

MR. GAME

DAKAR

DAKAR

Seizing the adventure

INSTALLATION

Start the assembly in the following way:

- 1) Fix the legs to the body utilizing the provided bolts, which are located in the coins box.
- 2) Take away the band which holds the head and put it to a vertical position.

During this operation you have to control that no cable is pressed between the walls. Fix the head with the two bolts and their washers which are into the coins box.

CONTROLS

After the transportation there are some points to be checked out. The controls are made by sight in order to avoid future reparations. Small damages during transportation are inevitable. The connectors could get unthreaded, some contacts (especially the tilt contact) could get out of regulation. The tilt little pendulum should be regulated again after the assembly.

- 1) Check that the body's ground wire is connected to the head's ground wire.
 - 2) Check that each of the connectors are correctly fixed.
 - 3) Control that the wires do not hinder the movable parts.
 - 4) Check that the fuses are connected in the correct way.
 - 5) Check that the tranformer is connected to the right tension.
 - 6) Check and regulate the sensibility of the tilt as follows:
 - a) Pendulum tilt - regulate the length of the pendulum according to the desired sensibility.
 - b) Shockproof tilt - two kinds of shockproof tilts are foreseen: the first one is placed near the pendulum tilt, the other on the door near the coin boxes.
- Regulate the contacts distance according to the desired sensibility.

SETTING AT WORK

- 1) Set the balls into the lower hole, plug the machine in and set it on.
- 2) The monitor will be on, the HIGH SCORE and the explanation of the game will appear alternatively.
- 3) Check that the machine accepts the coins and increases the related credits. The machine must not take money when off.
- 4) If, when on, the machine shows that the RAM is not programmed, the instructions for programming the memory will appear on the monitor. In case the machine has been unutilized (off) for several weeks the case above mentioned is possible.
If the machine has been recently used and the HIGH SCORE along with the explanations of the game do not appear on the monitor, the battery or its re-charging circuit are possibly out of order. In any case, before using the machine it is advisable to proceed to re-programming.
- 5) Press the button CREDIT:
 - a) the HIGH SCORE and the game's explanations will turn off, while the confirmation of the first player will appear on the monitor.
 - b) credits will decrease by one.
 - c) the game table is ready and the ball will come out.
- 6) Any new pressure on the CREDIT button will bring a credit decrease and the indicator of the players' number will advance.
- 7) The credit maximum number is four (four players).

ORDINARY MAINTENANCE ON THE PLACE OF ASSEMBLY

The scope of this chapter is to provide a guide-line for maintenance, in order to keep the machine constantly functioning. The operations which follow should be done every time you intervene on the machine even if it is functioning.

- 1) Check out that the clamp screws of the electrical cards are not unloosened as well as the connectors of the plates.

- Check out and, if necessary, tight the screws of the rubber band holders.
- Check the rubber bands wear, and if necessary, substitute them. Remember to check the contacts every time a substitution takes place.
- Clean accurately the game table avoiding corrosive product.
- 2) Game table (lower part):
- check the pinball machine groups (tie rod, paste, joints and contacts).
- Check the bumpers (tie rods and pastes).
- Check the contacts.
- Check the harness, in order to eliminate wires stress and hindrance of the movable parts.
- 3) Check and adjust the tilt sensibility. Remember that a proper periodic maintenance increases the life of the machine and avoids damages.

NOTE

The machines are programmed according to the particular needs of the places where they have to be sent. However, it is possible to change the principle elements of the programmes according to the following instructions.

Remember that the following operations are to be executed only by specialized personnel, because wrong programming can cause working defects.

GENERAL TECHNICAL INFORMATION

In order to avoid the loss of the data in the RAM C-MOS, and to have the machine out of order, some lists of typical programming have been inserted into the base programme.

When the micro-computer is aware that the programme data into the RAM C-MOS are not valid any more, it indicates the re-programming of the memory on the monitor, following one of the typical programming structure (Tab. 1).

DIP SWS 2,3,4 are used in order to choose the list; they can be found on board C.P.U. (picture 1). With this operation we work on the programmes of the coin box and tongue visualized on the monitor. In the DAKAR model only the Italian language is foreseen. On the sound card three TRIMMERS have been foreseen: to regulate

the MAX volume of the right and left sounds, and of the words separately. For the final regulation of the sound and speech volumes, a potentiometer is foreseen, which can be found inside the body on the right side of the door.

In order to be able to operate on "Test" with the pinball machine set on "Game Over", an "Advance-Return" switch is placed on the door, it is provided with a central rest position.

Pressing "Advance" each time the Tests will advance one by one, from 0 to Max, and then again 0, 1, 2, etc...

Pressing "Return" the number of tests will get back one by one (contrary to "Advance").

The number of tests is indicated in the higher part of the monitor.

In order to get out from Test and going back to "Game Over" you will have to turn the machine off and on again, or else to press Advance or Return until you read High Score on the monitor along with the rules of the game.

To clear the accounting tests, or to modify the programming tests it is necessary that SW n.1, placed on card C.P.U. (pict. 1), is turned OFF (PROGRAM), then you can operate on the test to be modified by pressing the pen buttons, so as to advance or get back according to the desired program.

Once the operation of re-programming or clearing is over, in order to come back to GAME OVER and be able to play, it is necessary that HIGH SCORE and the game's explanations are on the monitor again, - this is done operating on "Advance" and "Return" - at the end you have to switch SW n. 1 ON again (Game). In the case that SW n. 1 has not been set back again and is still turned OFF (Program) a communication of irregularity will appear on the monitor from which the memory is not protected.

IMPORTANT

Every time the battery or the RAM 6564/6164 are replaced, or whenever you want to modify the program recorded on RAM (Coin box, balls programmes, etc.) some simple procedures have to be respected to have them accepted by the machine:

- 1) First of all turn SW n. 1 OFF,
- 2) Press for few seconds and at the same time the pen buttons of the pinball machine for the base programming,
- 3) For particular programming (other tests) utilize the Advance or Return buttons to go to the test that you want to change, then you can proceed to the programming operation utilizing the pen buttons according to your need.

- 4 . With the button "ADVANCE o RETURN" go back in to the GAME OVER position. On the monitor it will be visible that the memory is not protected, therefore put the switch n 1 in the ON (GAME) position. The high score and the game rules will appear. At this point the pinball is ready to play or it can be turned off.

IMPORTANT

In the event that the machine does not start and displays "THE THREE BALLS ARE MISSING" or, at time, the ball comes out late during the game, check if the three contacts that test the presence of the balls in the hole are working properly. In order to proceed with this check follow this procedure:

- 1) Enter the test mode of the contacts (do so by using the button next to the mechanisms in the coin box, at their right). At this point there will be some number displayed on the video screen, each one of these numbers will identify a close contact.
- 2) If the three balls are in the correct position in the hole on the video screen will appear the numbers 17-18-19 which will represent the contacts under the balls, see figure 2. In the event that one of the contacts does not results close proceed with the cleaning and adjusting of the blades.
- 3) With the balls in the hole try to shake the machine, the indications 17-18-19 on the video should remain steady, if not so adjust the blades of the contacts closer.
- 4) Manually take the balls out of the channel, the numbers on the video screen will disappear (we are still in the test mode of the contacts), if any of the numbers do not disappear, it means that the corresponding contact does not open, therefore it needs to be adjusted by opening the space between blades gently by doing so you will achieve the corrected functions.
- 5) If after an accurate adjustment those defects persist, please contact the closest service department.

TEST

Let us now analyze in detail the technical proofs, beginning with the self test, the accounting and the various programmes.

