



BOXER

Punch-Force measuring machine

Technical Information



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1. Introduction

Main purpose of this Technical Information is to:

- familiarize user with machine construction,
- provide proper setup parameters, installation and power line hookup,
- familiarize user with proper and safe usage procedures, exploitation and conservation.

**WARNING! USER MUST FOLLOW
ALL GUIDELINES INCLUDED IN THIS
DOCUMENT FOR SAFE AND LONG
LASTING MACHINE USAGE.**

2. Usage/Purpose

Boxer is a punch-force measuring machine which allows prize winning for results. Special winning system allows for up to 6 prizes.

Each model has three settings to compute punch force, punch speed and reflex.

Boxer Prize can be used for tournaments for up to 6 players.

Boxers can be placed in night clubs, gyms, bars etc., generating tons of positive fun and allowing players to check/measure their boxing skills (punch force, punch speed, reflex). Complete and detailed usage

instructions are under paragraph 7 of this document and on the sticker placed on each machine.

3. Technical Data

Model	PRIZE
Depth [in]	51
Width [in]	28
Height [in]	90
Overall Mass [Lb]	342
Power consumption [Wh]	200

4. Assembly/ Construction description

Punch-force measuring machine Boxer is built out of three main components:

- base,
- middle assembly,
- top assembly.

The key component is a mother board (electronic board) placed inside Boxer's body (block schematics drawing# 1) to which mechanical elements and user interface components are connected.

Electric/ electronic part contains following:

- power supply (drawing# 4) – consists of transformer, fuses and broadcasters that control alarm sirens & electromagnet
 - transforms voltage from 110 V to 12 V (connected to main board J6),
- measuring mechanism – consists of sending and receiving diodes that measure blade fly speed through assembly,
- verbal information mechanism – built using potentiometer and speaker, used to send voice messages,
- punching bag lowering mechanism – consists of button START with backlight and electromagnets – actual lowering mechanism,
- visual information assembly – assembled out of diodes used for visual representation of punch force measurement, warning siren (informs player of breaking top record) also displays on electronic panel (shows measurement result, credit amount, top day record),
- coin acceptor – used to deposit coins (can be reprogrammed to tokens or other currencies),
- bill acceptor – used to deposit bills,
- mother board.

5. Transport

Machine should be transported in vertical position. Machines are shipped on a wooden 41" x 53" palette, and sides are covered with special thick (~3/8") multi-layer cardboard 93" tall (from the bottom of the pallet). The total weight of the box is approx. 491 lbs.

After machine is taken out of the box, it should be transported in horizontal position with the help of two wheels. Machine can, in special cases (exp. if it does not fit in doorway), be taken apart and then reassembled. This procedure should be done by a specialist or someone familiar with all technical information.

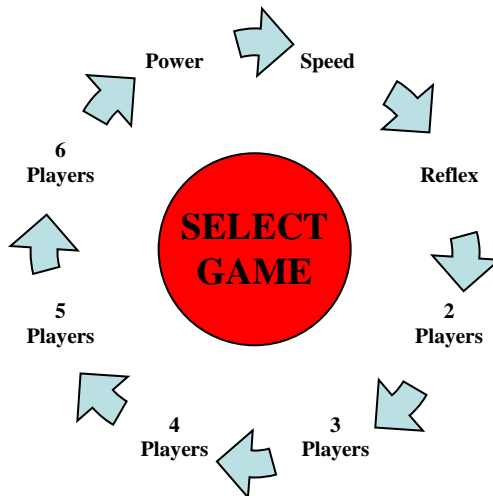
6. Installation

Machine, after being taken out of the box, should be placed in vertical position and the base should be leveled. To level the machine correct tools should be used (exp. laser level or typical manual construction heavy duty level). Turning several screws under the base allows for level adjustment. After plugging the machine to power outlet it should be ready to use.

Make sure that there is enough clearance on the sides and in front of the machine, so the player will not hit any objects after punching the bag. The **installer** of the machine is responsible for defining the safe clearance.

7. Usage instructions

- a) **It is recommended to use warm up punches before the maximum strength punch.**
- b) **For the first time user, please practice with several easy test punches before your maximum punch.**
- c) Select type of game (default setting is power mode) by pressing SELECT GAME button located on the main body of the game.



Player can choose between following types of game: power, speed, reflex and tournament for up to six players. Pressing the SELECT GAME button will cycle through the available modes as illustrated in the diagram above. In the 2 to 6 players tournament mode machine measures the player's power.

- d) Before pressing the START button player must stand in front of the Boxer.
- e) After pressing the START button player has to wait in front of the machine for the punching bag to be released from the upper position.
- f) After the punching bag is released, player should make a fist so the thumb would be on the outside of the pointing and the middle finger.
- g) Player must stand back $\frac{2}{3}$ of the length of his/her arm from the front of the punch bag.
- h) The punch must be placed in the center of the punching bag.
- i) After the punch, a score would be displayed on the front panel for the player.
- j) Following the same instructions before the next game.

8. Maintenance check list, problem prevention and day-to-day conservation

Every two weeks (recommended):

- check the air pressure of the bag - it should be **NO MORE** than 2psi,
- check if the bag is not rotating about its own axis. If it is, see point D in this section,
- check the position of the arm protector (see point H in this

section),

- check all of the connections on the main board,
- check the level/ balance of the machine (if needed, use adjusting legs under the machine to bring the machine to level),
- check if the usage instructions are readable.

Every month:

- check mounting cover screws/nuts,
- check the lubrication of the mechanism (for instructions see point C in this section),
- check the display lights,
- clean the bill acceptor.

A) Coin acceptor maintenance

Coin acceptor should be cleaned periodically (every 2000 - 3000 credits). Best way to clean it is by using simple cloth slightly soaked in distilled alcohol. Focus should be placed on cleaning the area where coins slide through (make sure sliding part is in open position).

B) Sound volume regulation

R362 potentiometer (see drawing#1) used to control volume is placed on the right side of the electronic board. The volume adjustment can be done by rotating the potentiometer to the left or right.

C) Maintenance of mechanism and regulating spring

Periodically (once a month or more often, or if the lowering speed of

punching bag is fairly low) all moving elements should be rubbed/sprayed with WD-40 or grease.

If punching bag lowers slowly or too fast one should check if spring is properly stretched. Spring can be adjusted with screw that is in the front left side after taking the masking net.

In case of forced lowering mechanism replacement one should unscrew plastic casing, and then take off masking board (black from the bottom) and remember about the retro cop light.

D) Manual punching bag reposition

In case the punching bag is vibrating too much (or if it is rotating around its own axis), the top nut located on the punching bag screw should be tightened (loosen the lower nut first) until the bag is not rotating any more.

E) Replacement of inner punch bag bladder

To replace inner bladder of the punch bag one should untie rope, take out old insert and replace it with a new rubber bladder. A special attention must be paid to the location of the bladder valve. The valve must be placed in the opening of the leather cover.

F) Bulb replacement, GAME button

In case of bulb failure in the GAME button one should take out micro-switch from the casing (by slight turn and then pull) and then proceed with bulb replacement [bulb spec: 12 Volt & 3 Watt].

G) Fuse replacement

Machine is equipped with two long term fuses. One at power supply assembly and the second one on the main electronic board [specs: 250V & 4 A]. In case of short circuit situation and/or insufficient power supplied to the electronic main board one should first check the fuses and if they are burned, then proceed with replacement. Make sure fuses used to replace old one have the same specifications.

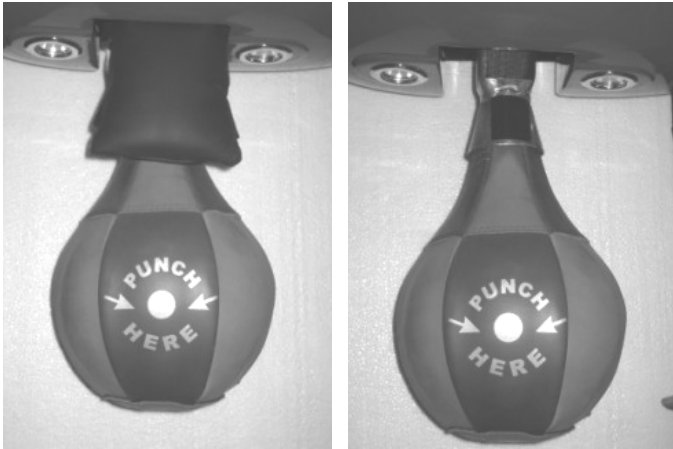
H) Position of the Arm protector

DO NOT PLAY THE GAME WITHOUT PROPERLY PLACED ARM PROTECTOR.

The position of the arm protector should be like on the picture below:



The following two pictures illustrate an improper setup of the punching bag. NEVER leave the machine in this state. The picture on the left shows the arm protector placed too high. The second picture shows the missing arm protector. Both of these cases may result in serious injury to the user.



9. Quick check for potential errors

Main board not functioning:

- 1 Check all fuses (5A).
- 2 Check the connection between power supply and the main board.
- 3 Make sure that the main processor and other connectors are well seated.
- 4 The main display can be checked by turning the switch #1 to “ON” position than turning machine off and back on.

Coin Acceptor is not functioning:

- 1 Check if it is not clogged up.
- 2 Check for dust and dirt.
- 3 Check strip connecting the main board with the acceptor.

Mechanism is not functioning:

- 1 Using just power supply check if it is possible to lower punching bag (using manual switch, black button above the 12V connector - see drawing #3).
- 2 Check for burned fuse 30A.
- 3 Check button functionality and if they have proper connection.
- 4 Check for unhooked cable from power supply spools.
- 5 Check strip connecting the main board with the power supply.

Sensor is not functioning:

- 1 Check sensors in service mode (using switch 1 on main board (S1) and manipulating button SW1 go to mode P07), if punching bag is moving UP/DOWN and on the main board (depending on bag position) HI – LO shows this would indicate that sensor is working.
- 2 Check if sensor cable is firmly connected to the main board.
- 3 Check all wires to/from the sensor.

Halogen lights are not functioning:

- 1 Check power supply cable connection.
- 2 Check power supply wire integrity.
- 3 Check connector plug for loose bulb.
- 4 Check if halogen is not burned by swapping it with a new one (12V 20W).

Button START or GAME is not functioning:

- 1 Check for main board cable connection.
- 2 Check switch/button cable connection.

Computer power supply is not functioning:

- 1 Check if power supply cable is plugged in securely.

Power supply is refusing to work:

- 1 Check if “car” fuse in power supply is not burned (30A).
- 2 Check if transformer cable is correctly hooked up to power supply socket.

Machine is not starting:

- 1 Check power cable fuse 5A.
- 2 Check if ON/OFF switch (filter) is not damaged.

Counter is showing Err:

- 1 Check if mechanical counter did not come loose (then turn the machine OFF and ON).

Bill Acceptor is not functioning:

- 1 Check if power supply cable is hooked up to main board (J3).
- 2 Check if cable from bill acceptor is correctly hooked up.
- 3 Check acceptor settings using switches: for switches 1-8 set 7 at ON, and for switches 1-4 set 3 & 4 at ON.

