the «CREDIT» push-button. After having cleared or programmed the test, to return in GAME OVER condition and thus to be able to play, call test 00 and then put SW n. 4 in OGG (GAME) position.

If the SW n. 4 has not been reset, and you are still in ON (PROGRAM) condition with the 00 (GAME OVER) test, there will be a buzzing sound and the TILT lamp will be blinking, to inform on the anomalous condition that doesn't allow to use the game.

IMPORTANT: each time the battery or RAM C-MOS 6514-9 are replaced, or in any case of interruption of the memory feeding, it is necessary to act as follows to enter the new program:

- a) Clear the accounting tests (6, 7, 8, 9) even if they apparently are already cleared.
- b) Program the tests from 10 through 37, without forgetting to program also those tests that apparently are already programmed.
For example, if you wish to program the test 10 with 00, and on the display 00 has already appeared, then push the CREDIT push-button until 00 appears again.

Once the programming has been terminated, the GAME OVER LAMP shall remain lit.
If it is blinking this means that the programming has not been accepted, and thus it has to be repeated in the proper way.

SELF TEST

DISPLAY (Test n.1). By this we check optically the proper operation of the display (5 groups of 8 figures each covering a total of 40 figures). The 5 groups are the the following: **1st player display; 2nd player display; 3rd player display; 4th player display; HIGHEST SCORE TO DATE display or DISPLAY CREDIT, TIME BONUS and BALLS TO PLAY.** When this test is entered, all the figures show the same numbers, starting with «0» that immediately becomes «1» then «2» and so on until «9»; then they restart at «0» and so on. By acting on CREDIT push-button the 8 figures of each display indicate 8 numbers in continuous succession.
Example: 7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1

CONTACTS: (Test n. 2). By this test function it is possible to check the proper operation of the 64 INPUT contacts numbered from 00 through 64. When this test is entered, on the 2 figures of the CREDIT display appears the "closed" contact highest in number, and after having opened it, follows the number of the closed contact next in order. If none of the 64 contacts is "closed" no number is indicated. Under these circumstances it is possible to check whether all the contacts work properly, by closing them one by one and making sure that each time the corresponding number appears on the special display provided.
For the numbering of contacts see fig. 4.

LAMPS (Test n. 3). All the «piloted» lamps, that have been divided into two groups, are lit and extinguished alternatively at regular intervals. Check whether there are any lamps that are not operative.

SOLENOIDS (Test n. 4). All the solenoids (coils) are energized in sequence from 1 through 24. The number of the energized solenoid appears on the CREDIT display in that very moment.
NOTE THAT EACH SINGLE PINTABLE MODEL MAY USE ONLY PART OF THE 24 AVAILABLE SOLENOIDS.
In the test all the solenoids are treated in the same way (either used or not), and thus on the CREDIT display the numbers of all the 24 possible solenoids are indicated. Those that are not operative and are missing do not cause any effect (mechanical noise).
The number of employed solenoids is indicated on fig. 5.

SOUND AND TALKING (Test n. 5). This test serves to hear the various sounds and phrases programmed for the model and to check whether they are correct; in the same time on the CREDIT display appears the number of the sound or of the phrase being executed.

ACCOUNTING FUNCTIONS

TIME (Test n. 6). Same contains the accounting data relevant to the time (minutes) of pintable operation (1st player display), to the actual duration of the game (minutes) 2nd player display), the total number of TILT (3rd player display) and to the average duration of games (4th player display). The average duration of games is expressed in minutes, and is determined by the ratio between the play time and the number of games that have been played.
The above accounting functions can be cleared simultaneously, by keeping pressed the CREDIT push-button for about 5 seconds, provided SW 4 n. 4 on the C.P.U. boards is on ON (PROGRAM).

TAKINGS (Test n. 7). The number of coins collected by the first coin chute (on the left side) is indicated on the 1st player display. The number of coins collected by the second coin chute (on the right side) is shown on 2nd player display. The 3rd player display accounts for the number of coins introduced into the third coin chute (the central one). On the 4th player display the number of «service» games is reported, that is those games obtained by pressing the «SERVICE» push-button that is located inside the door on the left side.
NOTE THAT THE «SERVICE» PUSH-BUTTON DOES NOT CHANGE THE NUMBER OF CREDITS, BECAUSE IT ENTERS DIRECTLY FROM 1 THROUGH 4 GAMES, AND ALSO THE ELECTROMECHANICAL COIN COUNTS IS NOT AFFECTED.
To clear it, SW n. 4 on the C.P.U. board (see figure 1) shall be in position ON (PROGRAM), and then act on the CREDIT push-button for about 5 seconds.

WINNINGS (Test n. 8 and 9). Test n. 8 indicates the winnings listed per types, that is: on the 1st player is indicated the overall quantity of games that have been played (the addition of the paid games, the won ones and the SERVICE games).
On the 2nd player display appear the won games.
On the 3rd player display one can see the number of won balls. Finally the 4th player display shows the quantity of awarded SUPERBONUS.
— The test n. 9 shows how the winnings have been obtained.
The 1st player display indicates how many times the HIGHEST SCORE has been exceeded (NORMAL if test 18 is programmed with 00, RANDOM if test 18 is programmed with 01).
The 2nd player display shows the number of winnings obtained with winning scores.
The 3rd player display shows the number of winnings obtained with SPECIAL 1. Finally, on the 4th player display appears the number of winnings obtained with SPECIAL 2.
To clear the winnings, SW n. 4 shall be in position ON (PROGRAM); then enter test n. 8 and act on the CREDIT push-button for about 5 seconds; then enter test n. 9 and again press the CREDIT push-button for about 5 seconds.

SERVICE (Test. n. 10) Test 10 indicates:
- Total number of tilt n. 2 on 1st player display (play tilt)
- Total number of credits cancelled by tilt n. 2, on 2nd player display.

COINS (Tests n. 11, 12, 13, 14, 15, 16). To meet the requirements due to the various types and values of coins, a highly sophisticated method for programming the cost of one «credit» (one game) has been adopted. The main features of this method are:

- a) the possibility of giving one credit with several coins,
- b) same number of allowances if the value of the introduced coins is the same, regardless of their number and type,
- c) the possibility of establishing a cost per credit that differs from the value of the various coins.

To achieve proper programming of the cost of one credit, when allowances shall be granted, it is necessary to keep in mind that the cost ratio between the more expensive credit and the less expensive one shall be less than «2». The tests 11, 13 and 15 shall be given the unit «value» of the coins that can be introduced respectively into coin chute n. 1 (on the left side), coin chute n. 2 (on the right side) and coin chute n. 3 (in the middle). Do not forget that the coins shall be introduced into the 3 coin chutes in GROWING ORDER. The coin with the lowest value shall be introduced into the first coin chute, to the second coin chute can be assigned a coin of the same or higher value than the first one.

The third coin chute shall receive the coin that has or higher or at least the same value as the coin introduced into the second coin chute.

The tests 12, 14 and 16 shall be programmed with the number of credits to be given to each coin introduced respectively into coin chutes 1, 2 and 3.

If several coins are needed to get one credit, it is necessary to program 00. The coin attributed to the third coin chute, shall have the same or higher value than the cost of one credit. (The figure to be programmed on test n. 16 shall be equal to or higher than 1).

THE UNIT VALUE OF COINS IS THE FIGURE OBTAINED BY DIVIDING THE ACTUAL VALUE OF THE COINS BY THE MAX. COMMON DIVISOR.

Example: 10 p; 50 p; 10 L = 1 + 5
100 L; 200 L; 500 L = 1 + 2 + 5

As a further guidance for the operators on Table II some actual coin chute programming examples are reported, that are used for some European countries.

HIGH SCORE (Test n. 17, 18 and 25). There exists the possibility to choose among 2 different types of H.S.: NORMAL (Test 18 = 00) and RANDOM (Test 18 = 01). NORMAL H.S. represents the max. score value achieved by one player. When this score is exceeded by one or more players, it is replaced by the score obtained by the player who has totalled the highest score. The players that follow shall exceed the new H.S. value to have their winning score recorded.

RANDOM H.S. on the contrary consists of a casual score, ranging within an area of 12.000.000 points, that is set forth at the beginning of each game.

The minimum value is given by the figure programmed with test 17, and that can range from 00.000.000 through 99.900.000. The same test is used to program a NORMAL H.S. at the beginning, when the pinball is installed, or in any case to clear or change the existing H.S. value. To do so, press several times the CREDIT push-button, if slow progressing is required, otherwise keep it pressed for fast progress. To change the initial value of Random H.S. it is necessary that SW4 on the C.P.U. board is in ON (PROGRAM) position, while it may be both on ON (PROGRAM) or OFF (GAME) to change the programming of test n. 25, with the following possibilities:

- Test 25 = 00 = no win
- 01 = 1 replay
- 02 = 2 replays
- 03 = 3 replays
- 04 = 1 superbonus

Both test 18 and test 25 require SW n. 4 to be in ON (PROGRAM) position to change their programming, and then it is necessary to press the CREDIT push-button.

**FOR NORMAL H.S. THE WIN IS AWARDED ONLY TO THE PLAYER WHO OBTAINS THE HIGHEST SCORE, EVEN WHEN THE PLAYERS EXCEEDING THE PRESET HIGHEST SCORE VALUE ARE MORE THAN ONE.
IN THE CASE OF RANDOM H.S. THE WIN IS GIVEN TO ALL THE PLAYERS WHO EXCEED THE PRESET H.S. VALUE.**

MAX CREDIT (Test n. 19). Same represents the max. number of credits that can be recorded before the coin chute locking mechanism is released, thus preventing further introduction of coins. Same represents also the figure beyond which the credits are not increased anymore because of any won games. It is programmable from 10 through 30 by acting on the CREDIT push-button, provided SW4 is set on ON (RANDOM).

BALLS (Test n. 20). Same represents the number of balls that are available during each game. It can be programmed from 01 through 02 by acting on the CREDIT push-button while SW4 shall be on ON.

MATCH (Test n. 20). Match is the possibility to award one replay to the player or to the players, who have managed to get a score on their display the two right end figures correspond to those of MATCH (see figure 2). If it is programmed with 00, it is excluded, while if the programmed figure is 01, it is connected. To change the programming act on the CREDIT push-button. SW n.4 shall be set ON (PROGRAM).

WINNING SCORES (Test n. 22, 23, 24 and 25). There are three scores, that can be programmed within a range from 0,00 through 99.900.000, respectively with tests 22, 23 and 24. The player or the players who exceed one or more (max. 3) winning scores, are awarded a prize as determined on test n. 26, for each exceeded winning score. The scores programmed with 0,0 to are not enabled (they do not award any, win even when test 26 is programmed for wins). The test n. 26 determines the type of win at each winning score limit, that can be chosen among:

- Test 26 = 00 = non win
- 01 = 1 bonus ball
- 02 = 1 replay
- 03 = 1 superbonus
- 04 = 2.000.000 points

For the programming of these tests it is necessary that SW n.4 is on ON (PROGRAM), and then act on CREDIT push-button. For the scores (test 22, 23, 24) push repeatedly the CREDIT push-button to progress 1 by 1 (corresponding each to 100.000 points). When the button is kept pressed, the progress is fast.

- 01 = Hit the sliding target "Clown" 2 times
- 02 = Hit the sliding target "Clown" 4 times
- 03 = Hit the sliding target "Clown" 3 times

For adjustment or changes, act on CREDIT button when SW 4 is ON (PROGRAM).

Test 27 determines the type of win to be awarded when the Special target is hit while corresponding lamp is lit.

- 00 = no win
- 01 = 1 bonus ball
- 02 = 1 replay
- 03 = 1 superbonus
- 04 = 4,500,000 points

For adjustment or changes, act on CREDIT button when SW 4 is ON (PROGRAM).

SPECIAL 2 ORANGE SPECIAL (Test 28, 34) Difficulty can be adjusted for lighting the "orange special" lamp by modifying test n. 34.

- 00 = Hit targets bank 6 times
- 01 = Hit targets bank 4 times
- 02 = Hit targets bank 3 times
- 03 = Hit targets bank 2 times

Test n. 28 determines the type of win to be awarded when the orange Special target is hit while the corresponding lamps is lit.