SELF TEST

MONITOR (Test n. 1)

You can check it by sight. The letters and numbers that will constitute the message and the scores during the test and the games, will appear on the monitor in succession.

This test verifies also if the image is centered on the monitor. You will see four "little crosses" which limits the space that the image can occupy. Operating the TRIMMERS on the monitor-piloting-card (please see the monitor manual) you will widen or shrink the space until your image is completely in the center.

CONTACTS (Test n. 2)

The matrix of 8 columns and of 8 lines, which all together represent the contacts matrix, will appear on the monitor. The state of all contacts will be visualized.

When starting this test, the closed contacts will appear on the monitor (if three balls are present into the Reject canal then n. 17-18-19, numbers which indicate that the three micros are closed, have to be visualized); while, in order to check the other contacts, you will have to manually operate by checking the numbers that will appear on the monitor with picture n. 2 (contacts table). The pinball machine pen contacts will appear on the right and left low parts of the monitor.

LIGHTS (Test n. 3)

Every "controlled" lights, which have been divided into two groups, will turn on or off alternatively and at regular intervals. Check that each light is properly functioning.

SOLENOIDS AND POWER LIGHTS (Test n. 4)

Every solenoids (coils) and power lights are excited from 1 to 24. The number of the solenoid or light will appear at the moment on the monitor.

Please note that each type of pinball machine can utilize only some numbers of the solenoids or power lights. During the test all the solenoids and power lights are treated in the same way, - be them utilized or not. The number of all the solenoids and power lights will appear on the monitor. The ones which are not functioning or that are lacking won't provoke any effect. The number of solenoids and power lights which are utilized is indicated in picture n. 4.

SOUNDS AND SPEECH (Test n. 5)

While checking the machine sounds and phrases, their number will appear on the monitor.

ACCOUNTING

TIMES (Test n. 6)

This test relates to the time (minutes) in which the pinball machine has been on (1° player line), the real time (minutes) of utilization (2° player line), the total number of tilts (3° player line), and the average duration of the games (4° player line).

The average duration time of the games is expressed in minutes, and it is determined by the ratio between the game-time and the numbers of games played.

Every accounting is cleared at the re-programming of the machine (Test n. 23).

COIN BOXES (Test n.7)

The number of coins inserted into the first box (on the left) is indicated on the monitor on the line of the first player. The number of coins inserted into the second box (on the right) is indicated on the monitor on the line of the second player. The number of coins inserted into the third box is indicated on the line of the third player (in the middle).

The number of "Service" games is indicated on the line of the fourth player. These games are obtained pressing the button SERVICE placed inside the door on the left side. The "Service" button operates in the same way as well as a coin box: at each impulse corresponds a credit.

Every accounting is cleared at the re-programming of the machine (Test n. 23).

WINNINGS (Tests n. 8-9)

On the line of the first player the total number of games (GAME OVER) is shown on the monitor (test n. 8). The number of games which have been won appears on the line of the second player, while the number of balls which have been won can be read on the line of the third player.

The winnings with the SPECIAL N. 1 are visualized on the line of the first player (test n. 9).

The winnings with the SPECIAL N. 2 are visualized on the line of the second player.
Every accounting is cleared at the re-programming of the machine (Test n. 23).

COINS (Tests n. 10,11,12,13,14,15)

In order to overcome the difficulties determined by the different kind and value of coins in the different countries, a sophisticated method for the programming of one credit (GAME) has been adopted.

The main characteristics of this method are:

- a) possibility to give one credit by paying with various coins
- b) equal number of deductions for the same value of coins inserted, apart from their kind and number
- c) possibility that the cost of one credit be different from the value of the coins.

In the tests n. 10,12, and 14, you will program the number of coins to be inserted into box n. 1 (from the left test 10), n. 2 (from the right test 12), n. 3 (middle test n. 14).

You have the possibility to program a number of coins from 1 to 9, apart from their total value.

In the test 11, 13, and 15, you will program the number of credits corresponding to the number of coins in box n. 1 (test 11), n. 2 (test 13), n. 3 (test 15).

Example:

BOX	N. 1	(Test 10)	N. 1	COIN
		(Test 11)	N. 1	CREDIT
BOX	N. 2	(Test 12)	N. 2	COIN
		(Test 13)	N. 2	CREDIT
BOX	N. 3	(Test 14)	N. 3	COIN
		(Test 15)	N. 3	CREDIT

In the example above you can see that each coin box can be programmed on the basis of the value assigned to one credit, and the deductions you intend to use.

Example:

BOX	1	=	1	COIN	Lit. 500	=	1	CREDIT
"	2	=	2	COINS	"	=	2	CREDITS
"	3	=	3	COINS	"	=	3	CREDITS

GAME BALLS (Test n. 16)

With this test you can program the number of balls per player during one game; you can program from 1 to 7 balls. In order to program the number of balls which is visualized on the monitor you have to press the pinball machine pen buttons.

MATCH SELECTION (Test n. 17)

By using the pinball pens you can program the machine including or excluding the MATCH optional.

HIGH SCORE CLEARING (Test n. 18)

Pushing at the same time the pinball pen buttons you will clear the four High Score which had been previously memorized.

WINNINGS PROGRAMME (Test n. 19)

Inside the programmes of the machine a particular winning condition has been considered.

When, during the same game, one player succeeds in realizing the sequences for the MULTIBALL and SUPER MULTIBALL he will be prized with a winning which can be programmed. In order to program this win you have to operate the pinball pen buttons.

SCORE (Test n. 20, 21, 22)

Operating the pinball pen buttons you can program the scores at which the player realizes the balls and credits winnings during one game.

Example:

TEST 20	2,000,000 SCORES	first winning first ball
TEST 21	3,000,000 SCORES	second winning second ball
TEST 22	4,000,000 SCORES	third winning first credit

RE-PROGRAMMING OF THE PINBALL MACHINE (Test n. 23)

By pressing the pen buttons at the same time for few seconds, all the programmes in the memory will be cleared; the machine is now programmed with the data base, and if you want to set some particular modifications you will have to go back to the Test on which you wish to operate.

These operations have to be done with SW N. 1 when the machine is OFF (PROGRAM).

Once the machine has been re-programmed, the SW N.1 has to be turned ON again, you will wait few seconds until the HIGH SCORE and the game information appear on the monitor.

In case you do not turn the SW N.1 ON (GAME) again, you will read on the monitor that the memory is not protected along with the instructions to avoid any damage.

NOTE

When you clear the machine any coin box programming, other than the basic one, will be lost and you'll have to re-program it again.

GAME OVER SOUND (Test after 23)

Take the RAM protection away by turning SW 1 OFF; using the pen buttons choose:

0 not to have the attraction sounds

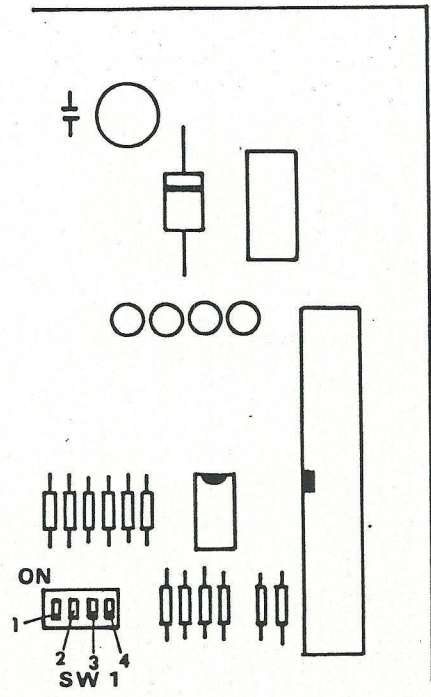
1 to have the attraction sound

Once the selection has been done replace the RAM protection and switch the SW 1 ON again.