Sound is not working:

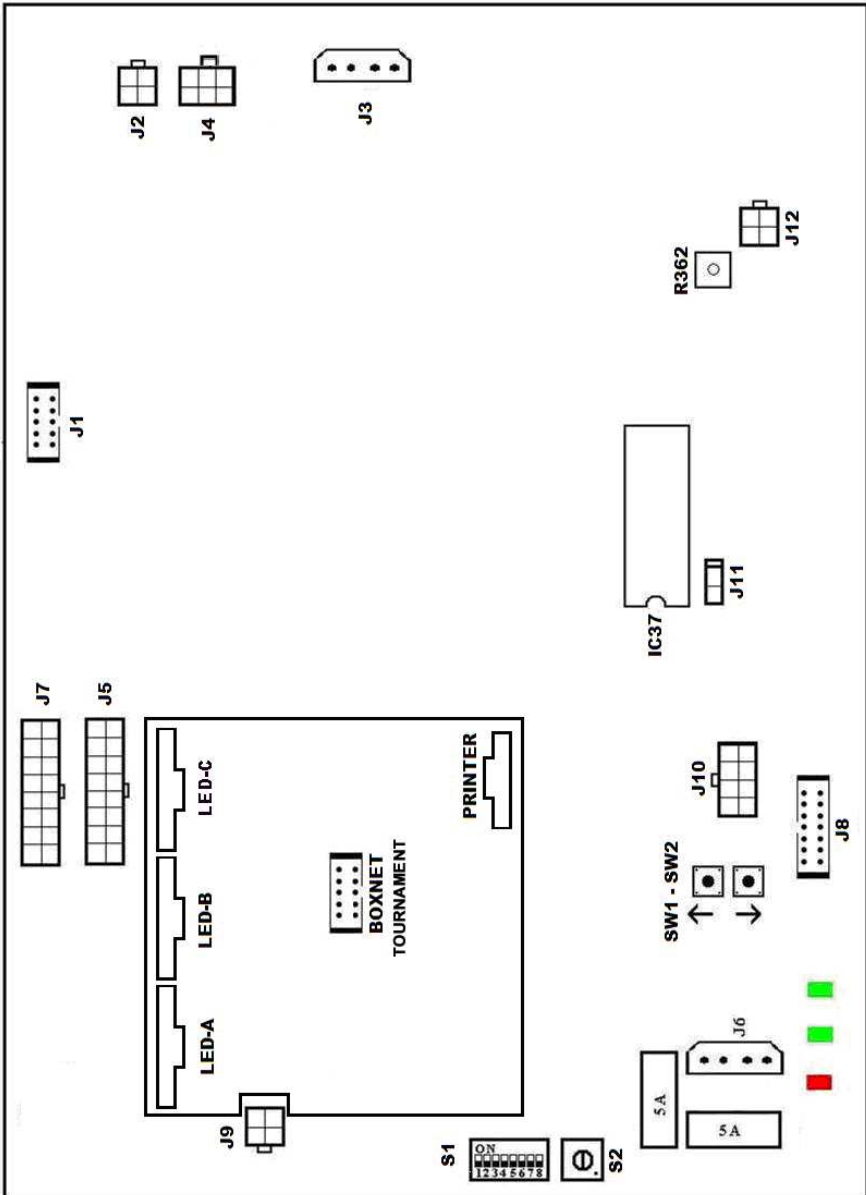
- 1 Check if it is not at low volume or mute (R362).
- 2 Check if cable is correctly connected to the main board.
- 3 Check if cable to speaker is correctly connected.

Red diode active on main board:

- 1 Usually caused by circuit being shorted at scale bulb array, check all cables for potential shortage.

10. Machine setup

Main Board Layout (Back Side)



Drawing #1

List of connectors:

J1 – connector for coin acceptor

J2 – connector for bill acceptor

J3 – connector for power supply to bill acceptor, ticket dispenser, capsule dispenser, thermal printer

J4 - connector for ticket dispenser, capsule dispenser, thermal printer

J7 & J5 – front panel backlight

J6 – connector for main board power supply (12V supplied by AC power supply)

J8 – connector for power supply

J9 – sensor connector

J10 – connector for buttons GAME and START

J11 – connector for mechanical counter

J12 – connector for speaker

S1 – service setting switches

S2 – step potentiometer for setting sensor sensitivity (0 – min, 9 - max)

SW1 & SW2 – help buttons (up/down)

R362 – potentiometer for volume control

IC37 – speech synthesizer

IC34 – main processor socket

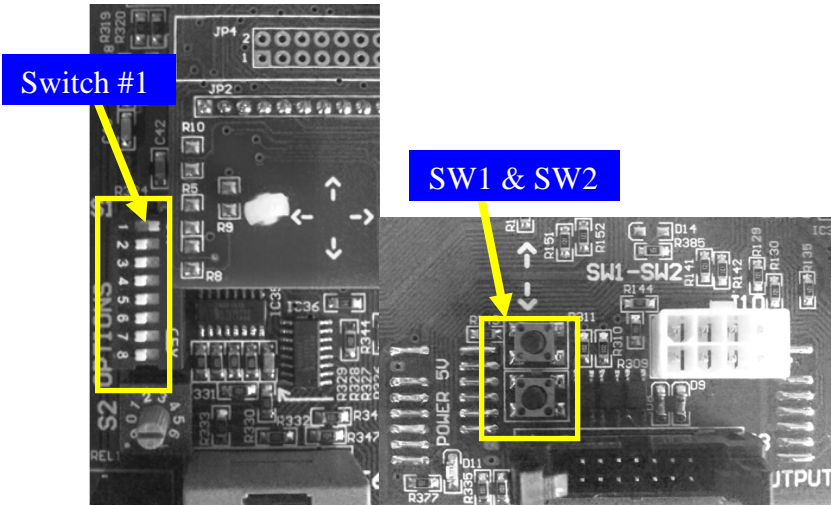
LED-A, LED-B and LED-C - connectors for prize cabinet

PRINTER - connector for thermal printer

BOXNET/ TOURNAMENT - connector for BoxNet or BoxTournament for PC

Dip Switch 1-8 (S1)

THE RED (BLACK OR BLUE) SWITCH BOX WITH 8 SWITCHES IS LOCATED ON THE LEFT SIDE OF THE MAIN CIRCUIT BOARD. TO PROGRAM, SWITCH #1 MUST BE SET TO "ON" POSITION WHEN MACHINE IS "ON".



PUSH BUTTONS SW1 ↑ AND SW2 ↓ ARE LOCATED IN THE LOWER LEFT PART OF THE MAIN CIRCUIT BOARD.

Switch #1

THIS SWITCH IS USED TO ENTER THE PROGRAM SETTINGS. PLEASE USE BUTTONS SW1 ↑ OR SW2 ↓ FOR FINDING THE RIGHT PROGRAM P1-P118. DESCRIPTIONS FOR EACH PROGRAM ARE LISTED BELOW. DURING PROGRAM SELECTION YOU WILL SEE P1-118 ON THE MAIN DISPLAY.

REMEMBER, FOR SOME SETTINGS YOU WILL USE "START" OR "GAME" BUTTONS.

P1

TEMPORARY COUNTER OF POINTS. **1 POINT = \$.25 (25 CENTS).**

YOU CAN RESET IT TO 0000 BY PUSHING AND HOLDING THE "START" BUTTON FOR 3 SECONDS.

P2

COUNTER OF POINTS. THIS IS LIFE LONG - NOT ERASEABLE.

P3

ELECTRONIC COUNTER OF REVENUE (COUNTS THE QUOTERS WHILE THE MECHANICAL COUNTER IS DISCONNECTED).

P4

CREDIT RATIO. HOW MANY QUARTERS (\$.25) IS NEEDED FOR 1 CREDIT.

THE LEFT SIDE OF THE RATIO IS CONTROLLED BY THE "START" BUTTON.

Example: 1 credit is worth four quarters (\$1), so the P04 will be set to 4 - 1.

1 credit is worth two quarters (50 cents), so the P04 will be set to 2 - 1.

NOTE: IF THE BILL ACCEPTOR IS SET 4 PULSES FOR A 1\$, SET P9 TO 12 (in case of the older software to 5).

P5

YOU CAN SET ADDITIONAL CREDITS (BONUS CREDITS) WHEN A SET DOLLAR AMOUNT IS INSERTED. USING THE "START" BUTTON YOU CAN ADJUST HOW MANY QUARTERS RECEIVED AT ONCE WILL GIVE THE BONUS. USING THE "GAME" BUTTON YOU WILL THEN ASSIGN NUMBER OF CREDITS FOR THE RECEIVED AMOUNT.

Example: you want to set 8 credits (punches) for \$5, you should set P5 to 20-8. **NOTE: SEE SETTING P65.**

P6

THIS SETTING FUNCTIONS THE SAME AS P5 **BUT ALWAYS FOR BIGGER VALUE OF THE BILL OR COIN THAN P5.**

Example: if you want to set 8 credits (punches) for \$5, you should set P5 to 20-8.

if you want to set 18 credits (punches) for \$10, you should set P6 to 40-18. **NOTE: SEE SETTING P65.**

P7

THIS FUNCTION IS USED FOR TESTING OF THE SENSOR (DIAGNOSTIC FUNCTION).

WHEN PUNCHING BAG IS IN THE VERTICAL POSITION - THE DISPLAY SHOWS - "LO", WHEN PUNCHING BAG IS IN THE HORIZONTAL POSITION - DISPLAY SHOWS "HI".

P8

YOU CAN SET THE BEST SCORE WHICH WILL BE ON THE DISPLAY FOR **POWER** MODE ONLY. PLAYERS WILL NEVER BE ABLE TO RECEIVE A HIGHER SCORE (WHICH MUST BE SET BETWEEN **900** AND **990**). YOU CAN ADJUST THIS VALUE BY USING "START" (UP) AND "GAME" (DOWN) BUTTONS. AFTER YOU SET THE DESIRED UNATTAINABLE POWER HIGHEST SCORE YOU MUST TURN **SWITCH # 5** TO "ON" POSITION.

IMPORTANT: AFTER YOU SET THE RECORD AND PUT SWITCH #5 TO "ON" POSITION YOU MUST TURN OFF THE MACHINE FOR 5 SECONDS.

P9

THIS FUNCTION IS USED FOR DIFFERENT SETTINGS OF THE COIN ACCEPTOR, FOR EXAMPLE: 0-USA, 1-CANADA.

NOTE: IF THE BILL ACCEPTOR IS SET 4 PULSES FOR A 1\$, SET P9 TO 12 (in case of the older software to 5).

P10

PARAMETER USED BY FACTORY. DEFAULT SETTING IS 0.

P11

HOPPER OUTPUT DEVICE SETTING

0 - OFF,

1 - TICKET DISPENSER,

2 - BALL DISPENSER,

3 - POWER ALWAYS ON (USED FOR THERMAL PRINTERS).

NOTE: IN ORDER TO MANUALLY FEED THE TICKET DISPENSER PRESS AND HOLD IN THE SAME TIME SWITCH SW1 AND SW2.

DEFAULT SETTING IS 3.

P12

SETS HOW MANY TICKETS WILL BE GIVEN FOR 1 CREDIT (RANGE FROM 0-5, DEFAULT SETTING 5).

- P13** SETS HOW MANY TICKETS FOR THE HIGHEST SCORE (RANGE FROM 0-20, DEFAULT SETTING 5).
- P14** “BREAKING POINT”- BP.
SETTING THAT WOULD ENABLE THE TICKET DISPENSER TO START GIVING OUT THE TICKETS (RANGE FROM 0-990). FACTORY SETTING IS 0.
- P15** SETS HOW MANY TICKETS WILL BE GIVEN OUT AFTER REACHING THE “BREAKING POINT” AS THE FIRST VALUE (RANGE FROM 0-20). FACTORY SETTING 0.
- P16** POINT INCREMENT, IN ANOTHER WORDS - HOW MANY MORE POINTS MUST BE SCORED BEFORE THE NEXT TICKET/S WILL BE GIVEN OUT (RANGE FROM 10-100). FACTORY SETTING 40.
- P17** NUMBER OF TICKETS GIVEN OUT AFTER REACHING EACH POINT INCREMENT – SET IN P16. RANGE 0-5, FACTORY SETTING 0.
- P18** COUNTER OF RELEASED TICKETS.