- 00 = no win
- 01 = 1 bonus ball
- 02 = 1 replay
- 03 = 1 superbonus
- 04 = 1,000,000 points

For adjustment or changes, act on CREDIT button when SW 4 is ON (PROGRAM)

BACKGROUND SOUND AND ATTRACTION SOUNDS (Test 29) Background sound is to be adjusted when in play, attraction sounds when in GAME OVER

- 00 = Sound disconnected, attractions connected
- 01 = Sound connected, attractions connected
- 02 = Sound disconnected, attractions disconnected
- 03 = Sound connected, attractions disconnected

COIN METER (Test n. 30) Same as an electromechanical impulse meter, to be connected with the circular 8-way connector located in the cabinet and that the «UNIT VALUE» of the coins introduced into 3 coin chutes.

It is never modified by the wins or the service games (obtained through the SERVICE push-button). The game can be played regularly both with connected and cut-off coin meter, if the test is programmed with 00. Note that the impulse meter is programmed with 00. Note that the impulse meter is always operating regardless of the type of programming used for test 30.

To program or to change, act on CREDIT push-button, provided SW 4 is in ON (PROGRAM) position.
The impulse meter and relevant wiring are available upon request.

GAME TIME BONUS (Test n. 31) After having used the available balls (see test 20+ possible winning balls), it is possible to get a game time extension that may range from a minimum of 10 seconds to a maximum of 99 seconds, determined by the play of the last normal ball. This time is indicated by 2 digits in the center of the HIGHEST SCORE TO DATE display (see figure 2). Upon play time expiry, all the controls are stopped, and thus the ball to play runs straight to the hole.

If the test has been programmed 00, the game is terminated normally (game time bonus excluded), while with 01 programming game time bonus is connected. To program or change, act on CREDIT push-button, provided SW 4 is in ON (PROGRAM) position.

BONUS BALL NUMBER VARIATION (Test 32) Maximum number of possible bonus balls, while one ball in play, is determined.

- 00 = 1 bonus ball
- 01 = 3 bonus ball
- 02 = 3 bonus ball
- 03 = 3 bonus ball

To program or change, act on CREDIT push-button, provided SW 4 is set on ON (PROGRAM).

LIONS CAGE VARIATION (Test 35) Lions cage score is adjustable by modifying test 35

- 00 = No win
- 01 - 02 - 03 = 1 Bonus Ball

To program or modify, act on credit push button when SW 4 is ON (Program)

Note: Tests 36 and 37 are not utilized on "CLOWN"

| N. TEST | FUNCTION | N. FUNCTION IN TEST | DESCRIPTION |
|---------|------------------------|---------------------|---|
| 01 | Test Display | / | 1° All the displays show equal figures that follow each other 0,1,2,...9,0 and so on. 2° By keeping the «CREDIT» push-button pressed, the displays show numbers in succession. |
| 02 | Contact test | 00 | Number of closed contact |
| 03 | Lamp test | / | All the piloted lamps are continuously lit and extinguished. |
| 04 | Solenoid test | 00 | The solenoids (from 1 through 24) are energized one after another. The figure indicates the energized solenoid. When it is operative it must be perceived. |
| 05 | Sound and talking test | 00 | Sounds and works are repeated one after another. The figure indicates the sound and the phrase being executed. |

ACCOUNTING

| N. TEST | FUNCTION | DESCRIPTION | HOW TO CLEAR |
|---------|----------|---|--|
| 06 | Duration | Player 1 display = Time of pintable operation (minutes) Player 2 display = Game time (minutes) Player 3 display = Total number of tilt Player 4 display = Average game duration expressed in minutes | With SW4 on ON (PROGRAM) push-button about 5 sec. |
| 07 | Takings | Player 1 display = Coins in coin chute 1 Player 2 display = Coins in coin chute 2 Player 3 display = Coins in coin chute 3 Player 4 display = SERVICE games | With SW4 ON act on CREDIT push-button abt. 5 sec. |
| 08 | Wins | Player 1 display = Games played in total Player 2 display = Won games Player 3 display = Won balls Player 4 display = Won superbonus | With SW4 ON act on CREDIT push-button for abt. 5 sec. |
| 09 | Wins | Player 1 display = H.S. is exceeded Player 2 display = Winning scores are exceeded Player 3 display = Special 1 Player 4 display = Special 2 | With SW4 in ON act for about 5 seconds on CREDIT button. |
| 10 | Service | Player 1 Display = Total number of Tilt 2 Player 2 Display = Credit number cancelled by Tilt 2 | With SW4 in ON act for about 5 seconds on CREDIT button. |

PROGRAMMING

| N. TEST | FUNCTION | PROGRAMMED VALUE | DESCRIPTION | DATA FOR THE PROGRAMMER |
|---------|------------------------------|-------------------|--|--|
| 11 | Coin value 1st coin chute. | from 01 to 10 | Value of the coins for the 1 st coin chute (at the left side close to the hinge). | Whit SW4 on ON act on CREDIT-push-button. |
| 12 | Coin credits 1st coin chute. | from 00 to 15 | Credits per each single coin introduced into the first coin chute. | |
| 13 | Coin value 2nd coin chute. | from 01 to 10 | Value of the coins for the 2nd coin chute (at the right side, close to the key) | |
| 14 | Coin credits 2nd coin chute | from 00 to 15 | Credits per each single coin introduced into the second coin chute. | |
| 15 | Coin value 3rd coin chute | from 01 to 10 | Value of the coin for the 3rd coin chute (in the center). | |
| 16 | Coins credit 3rd coin chute | from 00 to 15 | Credits per each single coin introduced into the third coin chute | |
| 17 | High-Score initial value | from 00.0 to 99.9 | When test 18 is programmed with 00, initial NORMAL H.S. is programmed. If test 18 is programmed 01, the min. RANDOM H.S. is programmed. | NORMAL H.S. can be preset also in Game-over (SW4 in OFF). RANDOM H.S. can be preset only in PROGRAM SW4 in ON). Push CREDIT keep pushed for fast progress. |

| N. TEST | FUNCTION | VALUE PROGRAMMED | DESCRIPTION | PROGRAMMER |
|---------|--|----------------------------|--|--|
| 18 | High Score types | 00 01 | NORMAL H.S. or max. scores achieved by one player. RANDOM H.S. or casual scores that may change at the beginning of each game | With SW4 on ON act on CREDIT push-button. |
| 19 | Max credits | from 10 to 30 | Max number of credits beyond which coin chutes are locked, and no won games are attributed anymore | Act on CREDIT push-button with SW4 on ON |
| 20 | Balls | from 01 to 07 | Balls per play | Act on CREDIT push-button with SW4 on ON |
| 21 | MATCH | 00 01 | Match excluded (no wins) Match connected (1 Replay) | Act on CREDIT push-button with SW4 on ON |
| 22 | 1st winning scores | from 00.0 to 99.9 | 1st winning score, which awards the win programmed on test n.26 when exceeded. 00.0 = no win | With SW4 on ON act stepwise on CREDIT push-button for slow progress. For fast progress keep it pressed |
| 23 | 2nd winning scores | from 00.0 to 99.9 | 2nd winning score which awards the win programmed on test n. 26 when exceeded. 00.0 = no win | |
| 24 | 3rd winning scores | from 00.0 to 99.9 | 3rd winning score which awards the win programmed on test n.26 when exceeded. 00.0 = no win. | |
| 25 | Wins with HIGH SCORE | 00 01 02 03 04 | No win 1 Replay 2 Replay 3 Replay 1 Superbonus | With SW4 on ON act on CREDIT push-button |
| 26 | Wins with scores (see test 22, 23, 24) | 00 01 02 03 04 | No win 1 Bonus Ball 1 Replay 1 Superbonus 2,000,000 points | With SW4 on ON act on CREDIT push-button |
| 27 | Wins with Special 1 "Red Special" | 00 01 02 03 04 | No win 1 Bonus Ball 1 Replay 1 Superbonus 4,500,000 points | With SW4 on ON act on CREDIT push-button |
| 28 | Wins with Special 2 "Orange Special" | 00 01 02 03 04 | No win 1 Bonus Ball 1 Replay 1 Superbonus 1,000,000 points | With SW4 on ON act on CREDIT push-button |
| 29 | Background sound and attraction sounds | 00 01 02 03 | Sound disconnected, attractions connected Sound connected, attractions connected Sound disconnected, attractions disconnected Sound connected, attractions disconnected | With SW4 on ON act on CREDIT push-button |
| 30 | Coin meter | 00 01 | Normal operation both with excluded and with connected impulse meter When impulse meter is disconnected the pin table cannot be used | With SW4 on ON act on CREDIT push-button |
| 31 | Game Time Bonus | 00 01 | <Game time bonus> disconnected Count down connected | With SW4 on ON act on CREDIT push-button |
| 32 | Bonus Ball number variation | 00 01 02 03 | 1 bonus ball 3 Bonus Balls 3 Bonus Balls 3 Bonus Balls | Press CREDIT button when SW4 is ON |
| 33 | Red Special | 00 01 02 03 | Hit the sliding targets "Clown" 6 times Hit the sliding targets "Clown" 5 times Hit the sliding targets "Clown" 4 times Hit the sliding targets "Clown" 3 times | Press CREDIT button when SW4 is ON |
| 34 | Soecial 2 ORANGE | 00 01 02 03 | Hit targets bank 6 times Hit targets bank 4 times Hit targets bank 3 times Hit targets bank 2 times | Press CREDIT button when SW4 is ON |
| 35 | Lions Cage | 00 01-02-03 | No win 1 Bonus ball | Press CREDIT button when SW4 is ON |
| 36 | Not used | | | |
| 37 | Not used | | | |

When impulse meter is disconnected the pin table cannot be used, even though there may be credits available, and the ma-

| CONDITION | CAUSE | REMEDY | NOTES |
|--|---|---|--|
| The game cannot be started | <ul style="list-style-type: none"> - No voltage available - Plug is off - The 3-way connector (CN-line) of the feeder rack is not connected - Mains fuse burned - The 9-way connector (CN-Ja) on the feeder rack disconnected - Mains switch open - Connector (CN 1) on feeder and connectors (CN-J1-J2-J3) on feeder rack disconnected - Voltage change over not or insufficiently connected | <ul style="list-style-type: none"> - Plug in Connect Replace Replace Close Connect Correct | <p>if they burn again, this means that there is a short circuit</p> <p>The voltage change over unit contains also the mains fuse</p> |
| All stationary lamps are not lit | <ul style="list-style-type: none"> - Fuse F2 on the feeder rack thrown out. - CN J1-J2-J3 connector not connected - Electric wire disconnected | <ul style="list-style-type: none"> Replace Plug in Connect | Shall not be more than 20A; if it is thrown out again there is a short-circuit |
| All the piloted lamps are not operating | <ul style="list-style-type: none"> - 5 VRM is not available - The connector between C.P.U. and the interface is disconnected - Interface (CN 16) feeding connector is not plugged in - The connectors of the lamps on interface (CN 18-19-20-21-22) are not connected - The connectors at the feeder board output are disconnected (CN 2-3-4) - At the C.P.U. input and at the interface 5.6 V d.c. are missing - C.P.U. is always cleared - Others | <ul style="list-style-type: none"> Fuse F3 (15A) on Power-board is burned Tighten the loose connectors Fuse F2 (5A) is burned and shall therefore be replaced. If it is thrown out again, there is a short circuit. Replace feeder board. Replace feeder and then replace C.P.U. Replace interface | Test carefully with tester |
| All displays are extinguished. | <ul style="list-style-type: none"> - +170 V d.c. is missing because fuse F1 (1A) is burned. Or high voltage regulator is damaged. Or high voltage regulator safety circuit is actuated. - At C.P.U. -input +5.6 V is missing - CN 14 or all connectors of displays are disconnected - Display damaged - C.P.U. damaged | <ul style="list-style-type: none"> Replace the fuse. Check with the tester whether the high-voltage feeder operates. When safety device is actuated, try to disconnect the displays. If the feeder operates at 170 V this means that on the displays there exists a short circuit. To restore +170 V it is necessary to stop the pintable and then to start it again Check and if necessary replace the F2 (5A) fuse on the feeder board Plug in connectors | |
| On all the displays wrong figures are appearing | <ul style="list-style-type: none"> - Cable damaged - C.P.U. damaged | <ul style="list-style-type: none"> Replace the cable Replace C.P.U. | |
| One or more figures on one or more displays are wrong. | <ul style="list-style-type: none"> - Display damaged - Cabel damaged | | |
| All figures are too bright | <ul style="list-style-type: none"> - +170 V feeder damaged | Replace the feeder board | |
| All the solenoids do not work | <ul style="list-style-type: none"> - 39 VRM input is missing - CN 17 connector is not plugged in - Interface damaged - C.P.U. damaged | <ul style="list-style-type: none"> Reset the fuse . If it is thrown out again there is a short circuit. Plug in the connector Replace the Interface. Replace the C.P.U. | |
| One or more solenoids do not work. | <ul style="list-style-type: none"> - Coils burned - Darlington burned - Electric wires loose - The fuses under the playfield have been thrown out | <ul style="list-style-type: none"> Replace coil and the relevant Darlington Replace the Darlington and check the diode on the coil. Connect the loose wires Reset the burned out fuses | |
| One or more solenoids are always energized | <ul style="list-style-type: none"> - Interface-board damaged - C.P.U. damaged - Short circuit | <ul style="list-style-type: none"> Replace the Interface-board Replace the C.P.U. board | |
| All the contacts remain inactive | <ul style="list-style-type: none"> - CN 10-11 connectors are loose - C.P.U. is damaged | <ul style="list-style-type: none"> Plug in Replace C.P.U.-board | |