NOTE

Once any kind of operation is concluded you have to replace the machine on GAME OVER, turning SW 1 on again. Only in this case the pinball memory is protected.

FIG.1



C.P.U board

TAV. I

Programmi base - Basic programs - Programmes de base - Grundprogramme

N° test	ITALIA 1			ITALIA			GREAT BRITAIN			FRANCE			DEUTSCH.			BELGIQUE			JUGOSLA.			U.S. A.		
	SW			SW			SW			SW			SW			SW			SW			SW		
	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4
	on	on	on	off	on	on	on	off	on	off	off	on	on	on	off	on	off	on	off	off	off	off	off	off
	—			—			—			—			—			—			—			—		
10	01			02			01			01			01			01			01			01		
11	00			01			00			00			01			00			01			01		
12	02			05			02			05			02			04			02			01		
13	01			03			01			03			03			02			02			01		
14	02			05			5			10			05			04			02			01		
15	01			03			3			07			07			02			02			01		

SELF TEST

N. TEST	FUNCTION	DESCRIPTION
01	Monitor Test	Numbers, letters, image centering will appear (4 cross) trimmers on the monitor card
02	Contacts	The matrix of 8 columns and 8 lines will appear on the monitor, all together they represent the matrix of the contacts. Every closed contact is visualized on the monitor with their relative number, the pen contacts are shown on the lower part of the monitor on the right and on the left.
03	Lights Test	Every controlled lights will turn on and off continuously.
04	Solenoids and Power Lights	Every solenoid and power light will be excited in sequence. The number on the monitor indicates the solenoid or light which is excited in that very moment.
05	Sounds and Speech	The vocabulary of sounds and speech will be heard in sequence. The number indicates the sound or phrase spoken.

ACCOUNTING

N. TEST	FUNCTION	DESCRIPTION	CLEARING
06	Times	1° player line: time (minutes) of machine ON 2° player line: real game time (minutes) 3° player line: tilts number 4° player line: average game time (minutes)	All of these accounting will be cleared at the general re-programming of the machine (Test n. 23)
07	Coin boxes	1° player line: coin into box 1 (on the left) 2° player line: coin into box 2 (on the right) 3° player line: coin into box 3 (in the middle) 4° player line: number of games programmed with SERVICE button	All of these accounting will be cleared at the general re-programming of the machine (Test n. 23)

ACCOUNTING

N. TEST	FUNCTION	DESCRIPTION	CLEARING
08	Winnings	1 line: total number of games 2 line: games won 3 line: balls won	All of these accounting will be cleared at the general re-programming of the machine (Test n. 23)
09	Winnings	1 line: total winnings with SPECIAL 1 2 line: total winnings with SPECIAL 2	All of these accounting will be cleared at the general re-programming of the machine (Test n. 23)

PROGRAMMING

Test n. 10

Function: Number of coins to be inserted into the first coin box (left).

Programable values: 1 - 9

Description: Number of coins to be inserted into the first coin box (left)

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 11: Number of credits corresponding to the number of coins in the first coin box (left)

Programable values: 1 - 9

Description: Number of credits corresponding to the number of coins in the first coin box (left)

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 12: Number of coins to be inserted into the second coin box (right)

Programable values: 1 - 9

Description: Number of coins to be inserted into the second coin box (right)

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 13: Number of credits corresponding to the number of coins in the second coin box (right)

Programable values: 1 - 9

Description: Number of credits corresponding to the number of coins in the second coin box (right)

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 14: Number of coins to be inserted into the third coin box (in the middle)

Programable values: 1 - 9

Description: Number of coins to be inserted into the third coin box (in the middle)

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 15: Number of credits corresponding to the number of coins in the third coin box (in the middle)

Programable values: 1 - 9

Description: Number of credits corresponding to the number of coins in the third coin box (in the middle)

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 16: BallsProgramable values: 1 - 7; basic program 3Description: The number of balls to be played in one game is programmedProgramming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.Test n. 17: MatchProgramable values: 0 - 1; basic program 1Description: Excluded match (no wins); included match (1 replay)Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.Test n. 18: High score clearingProgramable values: --Description: The existing High scores are clearedProgramming instructions: With SW 1 turned OFF (PROGRAM) press at the same time the pinball pen buttons for few seconds.

Test n. 19: Winnings program - Multi ball and Super Multi ball

Programable values: 0 - 3; basic program 1

Description: 2,000,000 scores - 1 ball; 2 balls; 1 credit

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming.

Test n. 20: 1^o winning score programming

Programable values: 1 - 99,990,000; basic program 2,000,000

Description: first ball

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming. In order to disconnect this function, program 9999.

Test n. 21: 2^o winning score programming

Programable values: 1 - 99,990,000; basic programming 5,000,000

Description: second ball

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming. In order to disconnect this function, program 9999.

Test n. 22: 3° winning score programming

Programable values: 1 - 99,990,000; basic program 10,000,000

Description: 1 credit

Programming instructions: With SW 1 turned OFF (PROGRAM) utilize the pinball pen buttons to advance or go back on the numbers of the desired programming. In order to disconnect this function, program 9999.

Test n. 23: Basic re-programming of the machine

Programable values: --

Description: Basic re-programming of the machine

Programming instructions: With SW 1 turned OFF (PROGRAM) press at the same time the pinball pen buttons for few seconds.

GUIDE-LINE FOR DAMAGE SPOTTING

Condition: The pinball machine does not turn on

Reason and remedy:

- There is no power
- It is unplugged (plug it in)
- The three-way connector (CN line) is unplugged (plug it in)
- A fuse has blew out (change it) - if it blows out again there is a short circuit
- The nine-way connector (CN J4) is unplugged (plug it in)
- The switch is off (turn it on)
- The connector CN 1 and the connectors CN J1; J2; J3 are unplugged (plug them in)
- The transformers are unplugged or wrongly set (adjust them) - remember that in the transformer there is a fuse

Condition: All of the lights do not turn on

Reason and remedy:

- The fuse F2 has blew out (change it) - the tension must not exceed 20 A, if it blows out again there is a short circuit
- The CN J1; J2; J3 are unplugged (plug them in)
- The wires are disconnected (connect them)

Condition: All of the "controlled" lights do not work

Reason and remedy:

- The 5 VRM is lacking (the fuse F3 - 15 A- on the power board has blew out) - check it with the tester
- The connector between C.P.U. and the interface CN 12 and CN 15 is disconnected (connect it)
- The connector of the interface CN 16 is disconnected (connect it)
- The connectors of the lights on the interface CN 18, 19, 20, 21, 22 are disconnected (connect them)
- The 5,6V DC of the C.P.U. and interface is lacking (the fuse F2 - 5A - has blew out, change it. If it blows out again there is a short circuit)
- The C.P.U. is always clear (change feedercard)
- Other (change the feeder and then the C.P.U.. Change the interface)

Condition: The monitor does not turn on

Reason and remedy:

- The + 12Vcc is lacking because the fuse F1 (2A) has blew out; or the tension regulator is out of order (change the fuse. Check with the tester that the 12Vdc feeder, is working) - if it blows out again there is a short circuit
- The + 5,6V of the C.P.U. is lacking (check it and change the fuse F2 - 5A - on the feeder card)
- The video connector CN 14/A, or the monitor connector are disconnected (connect them)
- Monitor out of order
- C.P.U. out of order

Condition: The numbers on the monitor are not correct

Reason and remedy:

- There is a broken wire (change the wire)
- The C.P.U. is out of order (change the C.P.U.)
- The letters generator card is out of order (change it)

Condition: All of the solenoids do not work

Reason and remedy:

- The feeder 39 VRM is lacking (replace the fuse, if it blows out again there is a short circuit. Change the feeder card)
- The CN 17 connector is disconnected (connect it)
- The interface is out of order (change the interface)
- The C.P.U. is out of order (change the C.P.U.)