BELOW 2 EXAMPLES.

RESULT ON DISPLAY	TICKETS		RESULT ON DISPLAY	TICKETS
0	0		0	0
40	1		40	0
80	2		80	0
120	3		120	0
160	4		160	0
200	5		200	0
240	6		240	0
280	7		280	0
320	8		320	0
360	9		360	0
400	10		400	0
440	11		440	0
480	12		480	0
520	13		520	0
560	14		560	0
600	15		600	10
640	16		640	12
680	17		680	14
720	18		720	16
760	19		760	18
800	20		800	20
840	21		840	22
880	22		880	24
920	23		920	26
960	24		960	28
P14 = TICKET = 0			P14 = TICKET = 600	
P15 = TICKET= 0			P15 = TICKET = 10	
P16 = TICKET=40			P16 = TICKET = 40	
P17 = TICKET= 1			P17 = TICKET = 2	

P19

YOU CAN SET 0-10 BONUS CREDITS FOR BREAKING RECORD (HIGH SCORING IN POWER MODE) (USE THE “START” BUTTON). DEFAULT SETTING IS 1.

P20

YOU CAN CLEAR THE CREDITS BY PUSHING THE “START” BUTTON.

P21

COUNTER OF FREE PUNCHES WHICH YOU ACTIVATE BY PUTTING DIP SWITCH # 2 TO “ON” POSITION.

P22

COUNTER OF THE BROKEN RECORDS (HIGHEST SCORES) (CAN BE RESET BY PRESSING & HOLDING “START” BUTTON).

P23

WHEEL OF FUN MODE SETTINGS.

- 0 - THIS SETTING DISABLES THE WHEEL OF FUN OPTION. ONLY TWO WINNING PRIZES ARE POSSIBLE.**

PRIZE #1 is for triple numbers such as 111, 222, 333...999.

PRIZE #2 is for multiples of 100 such as 100, 200, 300...900.

Note: Setting prize #3 is available in this mode but does not have any meaning and is reserved for future expansions.

For this setting P11 must be set to 3.

1 – NOT USED

2 – NOT USED

- 3 – IN THIS MODE WINNING IS BASED ON A RANGE OF NUMBERS. P59 TO P64 MUST BE SET.**

Example: Prize #1 is won when the score falls between the two numbers set in P59 and P60. Factory default setting for prize #1 is between 900 and 950.

For this setting P11 must be set to 3.

NOTE: The machines without mounted “Wheel of Boxing” have possibility of giving out Prize #1 and #2 based on the scored number. Prize #1 is for triple number like 111, 222, 333 etc. Prize #2 is for multiples of 100, like 100, 200, 300 etc. In order to have a

prove of winning the prize, thermal printer, ticket dispenser or capsule dispenser is recommended.

The machine will print ticket for the highest score (Power mode) as a Prize #4 if printer is installed.

P24

NOT USED.

P25

NOT USED.

P26

NOT USED.

P27

NOT USED.

P28

NOT USED.

P29

NOT USED.

P30

INITIAL HIGHEST SCORE (RECORD) SETTING FOR POWER PUNCH (RANGE 500-999, DEFAULT SETTING 650).

P31

NUMBER OF FREE CREDITS AWARDED FOR THE PRIZE #1 CAN BE ASSIGNED USING THIS OPTION. THIS NUMBER CAN BE SET IN THE RANGE OF **0-50**, DEFAULT SETTING: 1.

P32

NUMBER OF FREE CREDITS AWARDED FOR PRIZE #2 CAN BE ASSIGNED USING THIS OPTION. THIS NUMBER CAN BE SET IN THE RANGE OF **0-50**, DEFAULT SETTING: 1.

P33

NOT USED.

P34

NUMBER OF TICKETS GIVEN FOR PRIZE #1 CAN BE ASSIGNED USING THIS OPTION. THIS NUMBER CAN BE SET IN THE RANGE OF **0-50**, DEFAULT SETTING: 5.

P35

NUMBER OF TICKETS GIVEN FOR PRIZE #2 CAN BE ASSIGNED USING THIS OPTION. THIS NUMBER CAN BE SET IN THE RANGE OF **0-50**, DEFAULT SETTING: 10.

P36

NOT USED.

P37
COUNTER SHOWING THE NUMBER OF PRIZE #1 WINNERS
(CAN BE RESET BY PRESSING & HOLDING “START”
BUTTON).

P38
COUNTER SHOWING THE NUMBER OF PRIZE #2 WINNERS
(CAN BE RESET BY PRESSING & HOLDING “START”
BUTTON).

P39
NOT USED.

P40
SETTING OF THE LOWEST SCORE (BREAK POINT), FOR
WHICH THE THERMAL PRINTER INSTALLED ON THE
MACHINE WILL PRINT A TICKET (RANGE 100-999, DEFAULT
SETTING 998). THE PRINTER SHOULD BE SET UP TO PRINT
THE PLAYER’S SCORE.

NOTE: This print out has a delay of 20-30 seconds.

P41
IF SET TO ‘1’ THE TICKET FROM THE THERMAL PRINTER (IF
INSTALLED) WILL BE PRINTED FOR THE HIGHEST SCORE
(IN THE POWER MODE) – PRIZE #4.
IF SET TO ‘0’ NO TICKET FOR THE HIGHEST SCORE WILL BE
PRINTED. DEFAULT SETTING: 1.

P42
NOT USED.

P43
SETTING OF THE FIRST MAGIC NUMBER ITSELF (RANGE
100-999, DEFAULT VALUE 777, THE FUNCTION IS OFF WHEN
P43=0).

P44
NOT USED.

P45
COUNTER OF FIRST MAGIC NUMBER PRIZE (PRIZE #5)
WINNINGS (CAN BE RESET BY PRESSING & HOLDING
“START” BUTTON).

P46
NOT USED.

P47
NOT USED.

- P48**
NOT USED.
- P49**
NUMBER OF CREDITS INSERTED IN THE MACHINE AT ONE TIME WHICH DECREASES THE HIGHEST SCORE (IN POWER MODE). RANGE 0-50, DEFAULT VALUE: 0 (FUNCTION IS OFF).
- P50**
VALUE BY WHICH THE HIGHEST SCORE (IN POWER MODE) WILL BE LOWERED (SETTING WHICH WORKS WITH P49, RANGE 0-50, DEFAULT VALUE: 2).
- P51**
IF SET TO 1 ACTIVATES OPTION P52. DEFAULT SETTING: 0.
- P52**
SETTING OF THE HIGHEST SCORE IN POWER MODE (BREAK POINT) ABOVE WHICH SURPRISE BALL (CAPSULE) WILL BE DISPENSED (RANGE 100-900, DEFAULT SETTING: 500).
- P53**
COUNTER OF DISPENSED SURPRISE BALLS - CAPSULES (CAN BE RESET BY PRESSING & HOLDING "START" BUTTON).
- P54**
NOT USED.
- P55**
SETTING OF THE SECOND MAGIC NUMBER ITSELF (RANGE 100-999, DEFAULT VALUE 0).
- P56**
NOT USED.
- P57**
COUNTER OF THE SECOND MAGIC NUMBER HITS (CAN BE RESET BY PRESSING AND HOLDING "START" BUTTON FOR 10 SECONDS).
- P58**
NOT USED.

NOTE: Settings in P59 to P64 cannot overlap. For example, if the lower limit for prize #1 is 900, the upper limit for prize #2 must be less than 900 and so on.

P59

UPPER SCORE LIMIT FOR PRIZE #1 (MAX. VALUE = 999, DEFAULT SETTING: 950).

IMPORTANT: THIS GAME MODE IS ACTIVATED WITH P23 = 3.

P60

LOWER SCORE LIMIT FOR PRIZE #1 (DEFAULT SETTING: 900). SEE P59.

P61

UPPER SCORE LIMIT FOR PRIZE #2 (DEFAULT SETTING: 850). SEE P59.

P62

LOWER SCORE LIMIT FOR PRIZE #2 (DEFAULT SETTING: 800). SEE P59.

P63

NOT USED.

UPPER SCORE LIMIT FOR PRIZE #3 (DEFAULT SETTING: 750). SEE P59.

P64

NOT USED.

LOWER SCORE LIMIT FOR PRIZE #3 (MIN. VALUE = 100, DEFAULT SETTING: 700). SEE P59.

P65

ADDITIONAL CREDIT COUNT METHOD.

IF SET TO 1 IT WILL GIVE OUT CREDIT BASED ON THE TOTAL AMOUNT OF MONEY INSERTED BEFORE PRESSING THE "START" BUTTON (IF USER INSERTS 5 SINGLES CREDITS WILL BE COUNTED SAME AS FIVE DOLLAR BILL, AN EXTRA CREDIT WILL BE GIVEN BASED ON SETTINGS IN OPTION **P05** AND **P06**).

IF SET TO 0 FOR EACH DOLLAR INSERTED USER WILL GET ONE CREDIT ONLY. BY DEFAULT, THE FUNCTION IS OFF (P65=0).

P66

BOXER ID.

P67

TIME SETTING FOR SENDING INFORMATION USING THE BOXNET FUNCTION. TIME IS GIVEN IN FOLLOWING FORMAT: HH.MM.SS, FOR EXAMPLE 05.25.00 MEANS DATA FROM MACHINE WILL BE SENT EACH 5 HOURS 25 MINUTES.

P67 = 0; FUNCTION IS OFF, NO DATA IS SENT,

P67 = 00.00.05...00.01.00; CYCLE BETWEEN SENDING INFO PACKETS IS 5 SEC TO 1 MIN (IN 5 SEC JUMPS),

P67 = 00.05.00...18.00.00; CYCLE BETWEEN SENDING INFO PACKETS IS 5 MIN TO 18 HOURS (IN 5 MIN JUMPS).

WHEN TURNING THE MACHINE ON, THE DATA IS SENT AFTER FIRST 3 MINUTES, DESPITE P67'S SETTING, IN ORDER TO STABILIZE GSM CONNECTION (ALTHOUGH NO DATA IS SENT WHEN P67=0).

AFTER SETTING TIME IN P67 MACHINE HAS TO BE TURNED OFF AND TURNED BACK ON.

P68

SETTING FOR FLASHING LIGHTS IN IDLE STATE:

P68 = 0; OFF,

P68 = 1 TO 60; MINUTES BEFORE LIGHTS START FLASHING. DEFAULT SETTING: 0.

P69

SETTING FOR SOUND DELAY IN IDLE STATE:

P69 = 0; OFF,

P69 = 1 TO 60; MINUTES BEFORE SOUND STARTS PLAYING. DEFAULT SETTING: 0.

NOTE: dip switch #3 will determine if sound will be played.

P70

AUTOPLAY –SETTING TIME AFTER WHICH MACHINE WILL RELEASE A FREE GAME.

P70 = 0; OFF,

P70 = 1 TO 180; MINUTES BEFORE FREE GAME IS ACTIVATED. DEFAULT SETTING: 0.

P71

PRINT PRIZE #1 (1 = **PRINT**, 0 = **DON'T PRINT**). DEFAULT SETTING : 0.

P72

PRINT PRIZE #2 (1 = **PRINT**, 0 = **DON'T PRINT**). DEFAULT SETTING : 0.