| | | | |
|---------------------------------------|---|--|--|
| not work | <ul style="list-style-type: none"> - Interrupted or loose - Contact oxydized | <ul style="list-style-type: none"> Reset the diode Clean the contact | |
| One or more contacts are wrongly read | <ul style="list-style-type: none"> - The contact wires are short circuited and also with respect to the lamp and solenoid wires - Diode contacts are short circuited - C.P.U. is damaged | <ul style="list-style-type: none"> Eliminate the short circuit Replace the short circuited diode Replace C.P.U. | |
| sounds and words are missing | <ul style="list-style-type: none"> - The loudspeaker is not connected or damaged - Loudspeaker potentiometer cut off - CN 8 connector (Sound board) disconnected - 5 V d.c. feeding voltage is missing - +12 V d.c. feeding voltage missing - +5 V d.c. feeding voltage missing - Sound and talk board damaged | <ul style="list-style-type: none"> Connect, if necessary replace Replace another one having similar features Plug in the connector Replace fuse F4 (1A) on the feed board, if burned Replace fuse F2 (5A) on the feed board, if burned If +5 V d.c. are missing, but +12 V d.c. are available, replace the regulator 78H05 Replace the sound and talk board | |

VERY IMPORTANT. Never connect or disconnected the connectors while the game is running

The game is supplied with a special plug to connect a print-out unit that is very useful to print on paper all the most important accounting functions, as well as the serial number of the game.
 Hereafter a fac-simile print out.
 The same plug is to be used also for the coin meter.

CLOWN

SERIAL N 1532
 WONNED G 000000
 PLAYED G 000003
 COINS # 1 000003
 COINS # 2 000003
 COINS # 3 000003

| CONNECTOR | PIN | WIRE COLOUR | SIGNAL |
|-----------|-----|-------------|--------|
|-----------|-----|-------------|--------|

POWER Board

| | | | |
|---|--|---|---|
| CN1 * * * * * * * * * * * * * | → 1 2 3 4 5 6 7 8 9 10 11 12 | □ Red Red Brown Brown Yellow Yellow Blue Blue White White Green Green | - 165 Vac 0,3 A 165 Vac 0,3 A 10 Vac 0,5 A 10 Vac 0,5 A 10,5 Vac 6 A 10,5 Vac 6 A 43 Vac 5 A 43 Vac 5 A 6,5 Vac 15 A 6,5 Vac 15 A 6,5 Vac 15 A 6,5 Vac 15 A |
| CN2 * * * * * * | → 1 2 3 4 5 6 | □ - Black - Violet Pink White | - - GND - +39 Vrm common for all the solenoid in the cabinet Cabinet - Playfield interconnections For flipper control |
| CN3 * * * * * * | → 1 2 3 4 5 6 | □ White Pink - Brown Violet - | - Cabinet - Playfield interconnections For flipper control - +5 Vrm common all controlled playfield lamps +39 Vrm common for playfield solenoids |
| CN4 * * * * | → 1 2 3 4 | □ - Brown Violet - | - - +5 Vrm common light board controlled lamps +39 Vrm common for head solenoids |
| CN5 * * * * * * * * * * * * * * | → 1 2 3 4 5 6 7 8 9 10 11 12 | □ Orange Black Black Red Red White Black Yellow Black Green Red Blue | - Flipper Relay GND GND + 5,6 Vdc + 5,6 Vdc Power Failure GND 170 Vcc GND - 5 Vdc + 5,6 Vdc + 12 Vdc |

SOUND Board

| | | | |
|---------------------------|-----------------------|------------------------------------|--|
| CN5-T * * * * | → 1 2 3 4 | □ Black Green Red Blue | - GND - 5 Vdc + 5,6 Vdc + 12 Vdc |
| CN5-C * * | 5 6 | Yellow-grey Violet White | Output Sound e Speech Output Sound e Speech |

C.P.U. board

| | | | |
|------------------------------------|---------------------------------|--|---|
| CN9 * * * * | → 1 2 3 4 | - Yellow Black White Red | - 170 VCC GND Power Failure + 5,6 VDC |
| CN10 * * * * * * | 1 2 3 4 5 6 7 | Orange-Yellow Yellow-Grey White-Pink Black-Pink - White Grey | Printer -RX + Printer -RX - Printer -TX - Printer -TX + - Contacts-row 2 Contacts-row 1 |

| | | | |
|--|-----|---------------|---------------------|
| CN10 * * * * * * * * * * | 8 | --- | --- |
| | 9 | --- | --- |
| | 10 | Grey-white | Contacts - column 8 |
| | 11 | Black-white | Contacts - column 1 |
| | 12 | Red-green | Contacts - column 2 |
| | 13 | Black-yellow | Contacts - column 3 |
| | 14 | Black-orange | Contacts - column 4 |
| | 15 | Red-yellow | Contacts - column 5 |
| | 16 | --- | --- |
| | 17 | Brown-violet | Contacts - column 6 |
| | 18 | Yellow-violet | Contacts - column 7 |
| 19 | --- | --- | |
| 20 | --- | --- | |
| CN11 * | 1 | --- | --- |
| | 2 | --- | --- |
| | 3 | Red | Contacts - row 2 |
| | 4 | Yellow | Contacts - row 3 |
| | 5 | Black | Contacts - row 4 |
| | 6 | Green | Contacts - row 5 |
| | 7 | Blue | Contacts - row 6 |
| | 8 | --- | --- |
| | 9 | --- | --- |
| | 10 | Grey-white | Contacts - column 8 |
| | 11 | Black-white | Contacts - column 1 |
| | 12 | Red-green | Contacts - column 2 |
| | 13 | Black-yellow | Contacts - column 3 |
| | 14 | Black-orange | Contacts - column 4 |
| | 15 | Red-yellow | Contacts - column 5 |
| | 16 | Brown-violet | Contacts - column 6 |
| | 17 | Yellow-violet | Contacts - column 7 |
| | 18 | --- | --- |
| | 19 | --- | --- |
| | 20 | --- | --- |

INTERFACE Board

| | | | |
|--|-------------|------------------------|-----------------------------|
| CN16 * * * * | 1 | □ Black | Gnd |
| | 2 | Red | + 5.6 Vdc |
| | 3 | Black | GND |
| | 4 | Orange | Flipper Relay |
| CN17-C * * * | 1 | □ White-Pink | Knocker |
| | 2 | Red-White | Coin mechanism coil |
| | 3 | Yellow-Pink | Token dispenser |
| CN17-P/1 * * * * * * * * * * | 4 | Violet-White | Top hole |
| | 5 | Yellow-White | Right pop |
| | 6 | Brown-White | Out hole |
| | 7 | Blue-White | Right flap |
| | 8 | Green-White | Left-flap |
| | 9 | Brown-Green | Top bank |
| | 10 | Red-Green | Central pop |
| | 11 | Orange-Yellow | Moving 3rd single target |
| | 12 | Orange-White | Moving 1st single target |
| | 13 | Brown-Yellow | Left pop |
| CN17-P/2 * * * | 14 | Grey-White | Moving 2nd single target |
| | 15 | Black-White | Motor target |
| | 16 | Black-Green | Motor relay |
| CN 17 * * * * * * * | 17 | --- | --- |
| | 18 | --- | --- |
| | 19 | --- | --- |
| | 20 | --- | --- |
| | 21 | --- | --- |
| | 22 | --- | --- |
| | 23 | --- | --- |
| | 24 | --- | --- |
| CN18 * * * * * * * * * * * * * * * * | 1 | Yellow-white | "C" red special |
| | 2 | Light blue | Right pop |
| | 3 | Yellow-Blue | "N" red special |
| | 4 | Grey-Light Green | Spinning target |
| | 5 | White-Pink | Central pop |
| | 6 | Brown-Pink | "O" red special |
| | 7 | Orange-Grey | Left pop |
| | 8 | Green-Violet | Right exit canal |
| | 9 | Orange-Yellow | X 80 |
| | 10 | Green-White | "L" red special |
| | 11 | Red-White | "W" red special |
| | 12 | Orange-Light green | 100,000 PTS top hole |
| | 13 | White | Adv. multiplier right canal |
| | 14 | Brown | 30,000 PTS right canal |
| | 15 | Red-Blue | 150,000 PTS spinning target |
| | 16 | Orange-Violet | Left canal |
| 17 | Blue-Grey | 300,000 PTS top hole | |
| 18 | Black-Red | 200,000 PTS top hole | |
| 19 | Orange-Blue | Fixed target | |
| 20 | Blue-White | 50,000 PTS right canal | |

| | | | |
|------|----|-------------------|-----------------------------|
| | 1 | Pink | Special top hole |
| | 2 | Orange-White | 50.000 PTS spinning target |
| | 3 | Brown-Light green | 100.000 PTS spinning target |
| | 4 | Red-Violet | 20.000 PTS orange special |
| | 5 | --- | --- |
| | 6 | Brown | 50.000 PTS top hole |
| | 7 | Brown-Orange | 50.000 PTS orange special |
| | 8 | Violet-Pink | 300.000 PTS spinning target |
| | 9 | Yellow-Grey | Orange special |
| | 10 | Green-Blue | Bonus ball 1 |
| | 11 | Brown-Yellow | 10.000 PTS orange special |
| | 12 | Violet | Bonus 2 |
| | 13 | Blue-Violet | 30.000 PTS orange special |
| | 14 | Black-Grey | Bonus 8 |
| | 15 | Black-Blue | Bonus 4 |
| | 16 | Blue-Pink | Bonus 3 |
| | 17 | --- | --- |
| | 18 | Yellow-Pink | Bonus 1 |
| | 19 | Black-Pink | Bonus 5 |
| | 20 | Yellow-Green | Bonus 9 |
| CN20 | 1 | Yellow-White | X 40 |
| | 2 | Light blue | X 80 |
| | 3 | Brown-Blue | Bonus 10 000 PTS |
| | 4 | Light green-Grey | Bonus 10 |
| | 5 | White-Pink | Bonus 7 |
| | 6 | Brown-Pink | Bonus 6 |
| | 7 | --- | --- |
| | 8 | --- | --- |
| | 9 | --- | --- |
| | 10 | Green-White | Red special |
| | 11 | Black-Violet | X 20 |
| | 12 | --- | --- |
| | 13 | --- | --- |
| | 14 | --- | --- |
| | 15 | --- | --- |
| | 16 | --- | --- |
| | 17 | --- | --- |
| | 18 | --- | --- |
| | 19 | --- | --- |
| | 20 | --- | --- |
| CN21 | 1 | --- | --- |
| | 2 | --- | --- |
| | 3 | --- | --- |
| | 4 | --- | --- |
| | 5 | --- | --- |
| | 6 | --- | --- |
| | 7 | --- | --- |
| | 8 | --- | --- |
| | 9 | --- | --- |
| | 10 | --- | --- |
| | 11 | --- | --- |
| | 12 | --- | --- |
| | 13 | --- | --- |
| | 14 | --- | --- |
| | 15 | --- | --- |
| | 16 | --- | --- |
| | 17 | --- | --- |
| | 18 | --- | --- |
| | 19 | --- | --- |
| | 20 | --- | --- |
| CN22 | 1 | --- | --- |
| | 2 | Blue-White | Bonus ball 2 |
| | 3 | Brown-Violet | Up game time bonus |
| | 4 | Black-Orange | Balls to play |
| | 5 | Red-Yellow | Credit |
| | 6 | Black-Yellow | Match |
| | 7 | Violet-White | 1st lighting effects head |
| | 8 | Green | Can play 1 |
| | 9 | Violet-Pink | Bonus ball 3 |
| | 10 | Black-White | Tilt |
| | 11 | Red-Grey | 2nd lighting effects head |
| | 12 | Yellow | Can play 2 |
| | 13 | Black | Can play 4 |
| | 14 | Yellow-Violet | Down game time bonus |
| | 15 | Grey-White | Game over |
| | 16 | Red-green | Super bonus |
| | 17 | Red | Can play 3 |
| | 18 | Blue | Highest score |
| | 19 | Green-Blue | Bonus ball 1 |
| | 20 | --- | --- |