Condition: One or more of the solenoids do not work

Reason and remedy:

- The coil has blew out (change the coil and relative darlington)
- The darlington have blew out (change the darlington and check the coil's diode)
- The wire are disconnected (connect them)
- The fuses under the game board have blew out (change them)

Condition: One or more of the solenoids are always excited

Reason and remedy:

- The interface card is out of order (change it)
- The C.P.U. is out of order (change it)
- There is a short circuit (eliminate it)

Condition: All of the contacts do not work

Reason and remedy:

- The CN 10 and 11 connectors are disconnected (connect them)
- The diodes are unplugged or disconnected (adjust the diode)
- The contact is oxidized (clean the contact)

Condition: One or more of the contacts are read in a wrong way

Reason and remedy:

- The wires of the contacts are short circuited among them or with the light and solenoid wires (eliminate the short circuit)
- The diodes of the contacts are short circuited (change the diodes)
- The C.P.U. is out of order (change the C.P.U.)

Condition: The sounds and speech do not work

Reason and remedy:

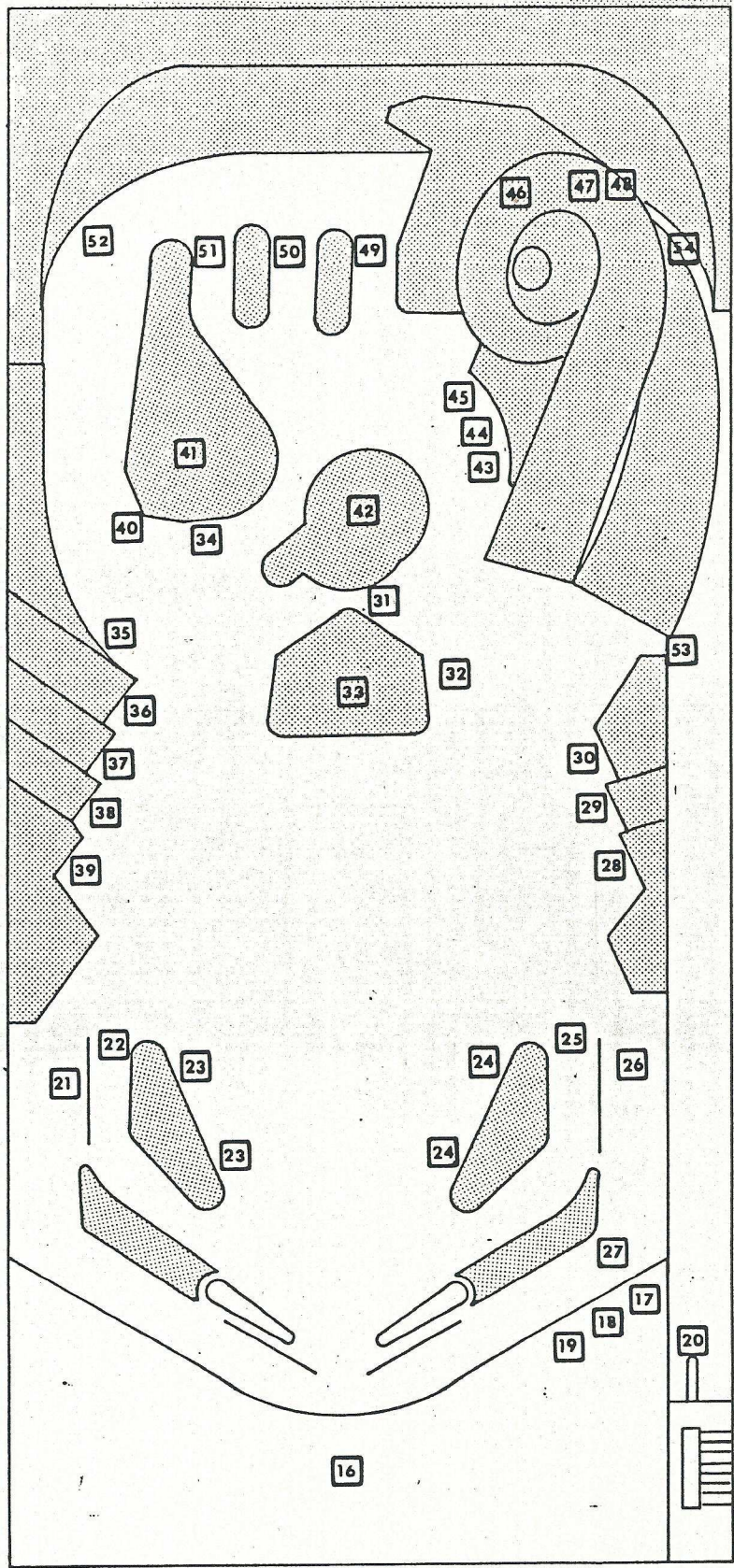
- The speaker is unplugged or out of order (plug it in or change it)
- The volume potentiometer is out of order (change it with another one of similar kind)
- The CN 6 (sounds card) connector is unplugged (connect it)
- The power (- 5V DC) is lacking (change the fuse F4 - 1A - if it has blew out)
- The power (+12V DC) is lacking (change the fuse F2 - 5A - if it has blew out)
- The power (+ 5V DC) is lacking (If the + 5V DC is lacking and the + 12V DC is present change the regulator 78H05)

- The sound and speech card is out of order (change it)

IMPORTANT

Do not connect or disconnect the contacts while the pinball machine is on.