P73

PRINT PRIZE #3 (1 = **PRINT**, 0 = **DON'T PRINT**). DEFAULT SETTING : 0.

P74

PARAMETER USED BY FACTORY.

P75

PARAMETER USED BY FACTORY.

P76

PARAMETER USED BY FACTORY.

P77

ACTIVATION OF SURPRISE BALL (CAPSULE) DISPENSER WHEN PLAYER REACHES 100, 200, 300...900 POINTS OR 111, 222, 333... 999 POINTS, AS FOLLOWS:

0 - THE FUNCTION IS OFF,

1 - THE SURPRISE BALL (CAPSULE) DISPENSER IS ON FOR MULTIPLES OF 100 SUCH AS 100, 200 ...900 AND FOR TRIPLE NUMBERS SUCH AS 111, 222 ...999,

2 - THE SURPRISE BALL (CAPSULE) DISPENSER IS ON FOR MULTIPLES OF 100 ONLY,

3 - THE SURPRISE BALL (CAPSULE) DISPENSER IS ON FOR TRIPLE NUMBERS ONLY.

DEFAULT SETTING IS 0 (OFF).

P78

ACTIVATION OF SURPRISE BALL (CAPSULE) DISPENSER WHEN PLAYER BREAKS THE RECORD (HIGH SCORES IN POWER MODE). WHEN SET TO 1 THE FUNCTION IS ON, WHEN SET TO 0 - IT IS OFF. DEFAULT SETTING: 0.

P79

DEFINES HOW MANY FREE CREDITS WILL BE GIVEN WHEN PLAYER REACHES MULTIPLE OF 100 SCORE (RANGE 0-10, DEFAULT SETTING: 0).

P80

DEFINES HOW MANY FREE CREDITS WILL BE GIVEN WHEN PLAYER REACHES TRIPLE NUMBER SCORE (RANGE 0-10, DEFAULT SETTING: 0).

P81

RELAX – TIME FOR WHICH HALOGEN LAMP WILL BE ON (RANGE 0-5 SECONDS), JUMP 0.1 SECOND).

P81=0.0 - THE FUNCTION IS OFF, HALOGEN WILL NOT SHINE.

P81=0.1...5.0 - HALOGEN SHINES.

- Example: when P81=0.4 it means the halogen lamp will be ON for 0,4 second.

DEFAULT SETTING IS 0.0 – RELAX FUNCTION IS OFF.

P82

RELAX – DEFINES FREQUENCY OF HOW OFTEN HALOGEN LAMP WILL NOT SHINE (RANGE 1 SECOND TO 1 HOUR).

TIME IS GIVEN IN FOLLOWING FORMAT: HH.MM.SS.

P82=00.00.01...00.00.10 (1 TO 10 SECONDS, 1 SECOND JUMP),

P82=00.00.10...00.10.00 (10 SECONDS TO 10 MINUTES, 5 SECONDS JUMP),

P82=00.10.00...01.00.00 (10 MINUTES TO 1 HOUR, 1 MINUTE JUMP).

DEFAULT SETTING IS P82=00.00.30 (30 SECONDS).

- Example: when P82 is set to 10, every 10 seconds halogen will not shine (pause).

IMPORTANT:

P82 CAN BE SET BUT IT ALWAYS HAS TO BE EQUAL OR HIGHER VALUE THAN P81.

- Example: setting P81=4.5 and P82 00.00.01 cannot be done.

P83

MULTI TOURNAMENT - WHEN SET TO 1 THE FUNCTION IS ON, WHEN SET TO 0 - IT IS OFF.

THIS MODE DISABLES REFLEX AND SPEED GAMES. ONLY POWER AND TOURNAMENT GAMES ARE ACTIVATED. BY DEFAULT, THIS FUNCTION IS OFF (P83=0).

IMPORTANT:

TO ACTIVATE MULTI TOURNAMENT: P83 NEEDS TO BE SET TO 1. TO ACHIEVE THE EFFECT, THE MACHINE NEEDS TO BE SWITCHED OFF AND BACK ON.

P84

NOT USED.

P85

NOT USED.

P86

DEFINES FREQUENCY OF RESETTING HIGH SCORES - TIME IN HOURS. AVAILABLE RANGE IS 0 TO 240. IF SET TO 0 THEN THE FUNCTION IS OFF. DEFAULT VALUE: 0.

NOTE:

THIS TIME IS CALCULATED FROM THE LAST RESETTING EITHER AUTOMATIC OR MANUAL (USING THE DIP SWITCH #4). WORKS WITH P87.

P87

DEFINES FOR HOW LONG (TIME IN MINUTES) MACHINE NEEDS TO BE IN THE IDLE STATE (NOT OPERATED BUT TURN ON) FOR THE SCORES TO BE RESET. THE LIMIT OF HOURS IN P86 MUST BE FIRST MET. AVAILABLE RANGE IS 0 TO 240. IF SET TO 0 THEN THE FUNCTION IS OFF. DEFAULT VALUE: 1. SET IT ALONG WITH P86.

P88

PARAMETER USED BY FACTORY.

P89

NOT USED.

P90

NUMBER OF GAMES PLAYED AFTER WHICH A SURPRISE BALL WILL BE GIVEN OUT (RANGE 0 - 1000).

When P90=0 the function is off (games will not be counted up).

For the function to be effective P11=2 and game mode must be either power or tournament.

- Example: if number of games is bigger than P90, the capsule dispenser will give out a ball. After dispensing a ball, the game counter is reset.

SETTINGS FOR PRIZE BOXER.

Prize Boxer allows winning of three prize types. For each prize type zero to two prizes can be loaded to the machine. Prize one is for the weakest score, prize three is for the strongest punch.

The prize of type will be released if:

- at least one prize is loaded,
- money counter accumulated the requested amount of money,
- error counters of boxes connected with the prize show 0.

P100

SERVOMECHANISM TESTING.

Press "START" button to go from 0 to 6 to choose servomechanism number, press "GAME" button to test chosen servo.

While testing the display shows "run", and the servo number cannot be changed.

P100=0 - TESTING IS OFF.

P100=1..6 – MANUAL TESTING OF EACH SENSOR AND SERVOMECHANISM.

Test results are not saved to error counters.

Sensors are tested:

If box's hatch is up (closed), sensor status should be HI; If box's hatch is down (open), sensor status should be LO. If the actual status is different to the desired status, sensor is faulty.

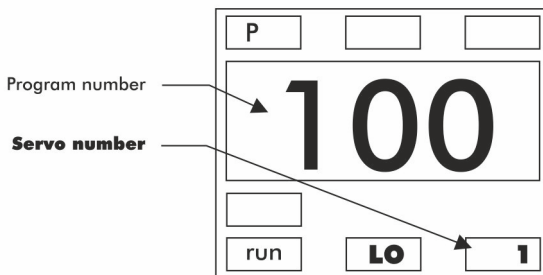
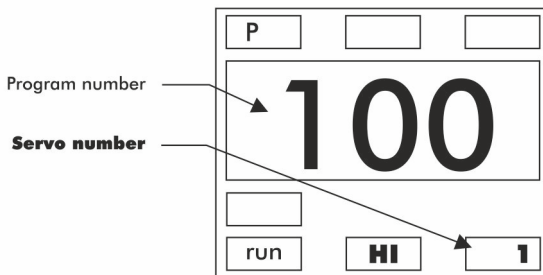
P100=7 – AUTOMATIC LOOP TESTING OF ALL SENSORS AND SERVOS.

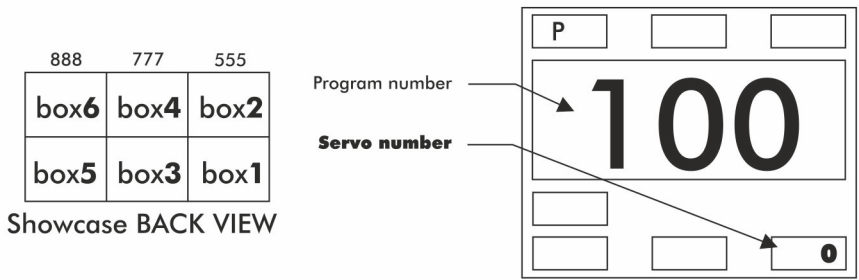
Testing all sensors one by one: each hatch if closed it opens. If closed hatch does not open, the error is recognized. Results of this testing are saved to error counters P113...P118. If test shows an error winning prizes from faulty boxes is blocked.

Example: automatic testing found box2 being faulty, prize number 1 will be unavailable. See P113 to P118 for making the prize available again.

Note: to test all boxes put all hatches to up position (closed).

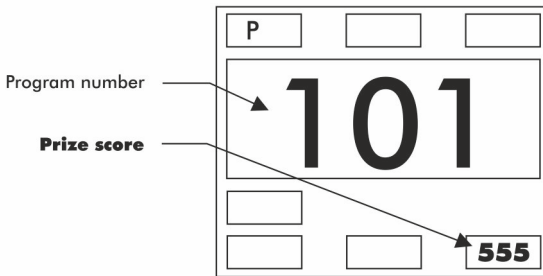
Default setting: P100=0.





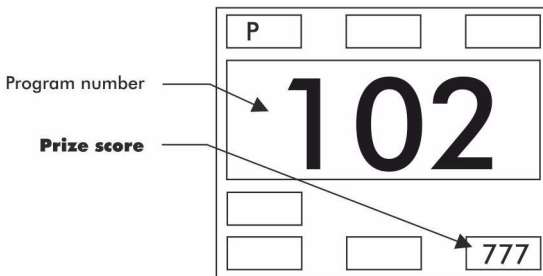
P101

WINNING SCORE FOR PRIZE 1: RANGE 500 TO 699, DEFAULT 555.



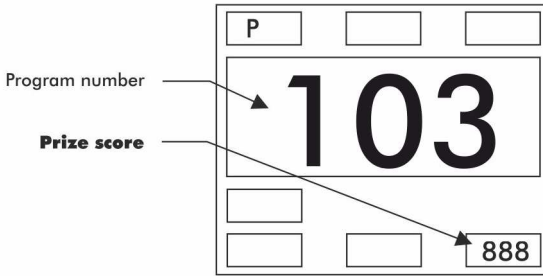
P102

WINNING SCORE FOR PRIZE 2: RANGE 700 TO 799, DEFAULT 777.



P103

WINNING SCORE FOR PRIZE 3: RANGE 800 TO 899, DEFAULT 888.



P104-P106

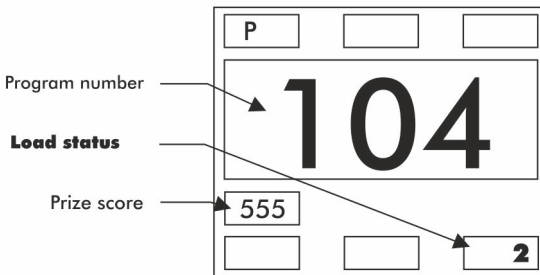
PRIZE LOAD STATUS.

Defines how many (and if any) prizes had been loaded to the machine. "0" status means no prize had been loaded.

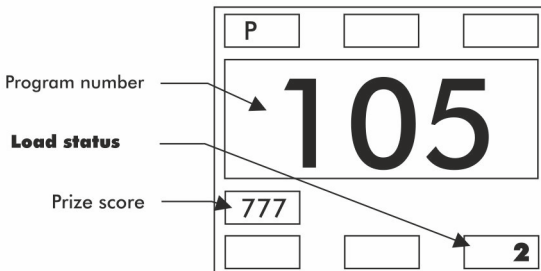
"1" status means one prize had been loaded (on upper or lower shelf)

"2" status means two prizes had been loaded (first on the lower shelf, the second on the upper shelf).