CABINET

| | | | |
|--------------------------|---|---------------|-----------------|
| Printer service optional | A | Red | 43 Vac |
| " | B | Black | 43 Vac |
| " | C | Yellow-violet | Column 7 |
| " | D | Grey | Row 1 |
| " | E | Orange-Yellow | Printer RX + |
| " | F | Yellow-grey | Printer RX— |
| " | G | White-pink | Printer TX— |
| " | H | Black-pink | Printer TX + |
| J4 | 1 | Brown | Electric wier |
| " | 2 | Yellow | Service socket |
| " | 3 | Red | Service socket |
| " | 4 | Yellow-green | Electric wier |
| " | 5 | Red | 43 Vac |
| " | 6 | Black | Electric filter |
| " | 7 | Light blue | Electric wier |
| " | 8 | Black | 43 Vac |
| " | 9 | Blue | Electric filter |

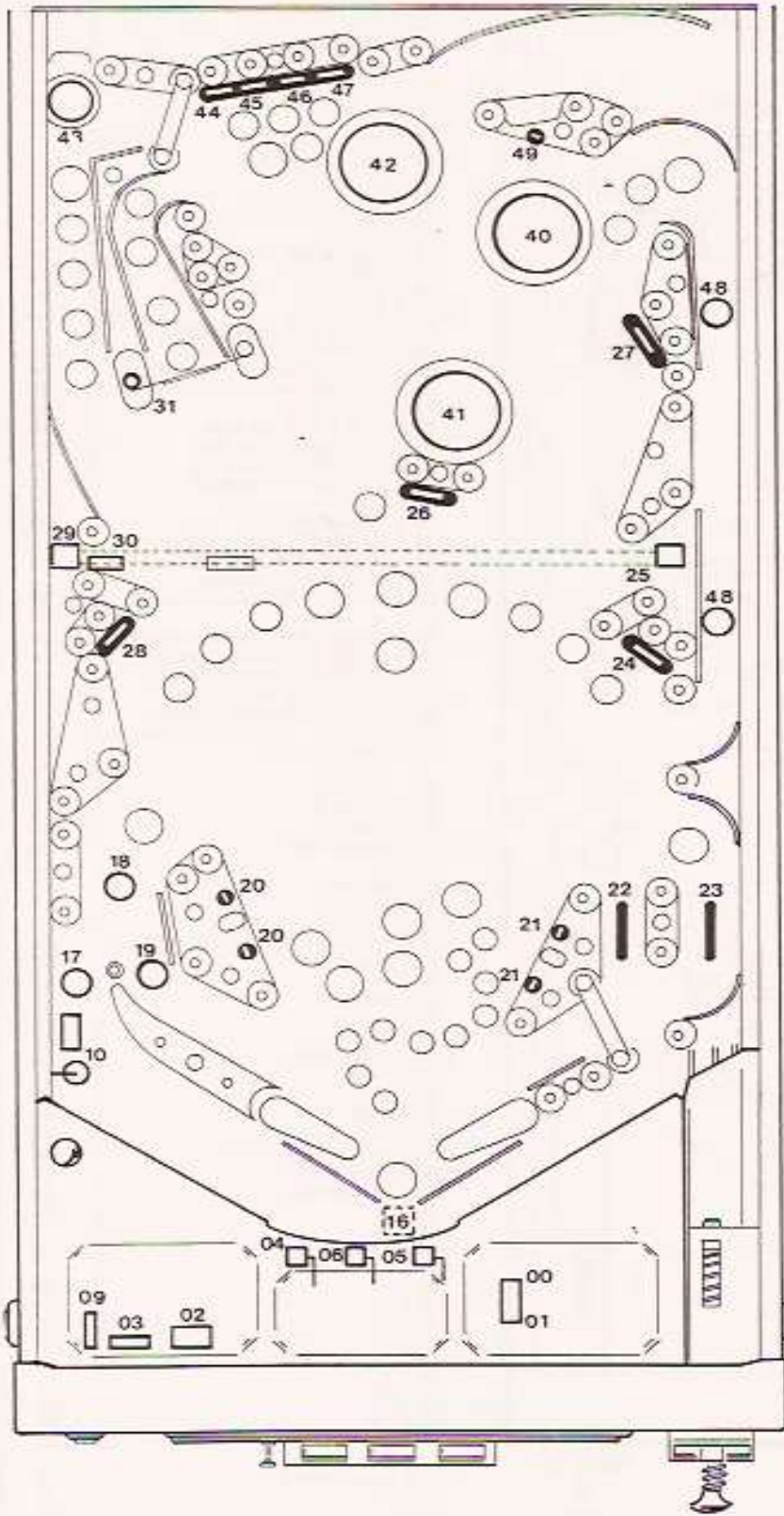
TAV. I

Programmi base - Basic programs - Programmes de base - Grundprogramme

| N° test | ITALIA 1 | | | ITALIA | | | GREAT BRITAIN | | | FRANCE | | | DEUTSCH. | | | BELGIOUE | | | JUGOSLA. | | | U. S. A. | | |
|---------------|----------|----|----|--------|----|----|---------------|-----|----|--------|-----|----|----------|----|-----|----------|----|-----|----------|-----|-----|----------|-----|-----|
| | SW | | | SW | | | SW | | | SW | | | SW | | | SW | | | SW | | | | | |
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | on | on | on | off | on | on | on | off | on | off | off | on | on | on | off | off | on | off | on | off | off | off | off | off |
| 11 | 01 | | | 02 | | | 01 | | | 01 | | | 01 | | | 01 | | | 01 | | | 01 | | |
| 12 | 00 | | | 01 | | | 00 | | | 00 | | | 01 | | | 00 | | | 01 | | | 01 | | |
| 13 | 02 | | | 05 | | | 02 | | | 05 | | | 02 | | | 04 | | | 02 | | | 01 | | |
| 14 | 01 | | | 03 | | | 01 | | | 03 | | | 03 | | | 02 | | | 02 | | | 01 | | |
| 15 | 02 | | | 05 | | | 5 | | | 10 | | | 05 | | | 04 | | | 02 | | | 01 | | |
| 16 | 01 | | | 03 | | | 3 | | | 07 | | | 07 | | | 02 | | | 02 | | | 01 | | |
| 17 | 500 | | | 750 | | | 750 | | | 750 | | | 750 | | | 750 | | | 750 | | | 750 | | |
| 18 High score | 0 | | | 1 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | |
| 19 | 15 | | | 15 | | | 15 | | | 15 | | | 15 | | | 15 | | | 15 | | | 15 | | |
| 20 | 03 | | | 03 | | | 03 | | | 03 | | | 03 | | | 03 | | | 03 | | | 03 | | |
| 21 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 22 | 150 | | | 300 | | | 300 | | | 300 | | | 300 | | | 300 | | | 300 | | | 300 | | |
| 23 | 400 | | | 600 | | | 600 | | | 600 | | | 600 | | | 600 | | | 600 | | | 600 | | |
| 24 | 000 | | | 000 | | | 000 | | | 000 | | | 000 | | | 000 | | | 000 | | | 000 | | |
| 25 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 26 | 1 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | |
| 27 | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | |
| 28 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 29 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 30 | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | |
| 31 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 32 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 33 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 34 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 35 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| 36 | — | | | — | | | — | | | — | | | — | | | — | | | — | | | — | | |
| 37 | — | | | — | | | — | | | — | | | — | | | — | | | — | | | — | | |

Contact arrangement

Contact Number Description

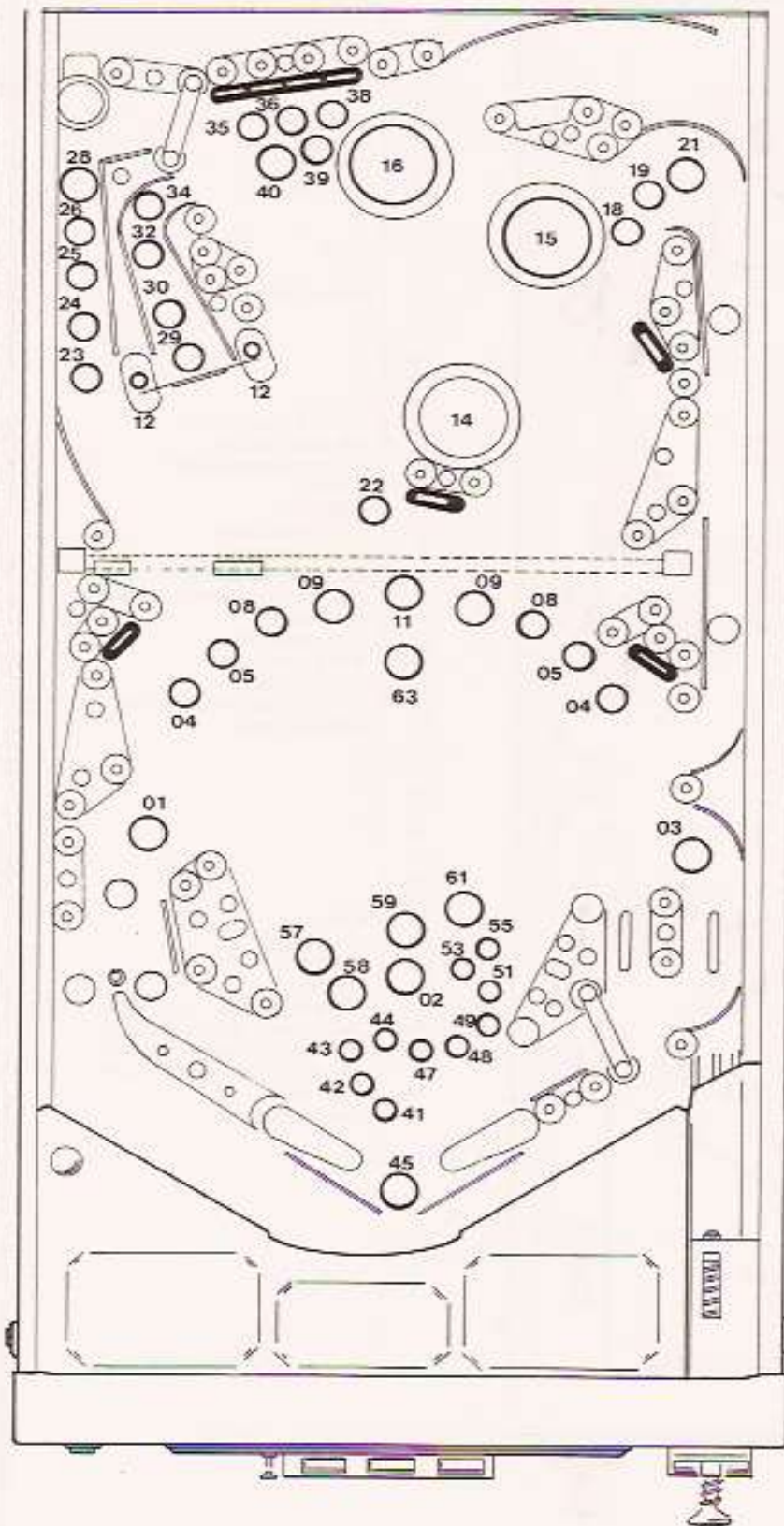


- 00 Advancement test
- 01 Return test
- 02 Tilt 2
- 03 Credit Service
- 04 Coin Switch 1
- 05 Coin Switch 2
- 06 Coin Switch 3
- 07 —
- 08 —
- 09 Credit
- 10 Tilt
- 11 Factory burn test
- 12 —
- 13 —
- 14 —
- 15 —
- 16 Out hole
- 17 Left exit canal button
- 18 Left canal button
- 19 Left innex canal button
- 20 Left flap
- 21 Right flap
- 22 Right innex canal
- 23 Right exit canal
- 24 1ST single target
- 25 Right limit stop sliding target
- 26 Fixed target
- 27 2ND single target
- 28 3RD single target
- 29 Sliding target
- 30 Left limit stop sliding target
- 31 Spinning target
- 32 —
- 33 —
- 34 —
- 35 —
- 36 —
- 37 —
- 38 —
- 39 —
- 40 Right pop
- 41 Central pop
- 42 Left pop
- 43 Top hole
- 44 1ST moving target right bank
- 45 2ND moving target right bank
- 46 3RD moving target right bank
- 47 4TH moving target right bank
- 48 Right canal
- 49 Fixed contact