CONTACTS fig.2



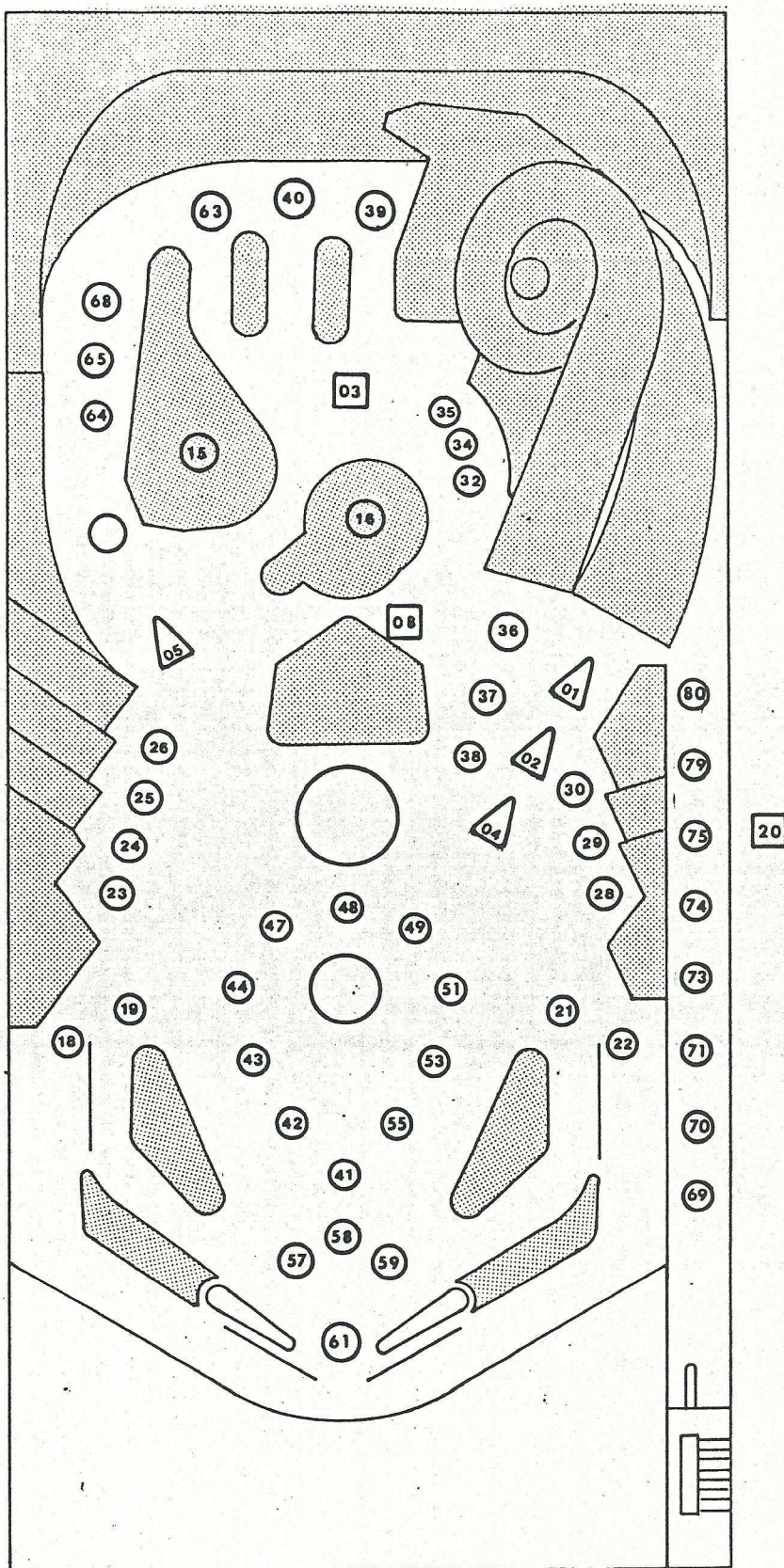
00 01 02 03 04 05 06 09 10 12

CONTACTS

00 Test advancing
01 Test going back
02 Tilt 2
03 Service credits
04 Coin switch 1
05 Coin switch 2
06 Coin switch 3
07
08
09 Credits
10 Tilt
11
12 Factory burn test
13
14
15
16 Lower hole
17 First low binary contact
18 Second low binary contact
19 Third low binary contact
20 Lower eject canal
21 External left canal
22 Internal left canal
23 Left flap
24 Right flap
25 Internal right canal
26 External right canal
27 Reject shell canal
28 First right target
29 Second right target

30 Third right target
31 Central target
32 Shell opening
33 Shell canal
34 High left target
35 High left reject
36 Fourth left target
37 Third left target
38 Second left target
39 First left target
40 Turning target
41 Left pop
42 Right pop
43 First high target
44 Second high target
45 Third high target
46 Shell contact
47 High reject
48 Capture ball reject
49 Right high canal
50 Central high canal
51 Left high canal
52 Turning target canal
53 Douane target
54 Capture ball second ball

LIGHTS fig.3



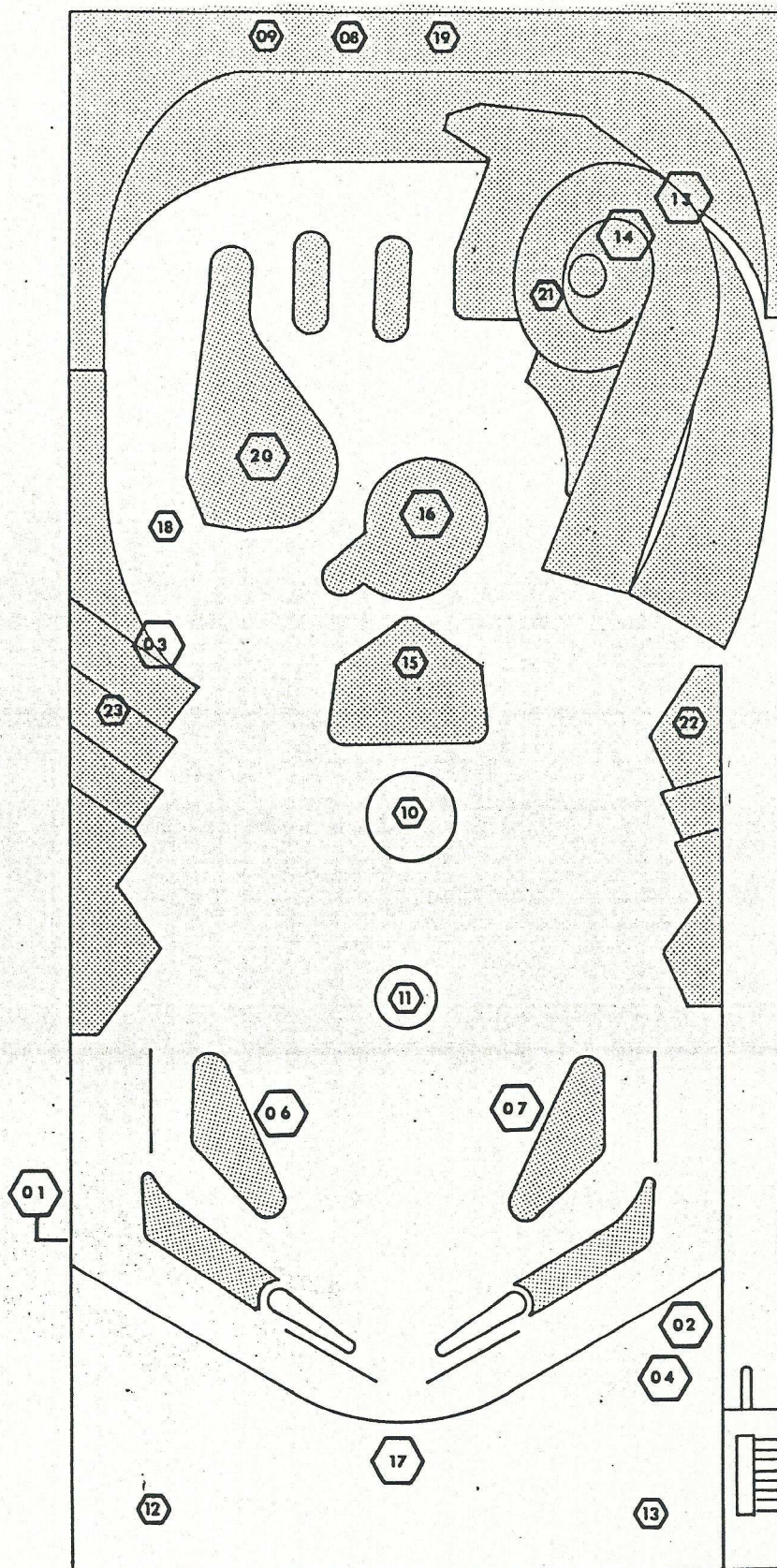
LIGHTS

01 First right arrow
02 Second left arrow
03 Fixed lights relay
04 Third right arrow
05 Left arrow
06
07
08 Shell's door relay
09
10
11
12
13
14
15 Left pop
16 Right pop
17
18 External left canal
19 Internal left canal
20 Pinball machine relay
21 Internal right canal
22 External right canal
23 First left target
24 Second left target
25 Third left target
26 Fourth left target
27
28 First right target
29 Second right target
30 Third right target