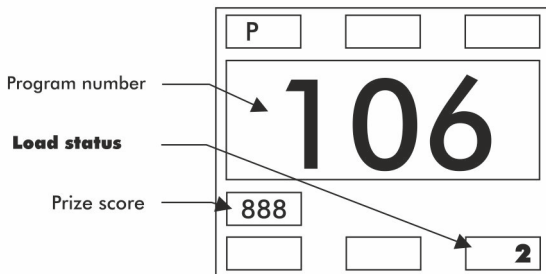
Prize 555



Prize 777



Prize 888



SEE BELOW TABLE FOR DETAILED SETTINGS.

FUNCTION/SETTING	0	1	2
P104	NO PRIZE 1	ONE PRIZE 1	TWO PRIZES 1
P105	NO PRIZE 2	ONE PRIZE 2	TWO PRIZES 2
P106	NO PRIZE 3	ONE PRIZE 3	TWO PRIZES 3

P107-P109

PRIZE VALUE.

Defines value of each prize (1-3) in currency.

P107=value of prize 1 in currency eg. USD, EUR,

P108=value of prize 2 in currency eg. USD, EUR,

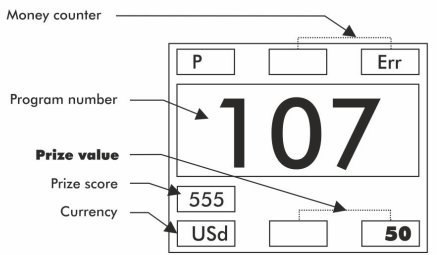
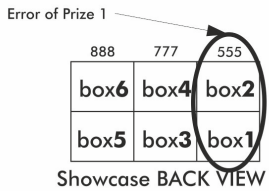
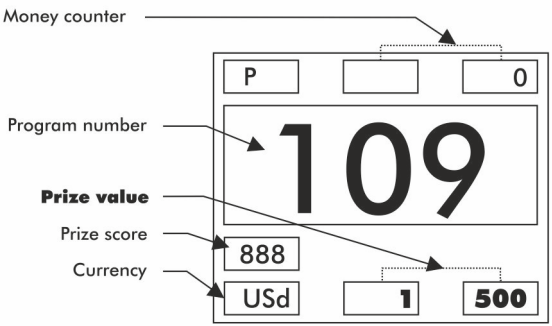
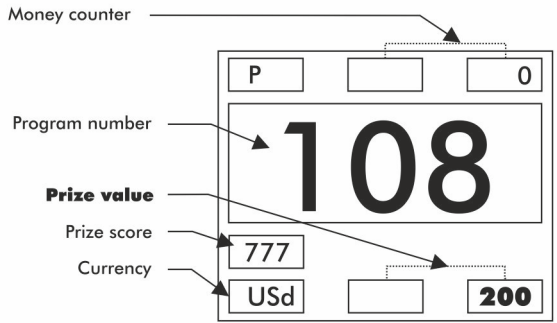
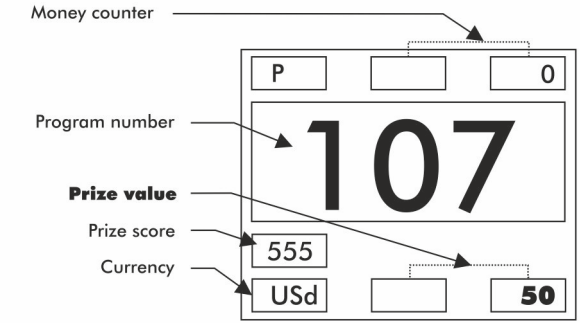
P109=value of prize 3 in currency eg. USD, EUR.

Before each prize (1 - 3) can be won, the money accumulated by the machine (shown on the P107-P109 money counters - in the top right corner) must be the same as the value.

Example: you bought a prize (prize 1) for 20 USD and you want to earn on it 80 USD, so your prize value is 100 (20+80) and you have to set P107 to 100.

Money counter can be reset: using "GAME" button reset prize value to 0, then press "GAME" button for 3 seconds. Set prize value again.

Money counter shows "Err" if one of the error counters connected with the prize is different than 0. After removing the reason for the error and after manually resetting the error counter the money counter shows again the accumulated money value.



P110-P112

PRIZE COUNTERS.

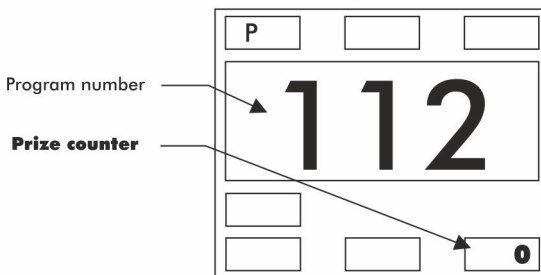
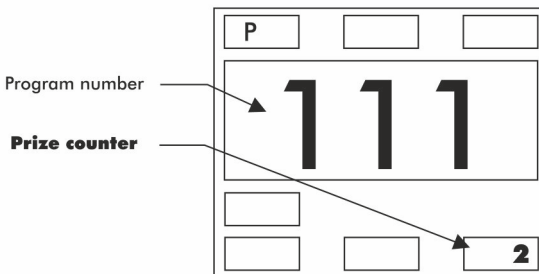
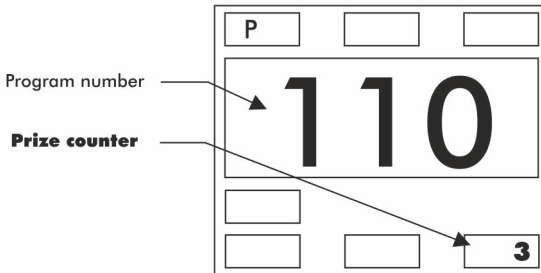
Counts all released and unreleased prizes. Prize is unreleased if the prize should be released but because of faulty servomechanism hatch did not open or the prize got clogged up in the box.

P110 – prize 1.

P111 – prize 2.

P112 – prize 3.

Prize counters can be reset by pressing “GAME” button for 3 seconds.



P113-P118

ERROR COUNTERS.

Counts prize release errors while releasing prizes or testing sensors and servos in ALL mode (P100).

P113 – box 1; connected with prize 1,

P114 – box 2; connected with prize 1,

P115 – box 3; connected with prize 2,

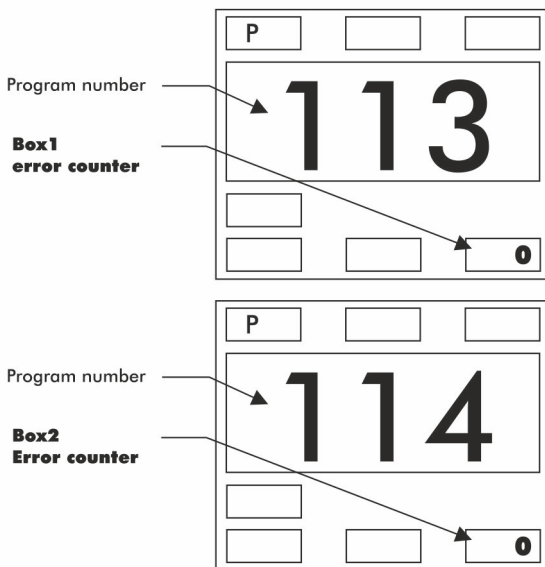
P116 – box 4; connected with prize 2,

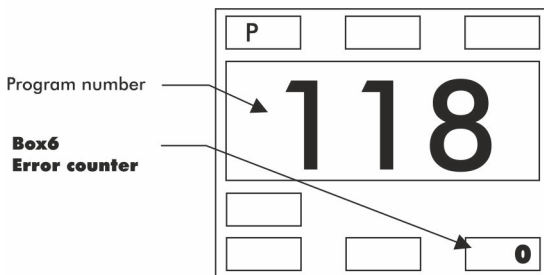
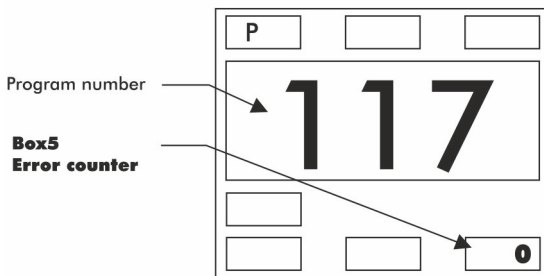
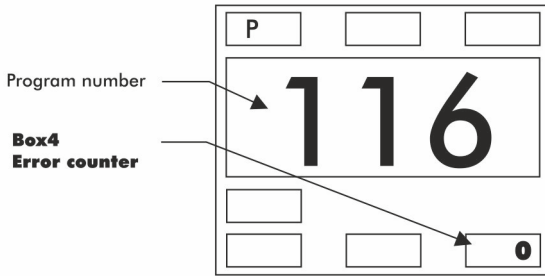
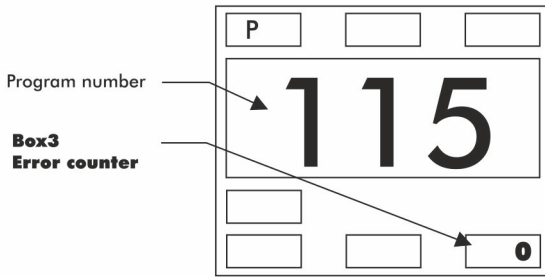
P117 – box 5; connected with prize 3,

P118 – box 6; connected with prize 3.

Error counters can be reset by pressing “GAME” for 3 seconds.

If error occurs on any of the boxes, prize winning of the connected prize is unavailable. To make the game available again, repair any faults and reset error counter.





Switch #2

When “ON” machine is set for free punch.

Switch #3

If “ON” “DEMO” will play every 2 minutes, when the machine is not used. If “OFF” the sound is turned off.

Switch #4

When “ON” the highest score for each game will be reset after you push the “START” button. When “OFF” the top scores will stay displayed.

Switch #5

When “ON” you will activate unattainable record (highest score) which you must set before in P8 (service key).

Remember: to activate this record you must turn off and turn on the machine.

Switch #6

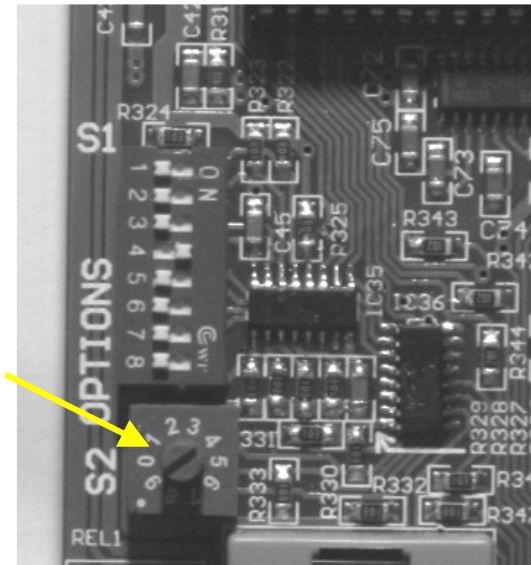
If “ON” tournament game for up to 6 players, if “OFF” tournament game for 3 players.

Remember: to activate this setting you must turn off and turn on the machine.