pag.46

Inside the cabinet contacts

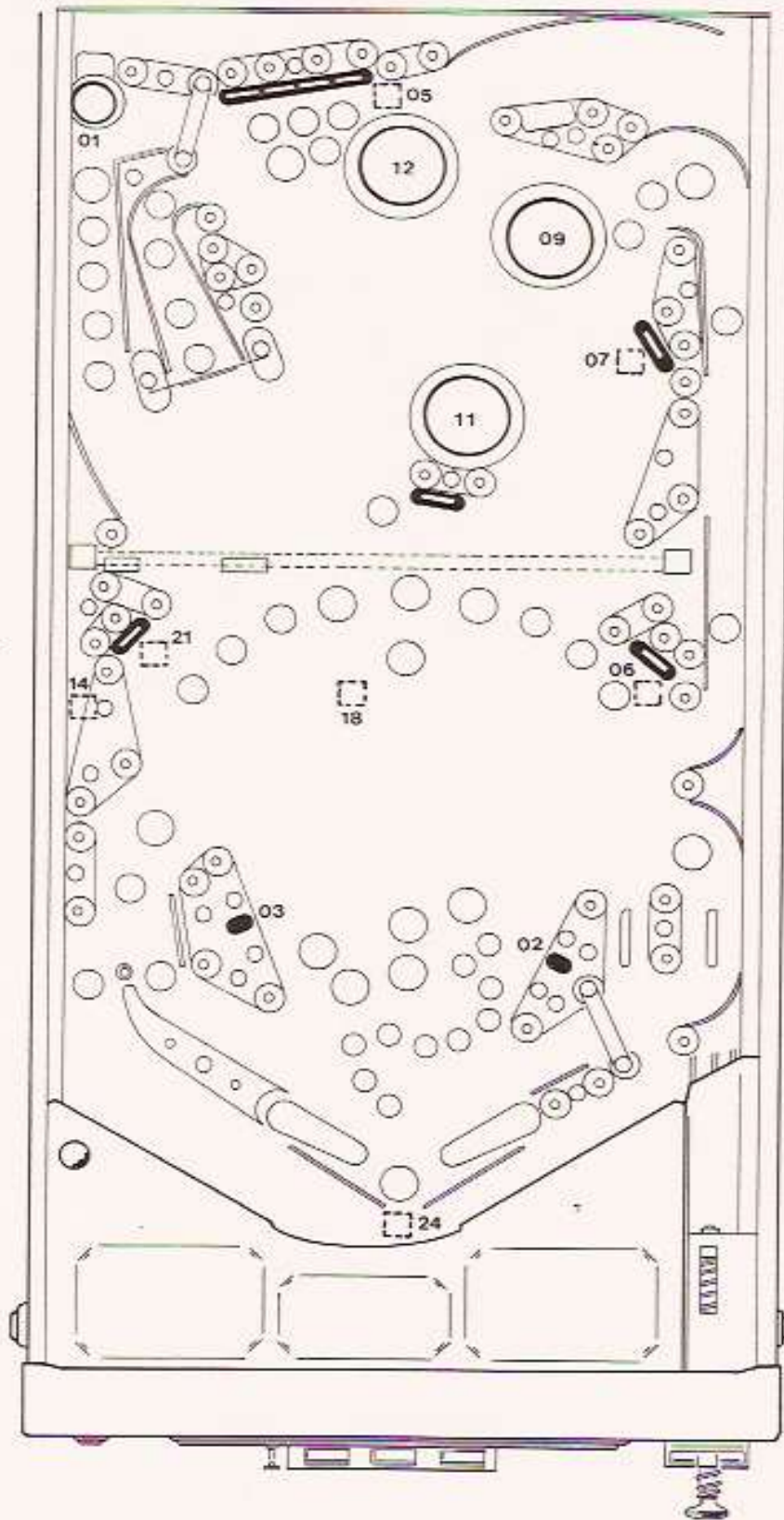
Lamp arrangement



| Lamp | Description | Drive n° SCR |
|------|--------------------------------|--------------|
| 01 | Left canal | 80 |
| 02 | X 60 | 86 |
| 03 | Right exit canal | 87 |
| 04 | "C" red special | 78 |
| 05 | "L" red special | 70 |
| +06 | Game over | 68 |
| +07 | Tit | 65 |
| 08 | "O" red special | 72 |
| 09 | "W" red special | 71 |
| 10 | --- | 76 |
| 11 | "N" red special | 77 |
| 12 | Spinning target | 75 |
| +13 | Match | 74 |
| 14 | Central pop | 73 |
| 15 | Right pop | 79 |
| 16 | Left pop | 69 |
| +17 | Ball to play | 8 |
| 18 | 30.000 PTS right canal | 45 |
| 19 | 50.000 PTS right canal | 35 |
| +20 | Flipper relay | 64 |
| 21 | Advance multiplier right canal | 54 |
| 22 | Fixed target | 44 |
| 23 | 50.000 PTS top hole | 26 |
| 24 | 100.000 PTS top hole | 63 |
| 25 | 200.000 PTS top hole | 18 |
| 26 | 300.000 PTS top hole | 27 |
| +27 | Credit | 9 |
| 28 | Special top hole | 53 |
| 29 | 50.000 PTS spinning target | 17 |
| 30 | 100.000 PTS spinning target | 62 |
| +31 | Up game time bonus | 7 |
| 32 | 150.000 PTS spinning target | 36 |
| 33 | --- | 43 |
| 34 | 300.000 PTS spinning target | 61 |
| 35 | 10.000 PTS orange special | 15 |
| 36 | 20.000 PTS orange special | 16 |
| +37 | 1ST lighting effects head | 25 |
| 38 | 30.000 PTS orange special | 33 |
| 39 | 50.000 PTS orange special | 34 |
| 40 | Orange special | 52 |
| 41 | Bonus 1 | 23 |
| 42 | Bonus 2 | 24 |
| 43 | Bonus 3 | 5 |
| 44 | Bonus 4 | 51 |
| +45 | Bonus ball 1 | 6 |
| 46 | --- | 41 |
| 47 | Bonus 5 | 59 |
| 48 | Bonus 6 | 13 |
| 49 | Bonus 7 | 31 |
| +50 | 2ND lamp lighting-effects head | 14 |
| 51 | Bonus 8 | 60 |
| 52 | --- | 42 |
| 53 | Bonus 9 | 32 |
| 54 | --- | 50 |
| 55 | Bonus 10 | 49 |
| +56 | Super Bonus | 3 |
| 57 | X 20 | 21 |
| 58 | X 40 | 4 |
| 59 | X 80 | 40 |
| +60 | Can play 1 | 22 |
| 61 | Bonus 10.000 PTS | 58 |
| +62 | Can play 2 | 12 |
| 63 | Red special | 30 |
| 64 | --- | 39 |
| 65 | --- | 57 |
| +66 | Can play 3 | 2 |
| +67 | Can play 4 | 11 |
| 68 | --- | 48 |
| 69 | --- | 20 |
| 70 | --- | 38 |
| 71 | --- | 56 |
| +72 | Down game time bonus | 10 |
| 73 | --- | 37 |
| 74 | --- | 29 |
| 75 | --- | 47 |
| +76 | Bonus ball 2 | 28 |
| +77 | Highest score | 1 |
| +78 | Bonus ball 3 | 19 |
| 79 | --- | 46 |
| 80 | --- | 55 |

+ : head lamps
 ++ : head and playfield lamps

Solenoid arrangement



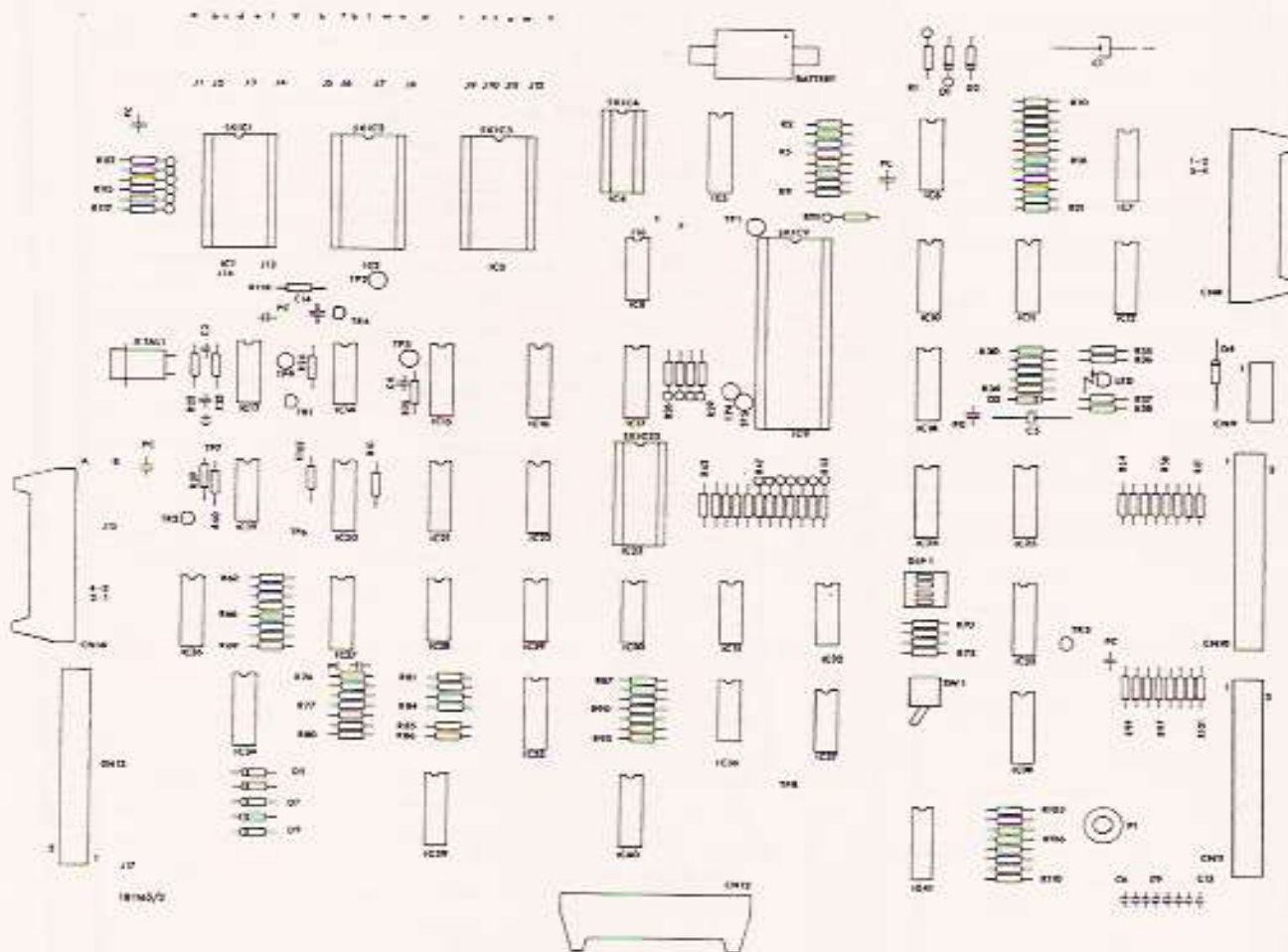
| Sol n° | Description | Drive (dar-lington) |
|--------|--------------------------|---------------------|
| 01 | Top hole | 5 |
| 02 | Right flap | 14 |
| 03 | Left flap | 9 |
| 04 | Knocker | 20 |
| 05 | Right bank | 4 |
| 06 | Moving 1ST single target | 13 |
| 07 | Moving 2ND single target | 3 |
| 08 | Coin mechanism coil | 15 |
| 09 | Right pop | 19 |
| 10 | — | 7 |
| 11 | Central pop | 18 |
| 12 | Left pop | 8 |
| 13 | — | 6 |
| 14 | Motor target | 17 |
| 15 | — | 12 |
| 16 | — | 2 |
| 17 | — | 1 |
| 18 | Motor relay | 22 |
| 19 | — | 21 |
| 20 | — | 11 |
| 21 | Moving 3RD single target | 23 |
| 22 | Token dispenser | 10 |
| 23 | — | 16 |
| 24 | Out hole | 24 |