31
32 First high target
33
34 Second high target
35 Third high target
36 First "light special"
37 Second "light special"
38 Third "light special"
39 Right high canal
40 Central high canal
41 Bonus 10
42 Bonus 1
43 Bonus 2
44 Bonus 3
45
46
47 Bonus 4
48 Bonus 5
49 Bonus 6
50
51 Bonus 7
52
53 Bonus 8
54
55 Bonus 9
56
57 Multiplayer for 2
58 Multiplayer for 4
59 Multiplayer for 6
60

61 Extra ball
62
63 Left high canal
64 Turning target first light
65 Turning target second light
66
67
68 Turning target adv. multi player
69 Eject effect first light
70 Eject effect second light
71 Eject effect third light
72
73 Eject effect fourth light
74 Eject effect fifth light
75 Eject effect sixth light
76
77
78
79 Eject effect seventh light
80 Eject effect eighth light

SOLENOID AND LIGHTS fig.4

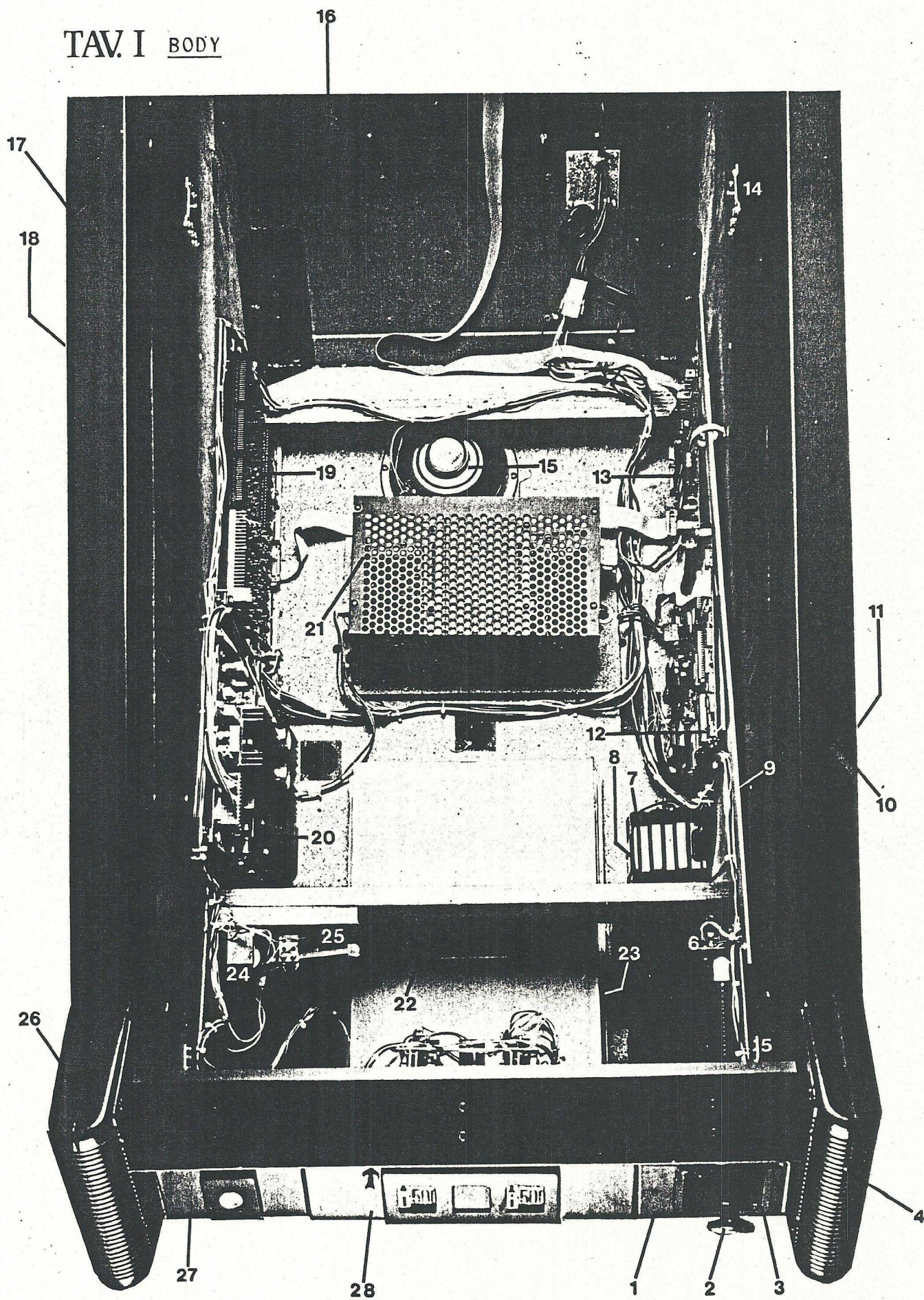


SOLENOIDS AND LIGHTS

01 Knocker
02 Reject shell canal
03 High left reject canal
04 Low reject
05
06 Left flap
07 Right flap
08 1° effect high canals
09 2° effect high canals
10 Super multiball
11 Multiball
12 Low carter effect
13 Capture ball reject canal
14 High reject
15 Shell effect
16 Right pop
17 Low hole
18 Turning target effect
19 3° high canal effect
20 Left pop
21 Shell effect
22 Right target effect
23 Left target effect
24