Switch #7,8

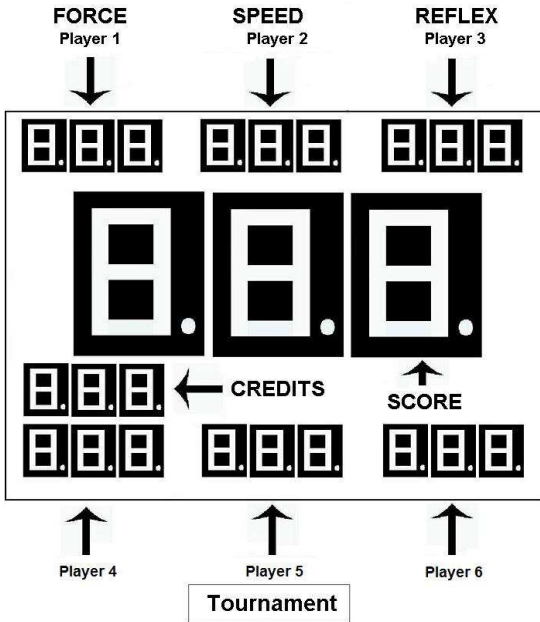
NOT USED

Sensitivity switch (S2).

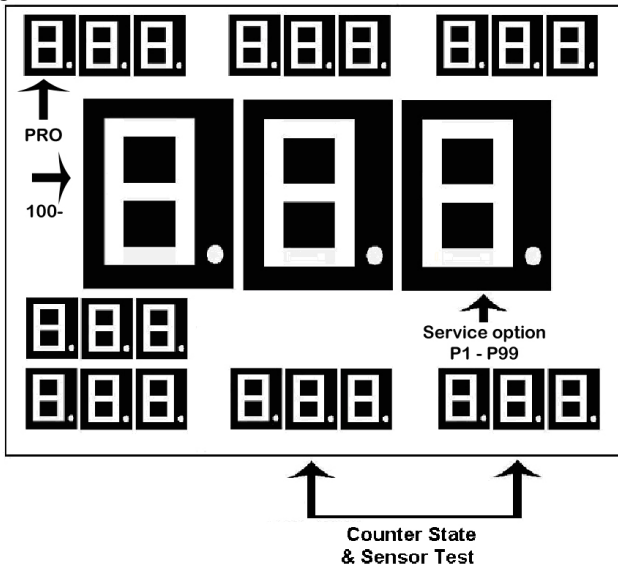


The sensitivity can be changed by rotating switch S2. After the switch is rotated the sensitivity level will be shown on the credit display. Lower level numbers correspond to greater difficulty.

Main Board Layout (Front)

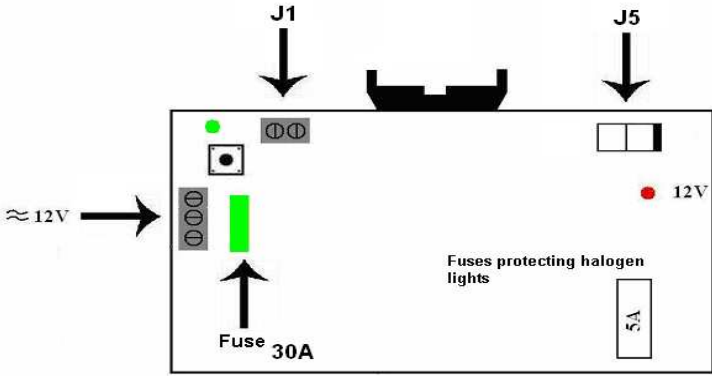


Drawing #2

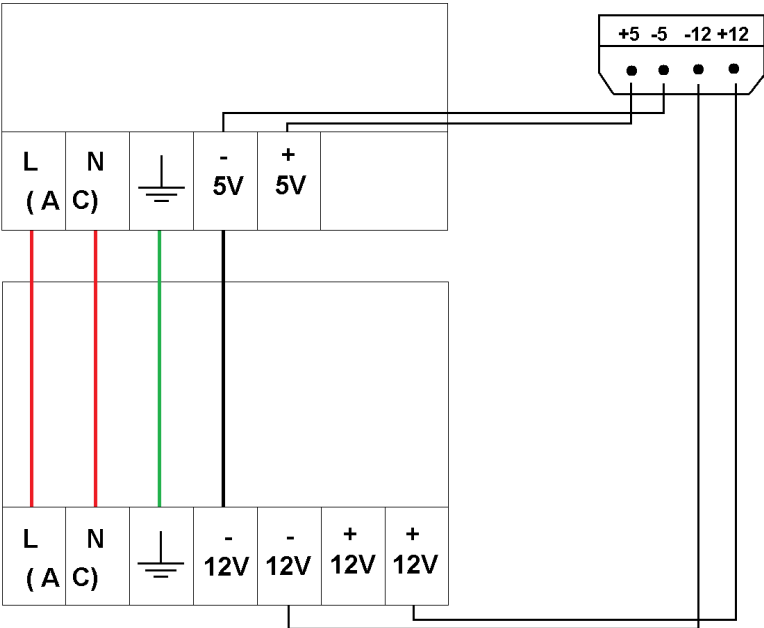


Drawing #3

Power Supply Layout:



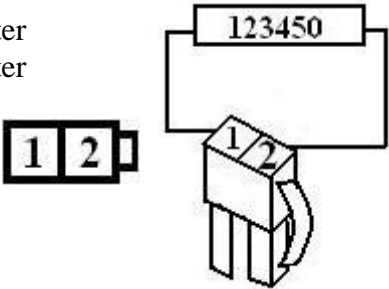
Drawing #4



Drawing #5

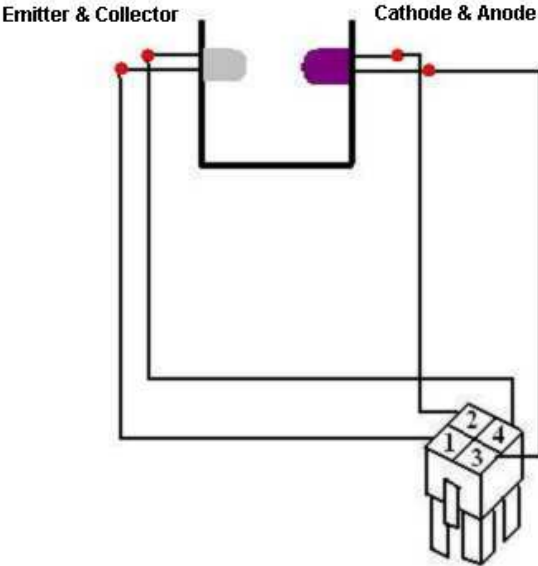
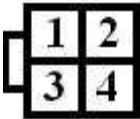
Mechanical counter

- 2 – wire from mechanical counter
- 1 – wire from mechanical counter



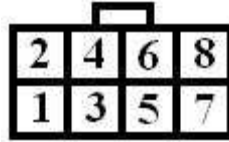
Sensor

- 1- Emitter
- 2- Cathode
- 3- Anode
- 4- Collector



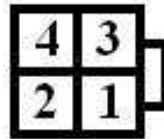
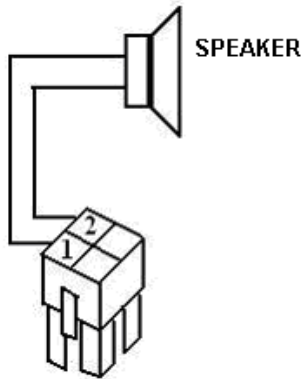
Buttons Start & Game

- 1 & 2 – START game
- 3 & 4 – GAME selection
- 5 & 6 – bulbs lighting button Start
- 7 & 8 – bulbs lighting button Game



Speaker

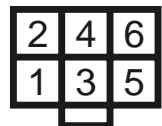
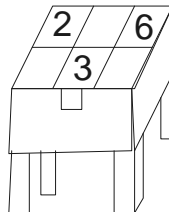
- 1 - speaker
- 2 - speaker
- 3 - unused
- 4 - unused



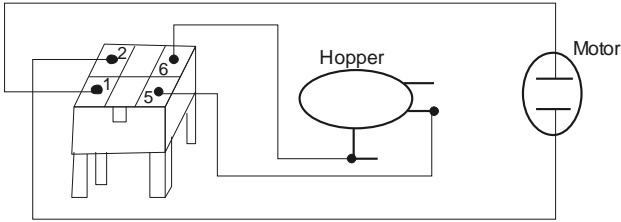
J4

Ticket dispenser

- 2 - red (+12V)
- 6 - green (signal)
- 3 - black (-12V)

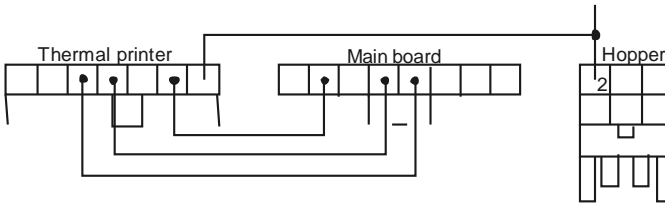


Hopper



2	4	6
1	3	5

Thermal printer



2	4	6
1	3	5

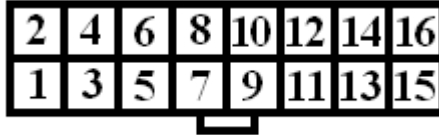
J5

- 1 – tournament (-)
- 2 – tournament (+)
- 3 – 100 (-)
- 4 – 100 (+)
- 5 – 300 (-)
- 6 – 300 (+)
- 7 – 500 (-)
- 8 – 500 (+)
- 9 – 700 (-)
- 10 – 700 (+)
- 11 – 900 (-)
- 12 – 900 (+)
- 13 – Select Game (-)
- 14 – Select Game (+)
- 15 – Force (-)
- 16 – Force (+)

2	4	6	8	10	12	14	16
1	3	5	7	9	11	13	15

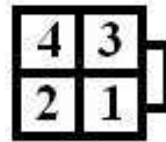
J7

- 1 – 100 (-)
- 2 – 100 (+)
- 3 – 300 (-)
- 4 – 300 (+)
- 5 – 500 (-)
- 6 – 500 (+)
- 7 – 700 (-)
- 8 – 700 (+)
- 9 – 900 (-)
- 10 – 900 (+)
- 11 – Select Game (-)
- 12 – Select Game (+)
- 13 – speed (-)
- 14 – speed (+)
- 15 – Reflex (-)
- 16 – Reflex (+)



Paper Money Depositor

- 1 – Credit relay (Common) normally purple.
Pin#8 at the ICT connector



- 2 – +12V (Power) normally red. Pin#5 at the ICT connector
- 3 – GND (Power) normally orange. Pin# 9 at the ICT connector
- 4 – Credit relay (N.O) normally blue. Pin# 7 at the ICT connector

11. Spare parts and equipment

- leveling legs 4 pieces
- punching bag pump 1 piece
- bladder 1 piece

12. Standard replacement parts

- Front panel bulbs (#73 bulb)
- SELECT GAME button bulb (#161)

- Main power supply (Switching power supply – 12V, 12A - 5V, 5A)
- Halogen bulb (12v 20W, MR11/C (GU4) – 35mm DIA.)