ELETRONICA

catalogo ricambi

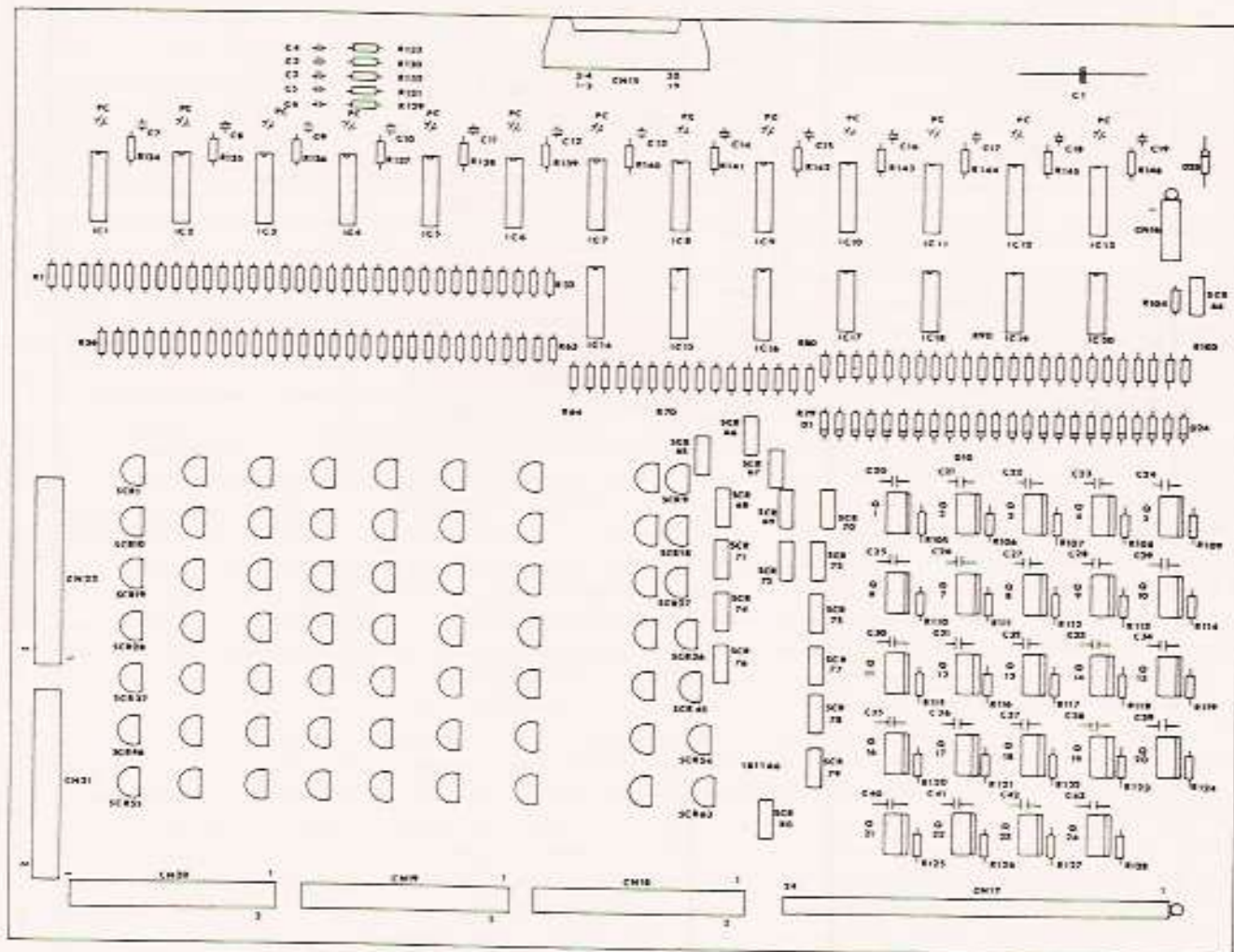
| | | |
|------------|--|---------|
| TAV. XIV | - Ha) SCHEDA C.P.U. serigrafia _____ | pag. 18 |
| | - Ha) SCHEDA C.P.U. elenco componenti _____ | pag. 19 |
| TAV. XV | - Hb) SCHEDA INTERFACCIA serigrafia _____ | pag. 20 |
| | - Hb) SCHEDA INTERFACCIA elenco componenti _____ | pag. 21 |
| TAV. XVI | - Hc) SCHEDA ALIMENTATORE serigrafia _____ | pag. 22 |
| | - Hc) SCHEDA ALIMENTATORE elenco componenti _____ | pag. 23 |
| TAV. XVII | - Hd) SCHEDA SUONO & PARLATO serigrafia _____ | pag. 24 |
| | - Hd) SCHEDA SUONO & PARLATO elenco componenti _____ | pag. 25 |
| TAV. XVIII | - He) SCHEDA VISUALIZZATORE serigrafia _____ | pag. 27 |
| | - He) SCHEDA VISUALIZZATORE elenco componenti _____ | pag. 28 |

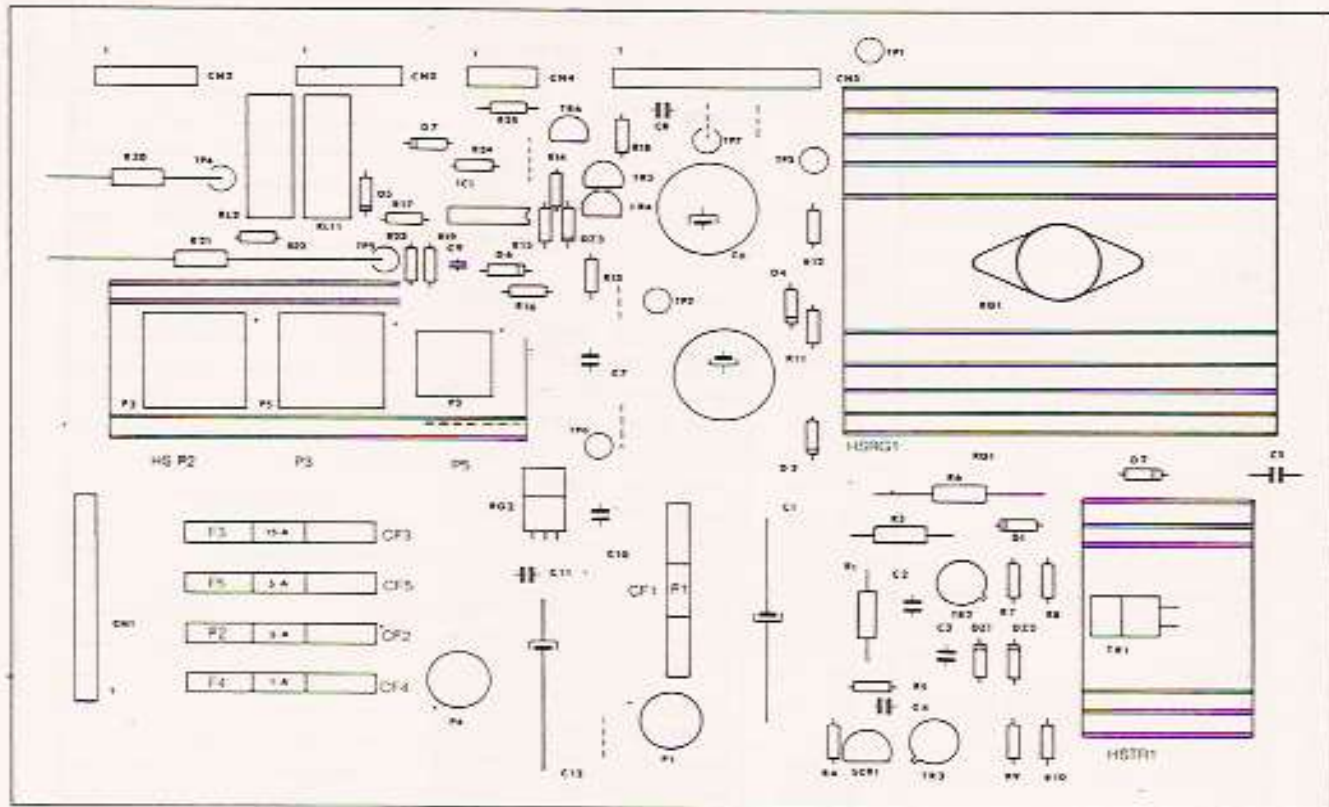
-EB 0222- SCHEDA C.P.U. SENZA MEMORIE
 -EC 1039- SCHEDA C.P.U. CON MEMORIE «CLOWN»