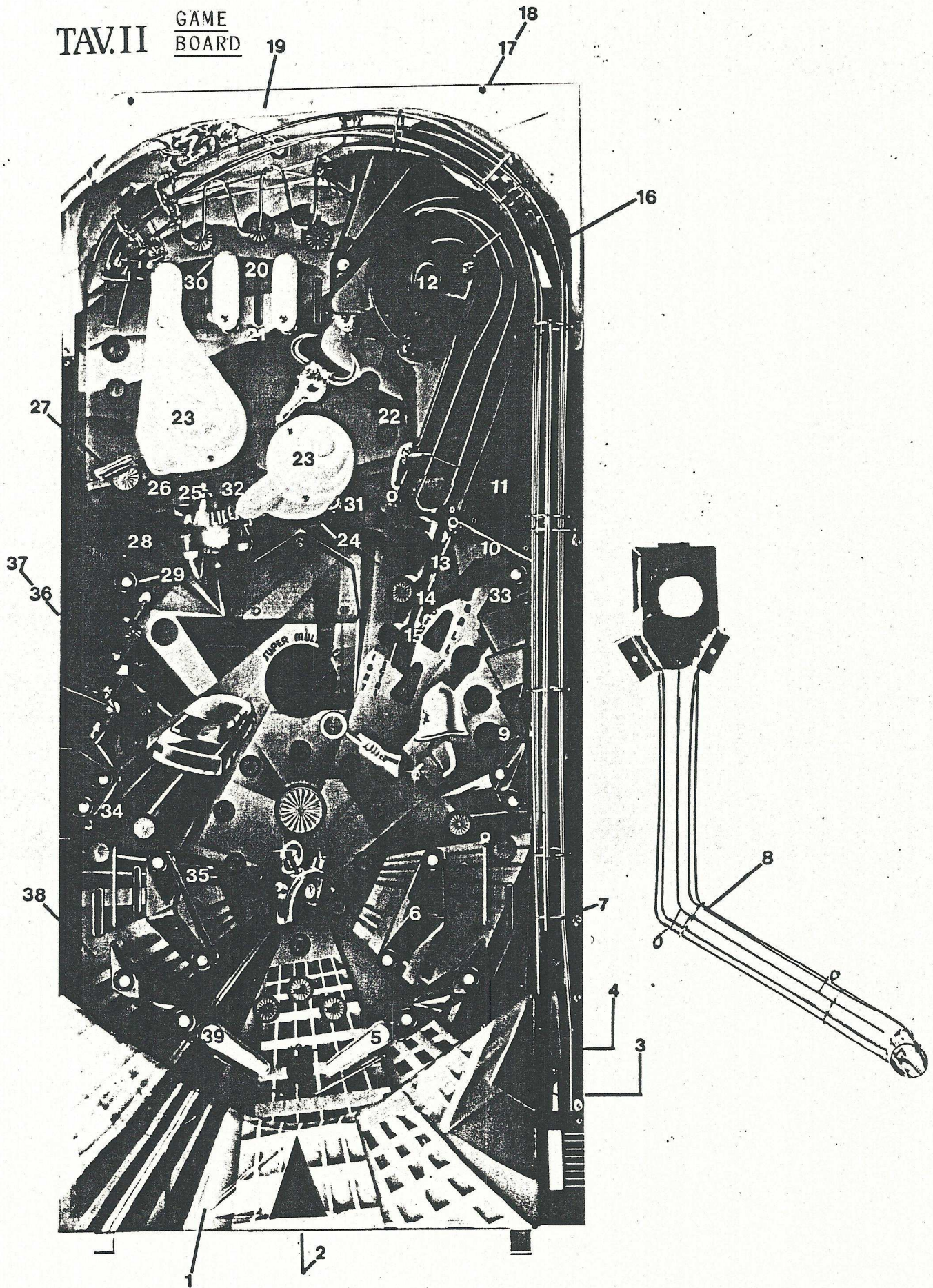
MECHANICS

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TAV. I BODY

BODY

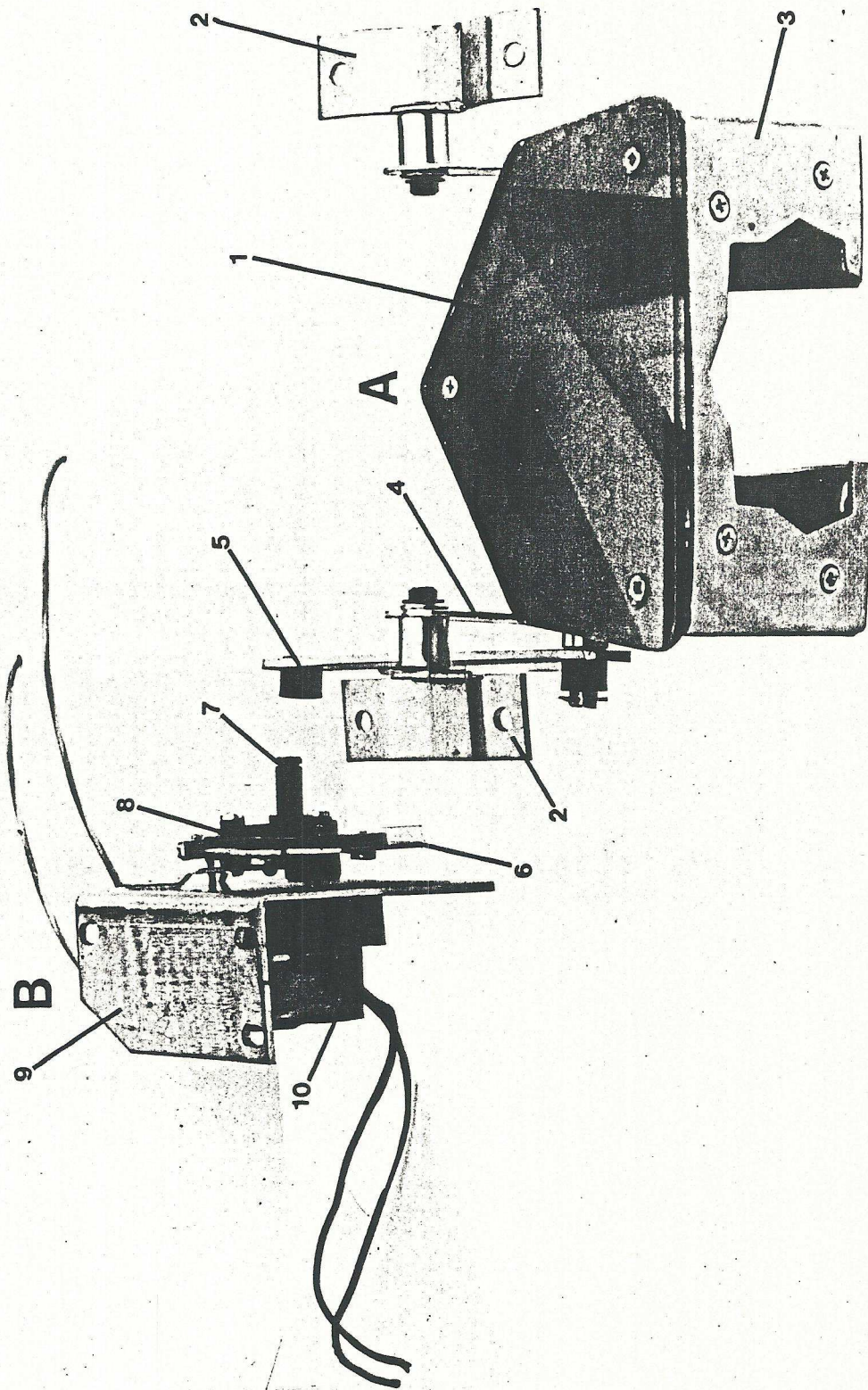
POS.	DESCRIPTION	CODE	NOTES
1	Right shoulder	B2 0050	
2	Ball eject device mod 01	C2 0050	
3	Ball eject device protection	A4 8010	
4	Right ball grip	SC 0127	
5	Ball grip lamellar package	EMD 038	
6	Double volume potentiom. 10 Kohm	E3 4058	
7	Manual switch protection	VB 5104	
8	Power switch plaque	EMF 008	
9	Board support	A6 1338	
10	Right side carter	A6 1344	
11	Body right side		yellow VS 4128 ivory VS 4132 violet VS 4130
12	Sound card	EB 1254	
13	C.P.U. card without memory	EB 1250	
14	Board rotation support	B2 0184	
15	7 W CIARE loudspeaker	E2 2018	
16	Body 01	VD 4032	
17	Left sidecarter	A6 1345	
18	Body left side		yellow VS 4129 ivory VS 4133 violet VS 4131
19	Driver card	EC 0181	inter-change with Driver card EB 1245
20	Feeder 01 card	EB 1274	
21	Feeder 01 frame	EMC 077	
22	Coin box 01 cover	B2 0194	
23	Coin box 01	C2 0054	
24	TIC TAC flask	SD 0029	
25	TILT tablette 01	SE 0025	
26	Left ball grip	SC 0128	
27	Left shoulder	SD 0152	
28	Coin box 01 door	SF 0101	
29	Handrest 01	C2 0049	