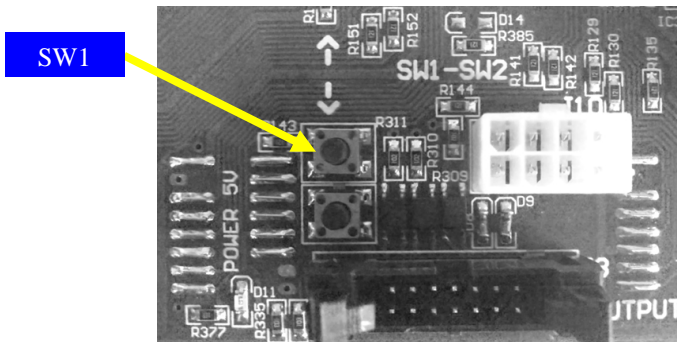
13. Required tools and equipment for servicing the boxing game

- Metric wrench set from 8mm to 19mm (preferably with ratchet)
- Long Allen wrench from 8mm to 19mm
- Snap ring pliers for inside diameters
- Phillips and flat screwdrivers
- Glue gun
- Volt meter
- Bag inflator (supplied with the machine)
- Pliers
- Wire stripper
- Hook and loop (Velcro) stripes
- Plastic wire ties

14. Step by step setup and maintenance instructions

HOW TO ACCESS QUICKLY RESETABLE (P01) AND NOT RESETABLE (P02) MONEY COUNTERS

P01 and P02 counters can be checked (at the same time) without going into service program, by pressing switch SW1 ↑. The SW1 switch is located in the lower left part of the main board, right above ribbon cable connecting main board with side power supply (small board). The displayed numbers will appear for 30 seconds. During that time counter P01 can be reset by pressing and holding switch SW1 for 3 seconds (after resetting machine will switch to regular work mode).



HOW TO ACCESS QUICKLY RESETABLE (P01) MONEY COUNTER (without opening the machine):

P01 counter can be displayed without using service functions or opening the back doors by pressing and holding START and GAME (SELECT) buttons in the same time for 5 seconds. The P01 counter will be appear for 15 seconds.

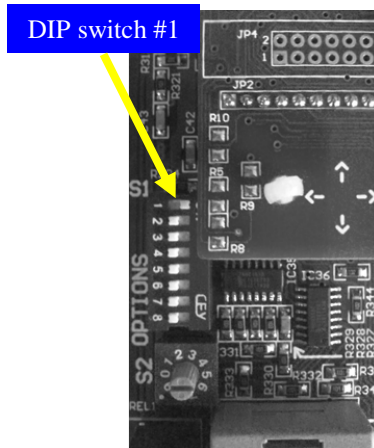
HOW TO TEST COIN OR BILL ACCEPTOR

The test of bill and coin acceptor can be done without changing the meter reading by pressing and holding START and GAME

(SELECT) buttons in the same time for 5 seconds. On the main display P01 will appear. At that time bills and coins can be inserted for a test. After inserting every single coin (bill) testing time will be extend for another 15 seconds. If the testing mode is not used for 15 seconds, machine will switch to regular working mode.

HOW TO SET-UP PRICE OF THE GAME PLAY.

Enter the settings mode by powering up the machine and switching DIP switch #1 to ON position.

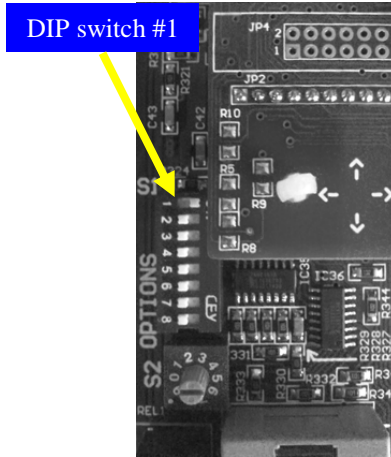


The main display should now indicate the settings mode with 'P 1' as shown.



HOW TO SET UP BONUS POINTS

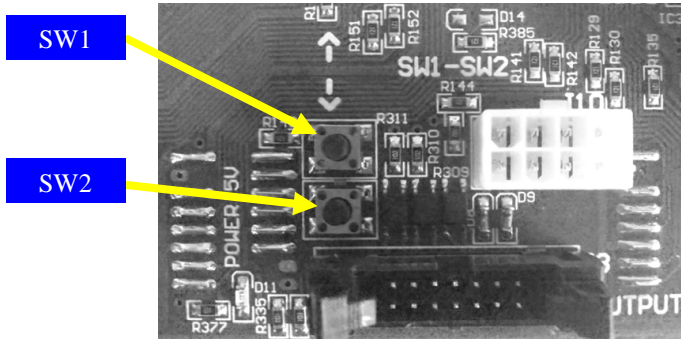
Enter the settings mode by powering up the machine and switching DIP switch #1 to ON position.



The main display should now indicate the settings mode with 'P 1' as shown.



Press the **SW1** button repeatedly on the main board until the main display reads 'P 5'. If you get too far on this menu you can always get back with the **SW2** button.



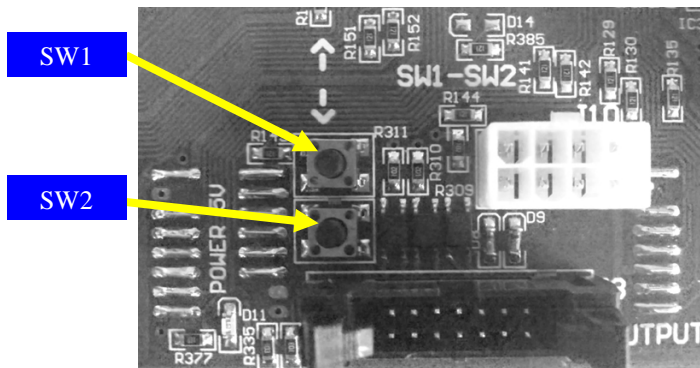
This setting corresponds to the number of credits given when a set dollar amount is put in the machine. For example: you want to set 8 credits (punches) for \$5 ($5 \times 4 = 20$ quarters), you should adjust this setting to indicate 20-8 as shown.



The values can be set using **START** and **GAME** buttons. As shown, **START** sets the left value and **GAME** sets the right value. Repeat the procedure for 'P 6' but remember to set the bonus for a larger amount of money than in 'P 5'. Example could be for \$10, 20 credits ($10 \times 4 = 40$, so the setting is 40-20). If you get too far while increasing these values you must continue going up to 100 before you again end up at single 0.

To leave the settings mode simply turn the DIP switch #1 to off (left) position. The machine should reset and be ready to go.

Press the **SW1** button repeatedly on the main board until the main display reads '**P43**'. If you get too far on this menu you can always get back with the **SW2** button.



Use the **START** and **GAME** buttons to adjust the value of the magic number as desired. The picture below illustrates the magic number setting for this case.

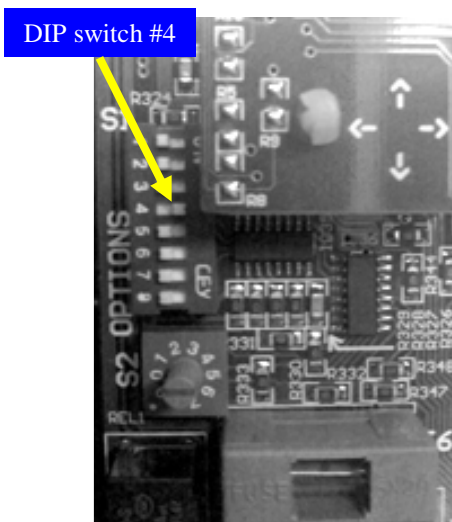


To leave the settings mode simply turn the DIP switch #1 to off (left) position. The machine should reset and be ready to go.

To set the second magic number follow the same steps but choose P55 instead of P43.

HOW TO RESET HIGH SCORES MANUALLY

If you feel the score on the game reached an unbeatable number, you can reset this score to the default value (see setting P30). Enter the reset mode by powering up the machine and switching DIP switch #4 to **ON** position.

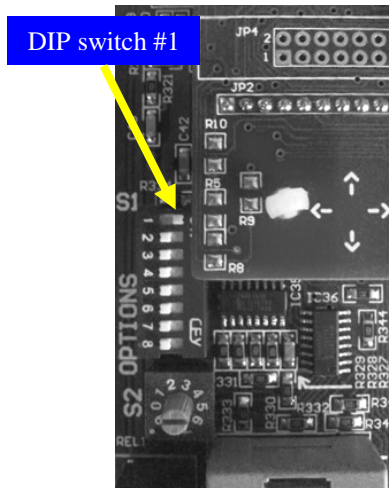


You will not see any changes on the display and the game will remain in playable mode. This is why it is important to remember to switch the machine back from this mode when done resetting. Next, press and hold the **START** button on the machine for about 10 seconds. When the score resets on the main display then release the **START** button and put DIP switch #4 back to **OFF** position.

HOW TO RESET HIGH SCORES AUTOMATICALLY

If you want the machine to automatically reset the highest score (of Power Mode) so that it does not get too high, follow the instructions below. The highest score will be reset to the value programmed in setting P30 (see setting P30).

Enter the settings mode by powering up the machine and switching DIP switch #1 (on the main board) to ON position.



The main display should now indicate the settings mode with **'P 1'** as shown.



Press the **SW1** button repeatedly on the main board until the main display reads '**P86**'. If you get too far on this menu you can always get back with the **SW2** button.

Using **START** button on the front of the machine set number of hours (counted from the last resetting) after which the highest score should be reset automatically, eg. set 120.



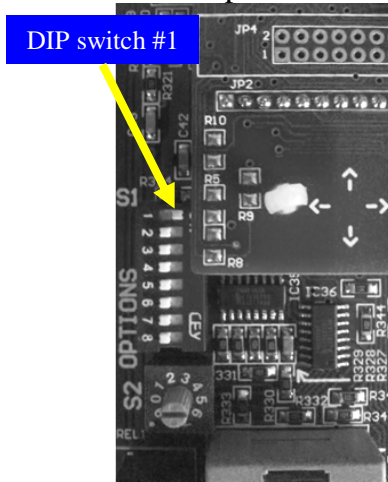
Then press the **SW1** button once - the main display should read '**P87**'. Using **START** button on the front of the machine set number of minutes (counted when machine is in idle state after the time set in P86 above has already passed) after which the highest score will be reset, eg. 15. Put dip switch #1 back to OFF.



SUMMARY: With above settings the machine will count 120 hours from the last resetting (either manual or automatic), and then, if machine is in idle state for more than 15 minutes the highest score will be reset.

HOW TO ERASE CREDITS

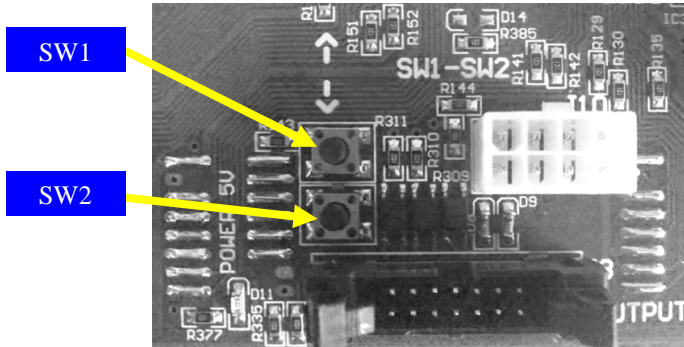
Erasing the game's credits can be done with the following procedure. Enter the settings mode by powering up the machine and switching DIP switch #1 to ON position.



The main display should now indicate the settings mode with 'P1' as shown.