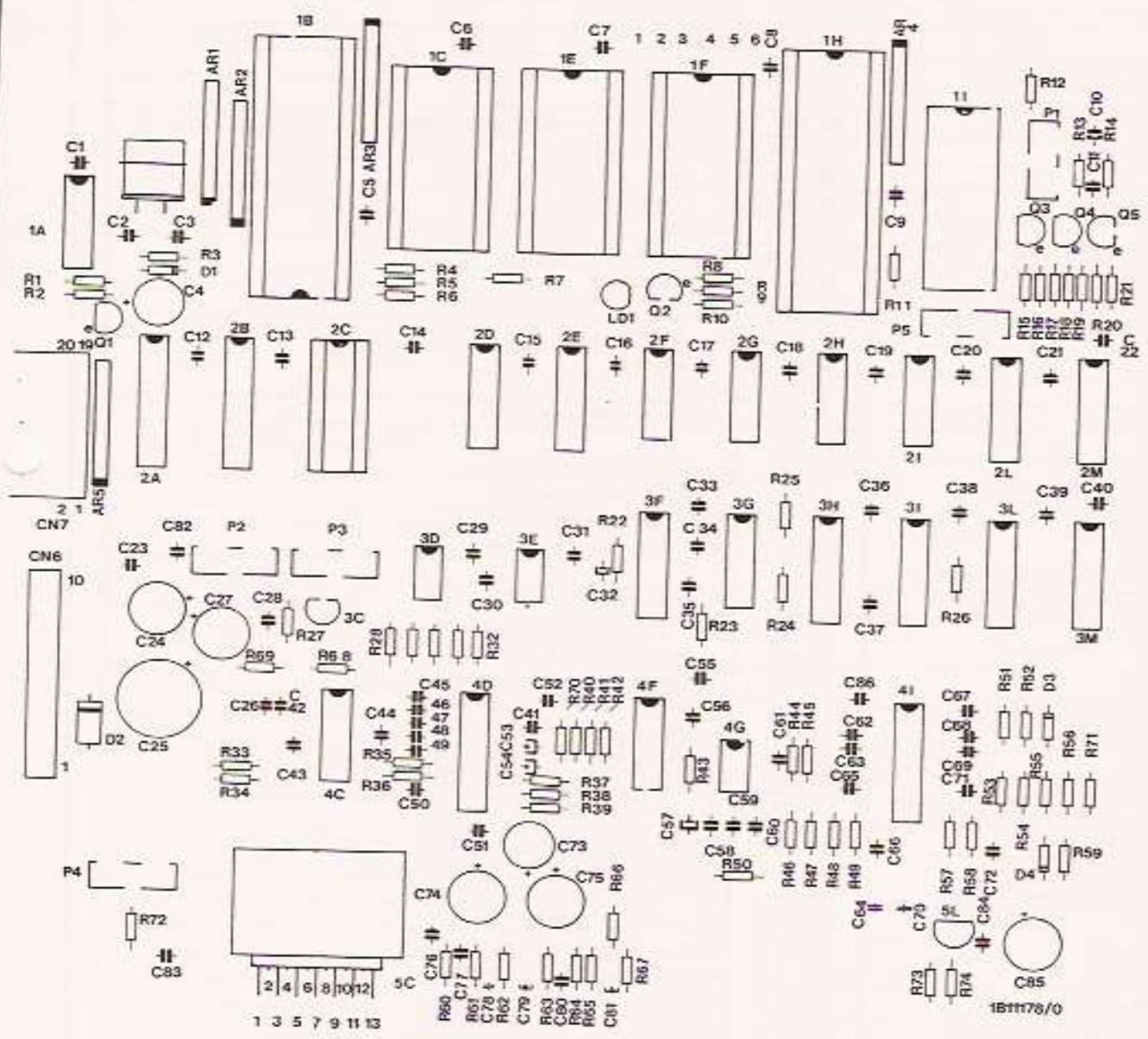
| N° | RIFERIMENTO | CODICE | DESCRIZIONE |
|----|---------------|---------|------------------------------------|
| 1 | PC 1B 11 65/2 | E1 2155 | Scheda circuito stampato 1B 1165/2 |
| 2 | CNN | E7 1980 | CNN 4 vie MTA maschio 640 383-4 |

| N° | RIFERIMENTO | CODICE | DESCRIZIONE |
|----|-----------------------------------|---------|--|
| 3 | CN10 CN11 | E7 1981 | CNN 20 vie MTAS 4-826379-0 maschio |
| 4 | CN8 CN12 CN14 | E7 1351 | CNN 20 vie flat cable maschio |
| 5 | IC9 | E6 1668 | C.I. 2850 A-1 MOS 8 bit M. Proc. |
| 6 | IC23 | E6 1227 | C.I. 2101 AL-4 MOS 256 x 4 RAM |
| 7 | IC5 | E6 1661 | C.I. 2114 L MOS 1K x 4 RAM |
| 8 | IC4 | E6 3004 | C.I. 6414-9 CMOS 1K x 4 RAM |
| 9 | IC19 | E6 1014 | C.I. 4001 BP CMOS quad nor gate |
| 10 | IC28 | E6 1394 | C.I. 4002 BP dual 4-in nor gate |
| 11 | IC37 | E6 1016 | C.I. 4011 BP CMOS quad 2-in nand gate |
| 12 | IC31 | E6 1228 | C.I. 4012 BP CMOS dual 4-in nand gate |
| 13 | IC27 IC35 IC36 IC41 | E6 1230 | C.I. 4028 BP CMOS 10/10 decoder |
| 14 | IC6 IC10 IC11 IC33 | E6 1231 | C.I. 4042 BP CMOS quad D latch |
| 15 | IC15 IC21 | E6 1995 | C.I. 4040 BP CMOS 12 stage binary count |
| 16 | IC29 IC30 | E6 1015 | C.I. 4069 BP CMOS hey inverter |
| 17 | IC32 | E6 1883 | C.I. 4556 CMOS Ic dual 10/4 decoder |
| 18 | IC18 IC24 IC25 | E6 1055 | C.I. 40097 BP CMOS 3 stage non inverter buffer |
| 19 | IC8 | E6 3365 | C.I. 74HC00 TTL MOS quad 2-in nand gate or |
| | | E6 1134 | C.I. 74LS00 TTL quad 2-in nand gate |
| 20 | IC13 | E6 1177 | C.I. 74LS14 TTL hey Schmitt trigger |
| 21 | IC 17 | E6 1432 | C.I. 74LS156 TTL dual 10/4 decoder |
| 22 | IC16 IC22 | E6 1433 | C.I. 74LS157 TTL quad 2-in MPX |
| 23 | IC20 | E6 1131 | C.I. 74LS161 TTL sync. binary count. |
| 24 | IC14 | E6 1786 | C.I. 74LS393 TTL dual 4 bit binary count |
| 25 | IC7 IC12 IC26 IC34 IC38 IC39 IC40 | E6 1225 | Transistore TDA 3081 |
| 26 | TR1 TR2 TR3 | E5 1438 | Transistore silicio BC 548 NPN |
| 27 | TR4 | E5 1290 | Transistore silicio BC 337 NPN |
| 28 | D4 | E5 1299 | Diode 1N 5400 |
| 29 | D1 D2 D5 - D9 | E5 1009 | Diode 1N 4003 |
| 30 | D3 | E5 1011 | Diode 1N 4148 |
| 31 | BATT | E1 1396 | Batteria 3.6V 100mA |
| 32 | SKIC 9 | E7 1245 | Zoccolo 40 vie 540 AG 11D |
| 33 | SKIC1 SKIC2 | E7 3236 | Zoccolo 28 vie 528 AG11D |
| 34 | SKIC4 | E7 3080 | Zoccolo 18 vie 518 AG11D |
| 35 | C1 | E4 1118 | Cond. elettr. 100uF 16VL vert. |
| 36 | C5 | E4 1100 | Cond. elettr. 10uF 16VL orr. |
| 37 | PC | E4 1005 | Cond. ceram. 0,1uF 50VL |
| 38 | C4 | E4 3095 | Cond. ceram. 10KpF 50VL NPO |
| 39 | D6 - C13 | E4 1159 | Cond. ceram. 1kpF |
| 40 | C2 | E4 1513 | Cond. ceram. 470pF 50VL |
| 41 | C14 | E4 1381 | Cond. ceram. 220pF |
| 42 | C3 | E4 1906 | Cond. 10pF 50VL |
| 43 | R2 - R9-R25-R42 - R53-R102- | | |
| | R112 - R117 | E3 1171 | Resist. 10K 1/4W 5% carbone |
| 44 | R10 - R21 R24 R35 R39 R40 | | |
| | R54 - R69 R74 - R93 R103 - R111 | E3 1028 | Resist. 5K5 1/4 W 5% carbone |
| 45 | R26 - R34 R41 | E3 1164 | Resist. 2K2 1/4 W 5% carbone |
| 46 | R37 R70 - R73 R94-R101 | E3 1170 | Resist. 1K 1/4W 5% carbone |
| 47 | R22 R23 | E3 1392 | Resist. 680 1/4W 5% carbone |
| 48 | R36 | E3 1269 | Resist. 390 1/4W 5% carbone |
| 49 | R1 | E3 1409 | Resist. 100 1/4W 5% carbone |
| 50 | R38 | E3 3094 | Resist. 22 1/2W 5% carbone |
| 51 | R118 | E3 1194 | Resist. 22K 1/4 W 5% carbone |
| 52 | XTAL 1 | E1 1743 | Quarzo 6MHZ HC 18/U |
| 53 | DIP 1 | E9 1356 | Dip switch 4 vie |
| 54 | LED 1 | E5 1542 | Led rosso FVL 110 |
| 55 | IC2 | E6 3221 | Memoria B 2764 MOS 8192 x 8 EPROM |
| 56 | IC1 | E6 1962 | Memoria B 2532 MOS 4096 x 8 EPROM |
| 57 | IC1 (programmata) | EB 1104 | Memoria B 2532 MOS 4096 x 8 EPROM tipo Clown 1 |
| 58 | IC2 (programmata) | EB 1105 | Memoria B 2764 MOS 8192 x 8 EPROM tipo Clown 2 |





-EB 1106- SCHEDA SUONO PARLATO ASS. SENZA MEMORIE
 -EC 1040- SCHEDA SUONO PARLATO ASS. CON MEMORIE «CLOWN»