TAV. II
GAME
BOARD

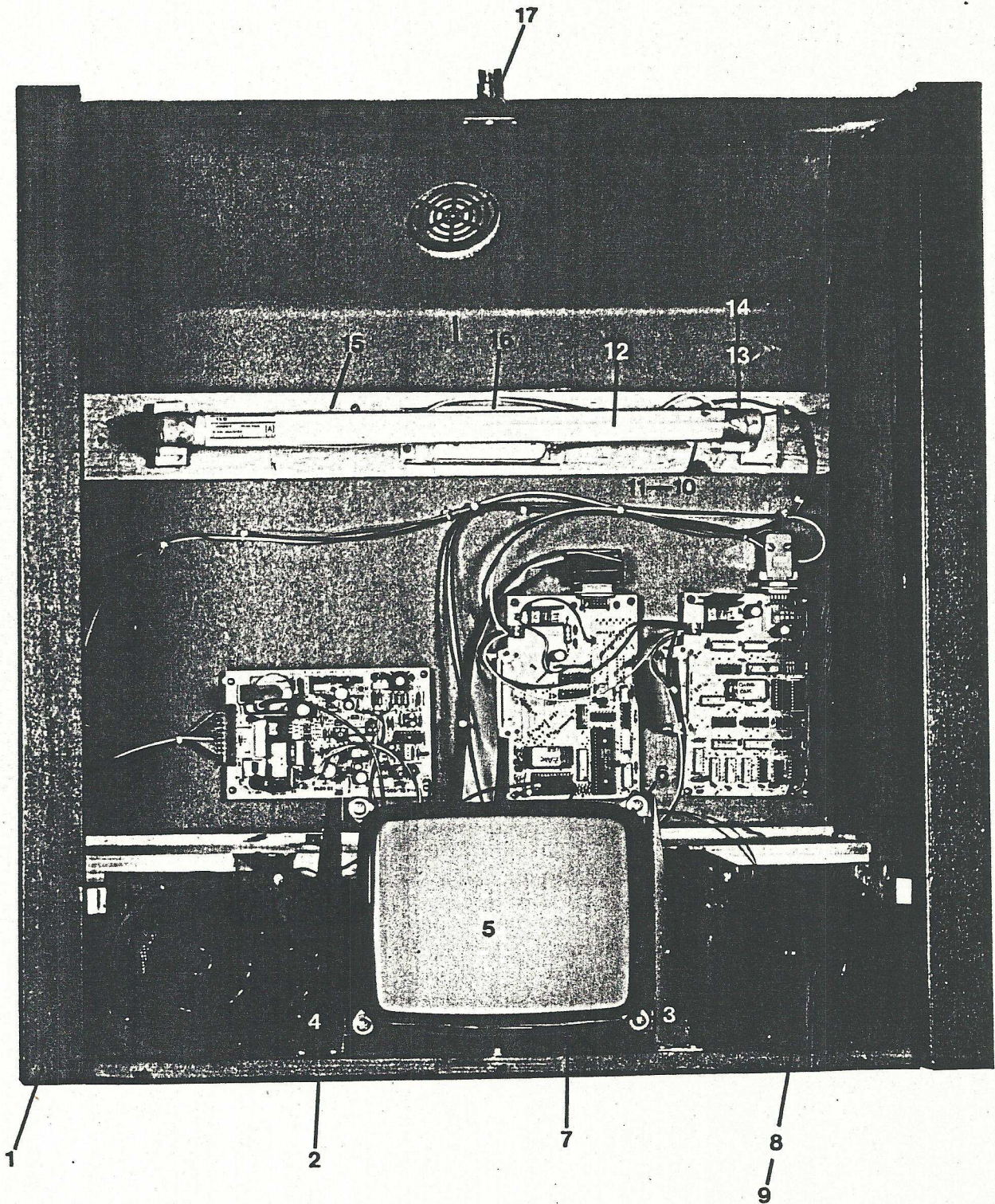
GAME BOARD

POS.	DESCRIPTION	CODE	NOTES
1	Thermoformed carter 01	VT 5087	
2	Ball elevator	SD 0062	
3	Reject 01	SD 0162	
4	Flask reject	SD 0164	
5	Right pen group	SD 0155	
6	Flap	K2 0031	
7	Eject lane 01	D2 0006	
8	Shell canal eject lane	D2 0008	
9	Yellow center 40 x 27 mod. 01	SD 0160	
10	Target strap	SD 0166	
11	Thermoformed right canal	VT 5085	
12	Shell ascent	SD 0165	
13	High minipost	A4 1112	
14	Minipost conic component	A4 4133	
15	Rubber 0 10 h. 20 mm.	VA 5281	
16	Kichers capture ball reject	SD 0163	
17	Light - 12V 10W	EB 4032	
18	12V h21 feet light holder	EB 4020	
19	Thermoformed high canal	VT 5095	
20	Large passages	VA 5115	
21	Large passages plastic base	VA 5114	
22	Red round center	SD 0156	
23	Pop	K2 0078	
24	Silk-screen printed center 40 x 27 mod. 01	SD 0159	
25	Silk-screen printed transportation center mod. 01	SD 0158	
26	Metalized throttle holder column	SC 5025	
27	Turning target mod. 01		
28	Right flap reject bumper	SF 0087	
29	Metalized column 27 mm.	VC 5024	
30	Rubber n. 0	VA 5010	
31	Rubber n. 0/bis	VA 5011	
32	Rubber n. 1	VA 5012	
33	Rubber n. 2	VA 5013	
34	Rubber n. 4	VA 5015	
35	Rubber n. 6	VA 5017	
36	Light 6,3 V	EB 4006	
37	Light holder		low EB 4013 medium EB 4014 high EB 4015 flat EB 4018
38	Silk-screen printed game board	VS 4125	
39	Left pen group	SD 0154	

TAV. III SHELL-RATIONMOTOR GROUP



POS.	DESCRIPTION	CODE	NOTES
A	SHELL	SF 0104	
1	Silk-screen printed shell cover in lexan	VS 5229	
2	Fulcrum plate with pin for shell rotation	B2 0174	
3	Frontal shell strap	SD 0167	
4	Shell frame with pin	C2 0048	
5	Connecting rod to the shell cup	B2 0175	
B	RATIOMOTOR GROUP	SF 0103	
6	Shell ratiomotor cam	A6 1355	
7	Shell rod command	B2 0205	
8	Microsw. needle 200 gr.	E9 4010	
9	Shell ratiomotor support	B2 0176	
10	Ratiomotor U.D.S. 10 + D SR 48/50 VC	EMD 037	

TAV. IV HEAD

HEAD

POS.	DESCRIPTION	CODE	NOTES
1	Pinball head 01	VS 4126	
2	Curved panel support	B2 0192	
3	Picture tube 9" B/N video right support	A6 1418	
4	Picture tube 9" B/W video left support	A6 1419	
5	Single-colored monitor 9"	EC 1085	
6	Fairlead rubber 01 5 0e 13	VA 5280	
7	Picture tube 9" protection	VB 7229	
8	Loudspeaker net protection 0 118	A6 1415	
9	Tweeter loudspeaker	E2 4011	
10	Starter ST 111	EB 2040	
11	Starter and light holders 197 L	EB 2051	
12	White neon 15W 220V RM 15	EB 2049	
13	Simple light holder mod. 197 S	EB 2052	
14	Simple rise 73 R	EB 2053	
15	Neon board mod. 01	VB 4201	
16	Reactor 15 W 220 V RM 15	EB 2050	
17	Button lock 355 C	B2 7269	

TAV. V DAKAR PINBALL MACHINE PLEXIGLASS



DAKAR PINBALL MACHINE PLEXIGLASS

POS.	DESCRIPTION	CODE	NOTES
1	Plexiglass curved board for the head	VB 5219	
2	Silk-screen printed and lithographed plate 01	VS 5241	
3	Curved panel angular reinforcement	B2 0188	
4	Curved panel square closing	A6 1363	