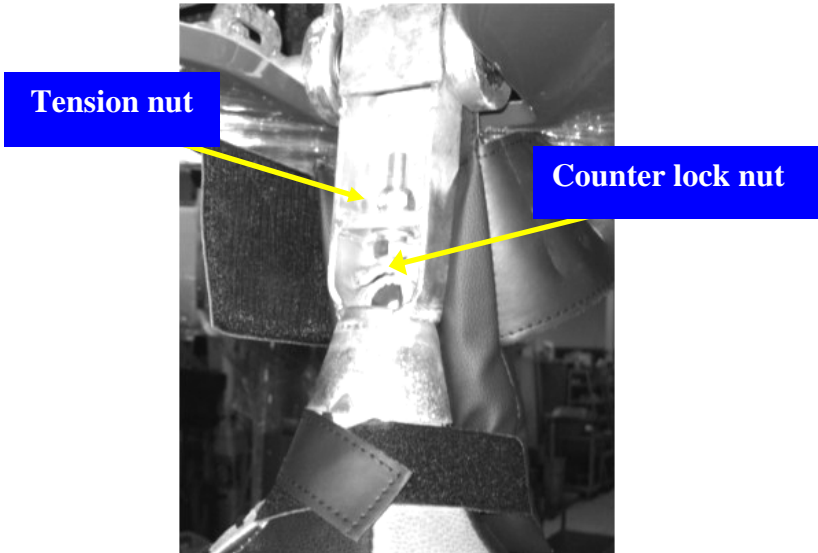
Press the **SW1** button repeatedly on the main board until the main display reads 'P20'. If you get too far on this menu you can always get back with the **SW2** button.



Press the **START** button located in the front of the game. When finished don't forget to set DIP switch #1 back to OFF position.

HOW TO CHANGE THE PUNCHING BAG

Changing the punching bag is required in some cases. Lower the bag arm as in the play mode and ready to punch. Take off the front guard and unscrew the top nut using 19 mm wrench (use wrench with a ratchet). This will release the bag assembly.



To install a new bag first make sure that the tension nut is taken off and the second nut is screwed all the way on the bolt. Otherwise the second bolt will prevent the bag from properly tightening of the assembly. Insert the bag in its place, replace the tension nut and tighten it until the bag cannot be twisted by manual tests. To test this, grab the bag in your arm and simply use your body's weight to try to twist the bag on the bolt's axis.



If it is secured tight enough, then finish by unscrewing the second nut until it tightens on the metal arm.

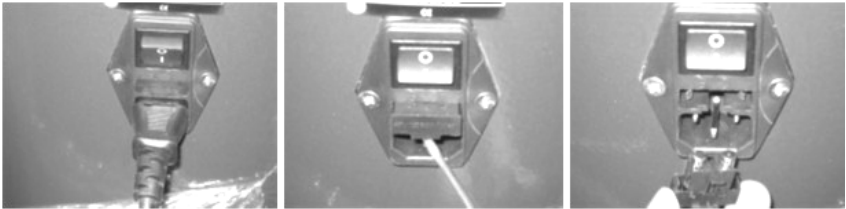
HOW TO RELEASE THE PUNCHING BAG MANUALLY

Sometimes it is necessary to release the punching bag when the machine has no power. This can still be done manually. You must reach over the bag and find the mechanical hammer holding the entire arm in position. Then using your thumb press the hammer which is under compression by a spring behind it and the bag should be free to come down.



HOW TO CHANGE THE FUSE IN THE MAIN SWITCH

Locate the power cord connection on the back of the machine. The fuse can be found hidden between the power cord socket and the main ON/OFF switch. In order to replace it use a flat screwdriver to pry open the fuse holder and pull it out.

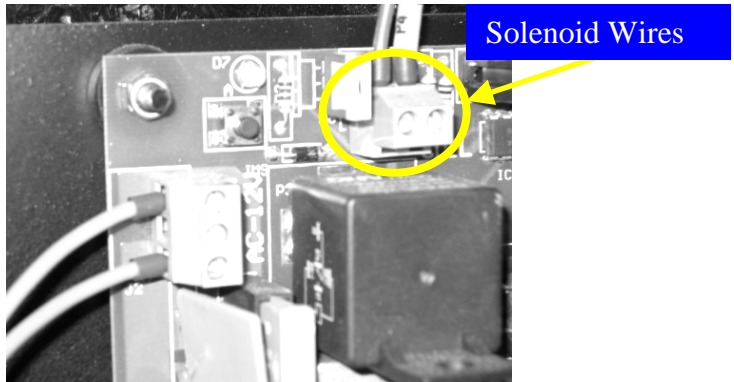


HOW TO CHECK THE SOLENOID

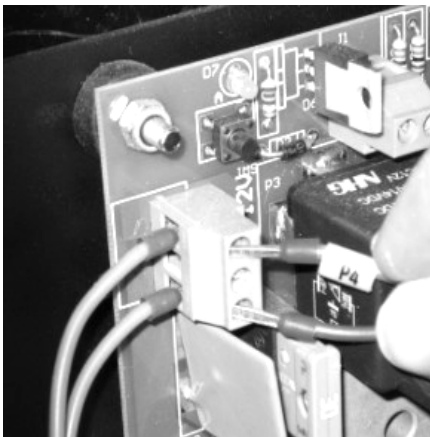
Proper operation of the solenoid can be verified by releasing the punching bag electronically. This can be done by pushing a release button located on the side power supply (not the main board). Power up the machine and press this button. If the bag is released the solenoid is working.



If the bag does not come down there may be a problem with the solenoid. Remove the two solenoid wires connected to the power supply circuit board. Unscrew the two terminals and pull these wires out.



Check resistance on these two terminals with a multi-meter. The resistance should be very low around 0.5Ω . If your meter shows overload or infinite resistance the solenoid coil may be damaged. In that case replacing the solenoid is necessary.



The solenoid can be evaluated in another way if for example you do not have a multi-meter handy. This also involves unscrewing the two terminals and pulling out the two wires. Instead of measuring the resistance as described above make a temporary connection with direct 12 V supply by touching the two wires onto the input voltage terminal as shown in the picture.

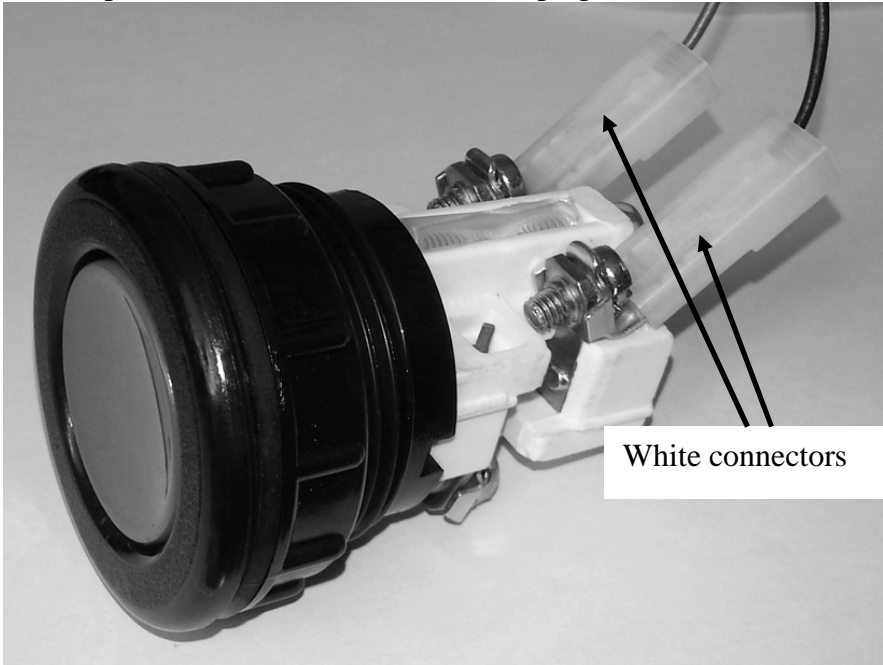
HOW TO CHANGE START BUTTON

There are two types of START buttons: standard and illuminated. This short guide shows how to connect either type.

STANDARD START BUTTON

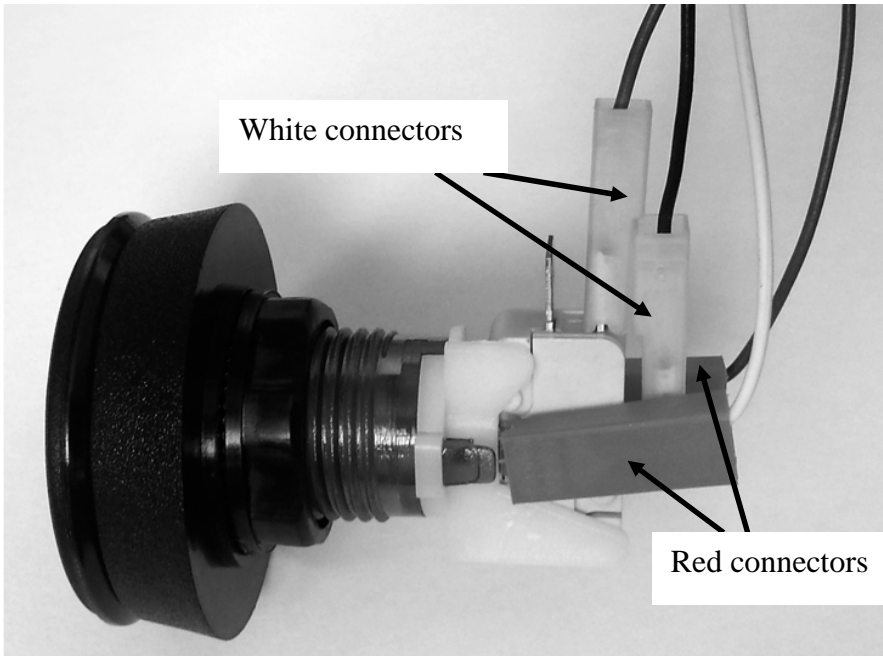
The standard button is connected only with the white connectors, the red ones are not used.

See the photo below which illustrates the proper connection.



ILLUMINATED START BUTTON

The illuminated START button is connected with both, the white and the red connectors. The red connectors are stick on the sides, while the whites are on the back and upper side of the button. See the photo below for the proper connection.



The red connectors are for the lights, the white connectors are for the button itself.

Replacement procedure.

Unscrew the button (its nut). Unlock the white part of the button (illuminated version only). Disconnect all wires. Pull out the button from the assembly hole. Replace with the new button using the above instructions.

MAIN BOARD SETTINGS

P1		P31		P61	
P2		P32		P62	
P3		P33		P63	
P4		P34		P64	
P5		P35		P65	
P6		P36		P66	
P7		P37		P67	
P8		P38		P68	
P9		P39		P69	
P10		P40		P70	
P11		P41		P71	
P12		P42		P72	
P13		P43		P73	
P14		P44		P74	
P15		P45		P75	
P16		P46		P76	
P17		P47		P77	
P18		P48		P78	
P19		P49		P79	
P20		P50		P80	
P21		P51		P81	
P22		P52		P82	
P23		P53		P83	
P24		P54		P84	
P25		P55		P85	
P26		P56		P86	
P27		P57		P87	
P28		P58		P88	
P29		P59		P89	
P30		P60		P90	

MAIN BOARD SETTINGS

P91					
P92					
P93					
P94					
P95					
P96					
P97					
P98					
P99					
P100					
P101					
P102					
P103					
P104					
P105					
P106					
P107					
P108					
P109					
P110					
P111					
P112					
P113					
P114					
P115					
P116					
P117					
P118					

MAINTENANCE LOG	Date of Service					
	Punching bag condition					
	Punching bag pressure					
	Arm protector condition					
	Arm protector position					
	Legibility of disclaimer					
	Legibility of instruction					
	Level of machine					
	Grease on mechanism					
	Bulbs					
	Buttons					
	Bill and coin validators					
	Safe condition (Yes/No)					
	SERIAL NO	If not working or condition not safe for use what was replaced				
Comments						
Signature						

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