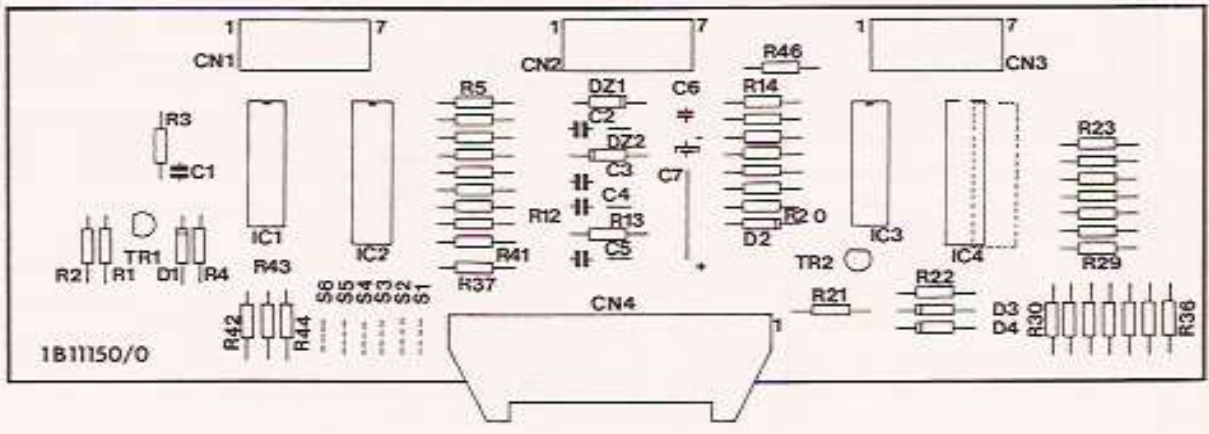


| | | | |
|----|---|---------|---|
| 1 | 1B 11 178/0 | E1 4014 | Circuito stampato 1B 11 178/0 |
| 2 | CN6 | E7 1983 | CNN 6 vie MTA maschio |
| 3 | CN7 | E7 1351 | CNN Flat cable 20 vie maschio |
| 4 | 1F1E1C | | Memorie programmate per flipper Clown |
| 5 | 1B | E6 1714 | Microprocessore 6802 |
| 6 | 1H | E6 1715 | PIA 6821 |
| 7 | 1 I | E6 3330 | Speech generator 5220 (5200) TMS |
| 8 | 2D | E6 1670 | C.I. 74LS139 |
| 9 | 1A | E6 1177 | C.I. 74LS14 |
| 10 | 2F | E6 1145 | C.I. 74LS08 |
| 11 | 2L | E6 1995 | C.I. 4040 |
| 12 | 2A | E6 1589 | C.I. 74LS244 |
| 13 | 2E | E6 1144 | C.I. 74LS138 |
| 14 | 2G | E6 1133 | C.I. 74LS04 |
| 15 | 2I | E6 1147 | C.I. 74LS32 |
| 16 | 3H/3I | E6 1867 | C.I. 74LS259 |
| 17 | 2B | E6 1843 | C.I. 74LS374 |
| 18 | 2C | E6 4002 | C.I. DAC 1232 convertitore analog. dig. |
| 19 | 3D/3E | E6 1802 | C.I. TL081 (TL071) |
| 20 | 3F | E6 1435 | C.I. 4053 |
| 21 | 3G/4C | E6 3390 | C.I. TL084 |
| 22 | 3L | E6 4019 | C.I. 4051 |
| 23 | 3C | E6 4003 | C.I. LM 366 |
| 24 | 4I | E6 3375 | C.I. CEM 3374 |
| 25 | 4G | E6 1665 | C.I. TL082 |
| 26 | 4D | E6 3374 | C.I. CEM 3372 |
| 27 | 5C | E6 3045 | C.I. TDA 1510 |
| 28 | 4F | E6 1684 | C.I. 4016 |
| 29 | 5L | E6 4073 | Regolatore di tensione 78L09 |
| 30 | 2H | E6 1138 | C.I. 74LS21 |
| 31 | SK1H | E7 1494 | Zoccolo 40 vie doppia molla |
| 32 | SK1C/SK1E/SK1F/SK1I | E7 1978 | Zoccolo 26 vie doppia molla |
| 33 | SK2C | E7 1934 | Zoccolo 20 vie doppia molla |
| 34 | SK1B | E7 1245 | Zoccolo 40 vie professionale |
| 35 | R1/R41/R42/R50/R54/R56/R23 R65/R67/R62/R64/R70/R71 | E3 1167 | Resistenza 100K 1/4W 5% carbone |
| 36 | R2/R53/R40 | E3 1165 | Resistenza 4K7 1/4W 5% carbone |
| 37 | R3 | E3 1408 | Resistenza 27K 1/4W 5% carbone |
| 38 | R4/R5 | E3 1024 | Resistenza 3K3 1/4W 5% carbone |
| 39 | R6/R7/R11/R12/R18/R72 | E3 1171 | Resistenza 10K 1/4W 5% carbone |
| 40 | R10/R49/R58 | E3 1163 | Resistenza 470 1/4W 5% carbone |
| 41 | R13 | E3 1200 | Resistenza 68K 1/4W 5% carbone |
| 42 | R14/R15/R26 | E3 1166 | Resistenza 220 1/4W 5% carbone |
| 43 | R16/R17/R19/R20/R21/R27/R65 | E3 1164 | Resistenza 2K2 1/4W 5% carbone |
| 44 | R22/R43 | E3 1034 | Resistenza 820K 1/4W 5% carbone |
| 45 | R24/R28/R29 | E3 1205 | Resistenza 15,1K 1/4W 1% carbone |
| 46 | R25/R44/R45/R68 | E3 4045 | Resistenza 5,1K 1/4W 1% carbone |
| 47 | R30 | E3 4043 | Resistenza 11K 1/4W 1% carbone |
| 48 | R31/R32 | E3 1422 | Resistenza 22,1K 1/4W 1% carbone |
| 49 | R33/R34 | E3 1193 | Resistenza 47K 1/4W 5% carbone |
| 50 | R35/R36/R39 | E3 1170 | Resistenza 1K 1/4W 5% carbone |
| 51 | R37/R38/R51/R55/R59/52 | E3 1194 | Resistenza 22K 1/4W 5% carbone |
| 52 | R48/R57 | E3 4046 | Resistenza 1M 1/4W 1% carbone |
| 53 | R46/R47/R60 | E3 4044 | Resistenza 100 1/4W 1% carbone |
| 54 | R60/R63 | E3 1306 | Resistenza 4,7 1/4W 5% carbone |
| 55 | R61 | E3 1392 | Resistenza 680 1/4W 5% carbone |

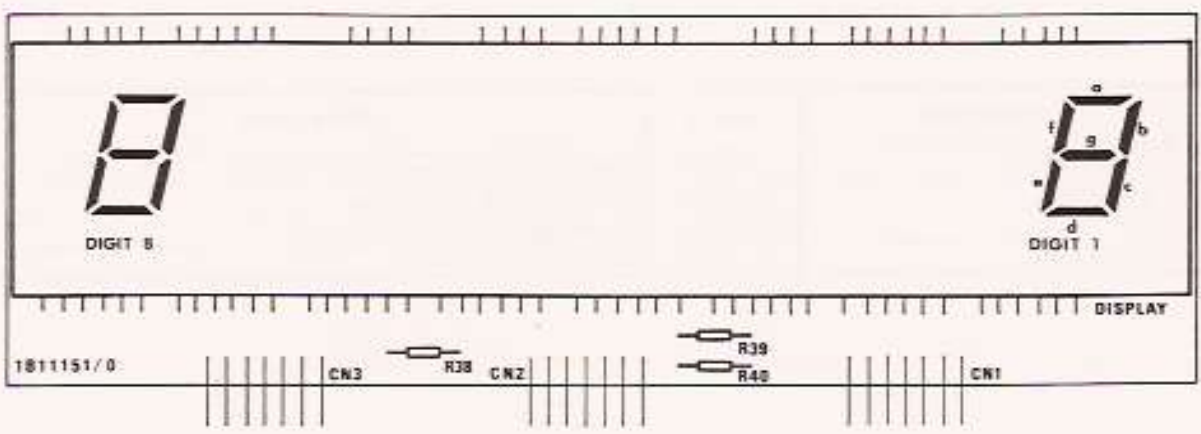
| N° | RIFERIMENTO | CODICE | DESCRIZIONE |
|----|--|---------|--|
| 56 | AR1/AR3/AR4 | E3 1938 | Sip array 10K 8 + 1 |
| 57 | AR2 | E3 4006 | Sip array 22K 8 + 1 |
| 58 | AR5 | E3 3031 | Sip array 4K7 8 + 1 |
| 59 | P1 | E3 1558 | Potenzimetro 47K lineare |
| 60 | P3/P4/P5 | E3 1598 | Potenzimetro 10K lineare |
| 61 | C1/C5/C6/C7/C8/C9/C11/C12/C13 C14/C15/C16/C17/C18/C19/C20 C21/C22/C23/C25/C28/C29/C31 C33/C36/C38/C39/C40/C41/C43 C56/C61/C67/C71/C65/C77/C80 C76/C52/C86/C83/C84 | E4 1005 | Condensatore 0,1uF ceramico 50V |
| 62 | C54/C79 | E4 1375 | Condensatore 4,7uF tantalio |
| 63 | C2/C3/C82 | E4 1722 | Condensatore 27pF ceramico |
| 64 | C10 | E4 1298 | Condensatore 22pF ceramico |
| 65 | C 30 | E4 3184 | Condensatore 68pF ceramico |
| 66 | C32/C57 | E4 1206 | Condensatore 1uF tantalio |
| 67 | C68/C70 | E4 4038 | Condensatore 1nF poliestere 1% |
| 68 | C35/C37/C42/C44/C59/C60 | E4 1569 | Condensatore 2,2nF ceramico |
| 69 | C24/C27/C74/C75/C85 | E4 1318 | Condensatore 100uF elettrolitico 25V vert. |
| 70 | C45/C78 | E4 1473 | Condensatore 330pF ceramico |
| 71 | C46/C47/C48 | E4 1837 | Condensatore 33nF poliestere |
| 72 | C49/C50/C51 | E4 1469 | Condensatore 4,7nF ceramico |
| 73 | C25 | E4 1580 | Condensatore 1,000uF elettrolitico 25V vert. |
| 74 | C53 | E4 1189 | Condensatore 2,2uF tantalio |
| 75 | C55/C58 | E4 1721 | Condensatore 47pF ceramico |
| 76 | C62/C68 | E4 1257 | Condensatore 100pF ceramico NPO |
| 77 | C63/C66/C69/C72 | E4 3095 | Condensatore 0,01uF ceramico NPO |
| 78 | C73/C4 | E4 1810 | Condensatore 47uF elettrolitico 25V vert. |
| 79 | C81 | E4 1541 | Condensatore 0,22uF tantalio |
| 80 | D1/D3/D4 | E5 1011 | Diode 1N 4148 |
| 81 | D2 | E5 1366 | Diode 1N5400 o 1N 5403 |
| 82 | Q1 | E5 1438 | Transistore BC 548 |
| 83 | Q5 | E5 1694 | Transistore 2N 3904 |
| 84 | Q3/C4 | E5 1814 | Transistore BC 327 |
| 85 | LD1 | E5 1542 | Led FLV 110 |
| 86 | QZ | E1 3068 | Quarzo oscillatore 3,579 MHZ |
| 87 | | E9 3100 | Dissipatore per TDA 1510 ML9/30 |
| 88 | | A2 5175 | Viti 3,5 x 9,5 T.C.B. tcr |
| 89 | | A2 4408 | Viti M3 x 5 T.C. |
| 90 | | A2 4161 | Rondella dentellata \varnothing 3,2mm |

-EC 0330- VISUALIZZATORE 8 CIFRE CON SCHEDA PILOTAGGIO

-EB 0256- SCHEDA DI PILOTAGGIO VISUALIZZATORE 8 CIFRE



-EB 0257- SCHEDA VISUALIZZATORE 8 CIFRE



| N° | RIFERIMENTO | CODICE | DESCRIZIONE |
|----|--------------------------------|---------|---------------------------------------|
| 1 | PC 1B 11 150/0 | E1 2264 | Scheda circuito stampato 1B 11 150/0 |
| 2 | IC1 | E6 1236 | C.I. 4724 |
| 3 | IC2 | E6 3337 | C.I. 6510 |
| 4 | IC3 | E6 1235 | C.I. 4511 |
| 5 | IC4 | E6 3336 | C.I. 2823 (2823 o MC3491) |
| 6 | R1 | E3 1417 | Resist. 3K9 1/4W 5% carbone |
| 7 | R2 | E3 1195 | Resist. 15K 1/4W 5% carbone |
| 8 | R3 | E3 1163 | Resist. 470 1/4W 5% carbone |
| 9 | R4/R14/R15/R16/R17/R18/R19/R21 | | |
| | R22/R42/R43/R44 | E3 1171 | Resist. 10K 1/4W 5% carbone |
| 10 | R5/R6/R7/R8/R9/R10/R11/R12/R30 | | |
| | R31/R32/R33/R34/R35/R36 | E3 1447 | Resist. 330K 1/4W 5% carbone |
| 11 | R13 | E3 3301 | Resist. 27K 1/2W 5% carbone |
| 12 | R20 | E3 1170 | Resist. 1K 1/4W 5% carbone |
| 13 | R23/R24/R25/R26/R27/R28/R29 | E3 1408 | Resist. 27K 1/4W 5% carbone |
| 14 | R37 | E3 1035 | Resist. 56K 1/4W 5% carbone |
| 15 | R41 | E3 1452 | Resist. 150K 1/4W 5% carbone |
| 16 | D1/D2/D3 | E5 1011 | Diode 1N 4148 |
| 17 | D4 | E5 1009 | Diode 1N 4004 |
| 18 | DZ1 | E5 1220 | Diode zener 75V |
| 19 | DZ2 | E5 1219 | Diode zener 33V |
| 20 | TR1/TR2 | E5 1438 | Transistore BC 237 o 2N 3909 o BC 548 |
| 21 | C1 | E4 1257 | Cond. ceram. 100pF |
| 22 | C2/C4 | E4 1004 | Cond. poliest. 0,1uF 250VL |
| 23 | C3/C7 | E4 1005 | Cond. ceram. 0,1uF 50VL |
| 24 | C5 | E4 1399 | Cond. poliest. 10nF 250VL |
| 25 | C6 | E4 1903 | Cond. elettr. 1uF 16VL |
| 26 | CN4 | E7 1351 | CNN 20 vie Flat cable maschio |
| 27 | CN1/CN2/CN3 | E7 1377 | CNN 7 vie CIS vert. 163680/5 |
| 28 | | A2 4467 | Occhielli 22 x 40 |
| 29 | | A6 5323 | Squadretta fissaggio visualizzatore |
| 30 | | A2 5299 | Vite M3 x 8 |
| 31 | | A2 4132 | Dado M3 |
| 32 | | A2 4161 | Rondella dentellata Ø3 |
| 33 | | | Ponticello passo 7,5 |
| 34 | R5 - R12 | | Sostituibili con SIP 8 + 1 330K |
| 35 | R30 - R36 | | Sostituibile con SIP 8 + 1 330K |
| 36 | R14 - R19 | | Sostituibile con SIP 6 + 1 10K |

| N° | RIFERIMENTO | CODICE | DESCRIZIONE |
|----|------------------|---------|---------------------------------------|
| 1 | P.C. 1B 11 151/0 | E1 2265 | Scheda circuito stampato 1B 11 151/0 |
| 2 | R38/39/40 | E3 1036 | Resist. 1M 1/4W 5% carbone |
| 3 | DSP | E5 3333 | Visualizzatore 8 cifre Philips monob. |
| 4 | CN1/CN2/CN3 | E7 1347 | Strip 7 vie CIS 163740/5 |