



# OPERATOR'S MANUAL

## SPEED OF LIGHT



### PLEASE NOTE:

- ▶ Read this manual **BEFORE** operating the machine.
- ▶ Keep this manual for your reference.
- ▶ Go to [www.LAIGames.com](http://www.LAIGames.com) click on Support to register your games and receive of future updates.



# LAI Games

Correspondence regarding this machine should be addressed to your closest **LAI Games** office, or **LAI Games** Distributor. For contact details, refer to the back page of this manual.

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**LAI Games**

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## LAI Games Notes

*Dear Customer,*

*Keep up to date with new software updates or Service Bulletins for this game.*

*Check our Website at [www.laigames.com](http://www.laigames.com) and click on Support, here you will find links to all the Bulletins and Software Updates to keep your game in top working order.*

*Thanks,*





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## SAFETY PRECAUTIONS

The following safety precautions and advisories are used throughout this manual and are defined as follows.

**\* WARNING! \***

*Disregarding this text could result in serious injury.*

**\* CAUTION! \***

*Disregarding this text could result in damage to the machine.*

**\* NOTE! \***

*Is an advisory text to hint or help understand .*



### BE SURE TO READ THE FOLLOWING



**\* WARNING! \***

***Always** turn **OFF** Mains AC power and unplugged the game, before opening or replacing any parts.*

***Always** when unplugging the game from an electrical outlet, grasp the plug, not the line cord.*

***Always** connect the Game Cabinet to grounded electrical outlet with a securely connected ground line.*

***Do Not** installs the Game Cabinet outdoors or in areas of high humidity, direct water contact, dust, high heat or extreme cold.*

***Do Not** installs the Game Cabinet in areas that would present an obstacle in case of an emergency, i.e. near fire equipment or emergency exits.*

**\* CAUTION! \***

***Always** use a Digital Multimeter, logic tester or oscilloscope for testing integrated circuit (IC) logic PC boards. The use of a continuity tester is not permitted.*

***Do Not** Connect or disconnect any of the integrated circuit (IC) logic PC boards while the power is **ON**.*

***Do Not** uses any fuse that does not meet the specified rating.*

***Do Not** Subject the game cabinet to extreme temperature variations. Reliability of electrical components deteriorates rapidly over 60 °C.*



## **MACHINE INSTALLATION and INSPECTION**

When installing and inspecting “**Speed of Light**”, be very careful of the following points and pay attention to ensure that the players can enjoy the game safely.

- Be sure to turn the power **OFF** before working on the machine.

**\* WARNING! \***

**Always** Turn **OFF** mains power before removing safety covers and refit all safety covers when work is completed.

- Make sure the power cord is not exposed on the surface (floor, ground, etc.) where people walk.
- Check that the rubber glide feet levelers are set correctly on the floor so that the game cabinet is level and stable.
- Always make complete connections for the integrated circuit (IC) logic PC Boards and other connectors. Insufficient insertion can damage the electrical components.

**\* CAUTION! \***

**Before** Switching the machine on be sure to check that it has been set on the correct voltage for your area!

**Refer** To the mains voltage adjustment section of this manual. Machines are normally shipped on 220V AC unless otherwise specified.

- Only qualified personnel should inspect or test the integrated circuit (IC) logic PC Boards.
- If any integrated circuit (IC) logic PC Boards should need servicing. Please contact the nearest **LAI Games** Distributor. (Refer to the back page of this manual)



## INTRODUCTION

**CONGRATULATIONS!** On your purchase of “**Speed of Light**”, interactive game that will challenge player to move hands fast to try to turn off the illuminated light on the buttons as many as they can the many buttons pressed that much ticket they will get it is another great product from **LAI GAMES**.

We hope you take the time to read this manual and learn about the many other features and user-friendly adjustments that can be made to “fine-tune” the game for maximum earning potential.

### DESCRIPTION

- The “*Speed of Light*” is.

### PACKAGING

- At delivery, the machine should arrive in good condition. To move the packaged machine for transport or placement, use a forklift and take care not to hit the package or stack heavy objects on top, as this may cause damage to the machine.

### CONTENTS

- The “*Speed of Light*” cabinet
- Keys:        2 x coin door keys  
                  2 x back door keys  
                  2 x ticket door key
- Operator’s manual
- IEC Power Cord            (In cash box)
- Parts & Accessories        (In cash box)



## SPECIFICATIONS

### DIMENSIONS

- Weight: 240 kg ( 529 lb)
- Height: 1870 mm (73.6")
- Width: 2000 mm (78.7")
- Length: 1640 mm (65")
- Power: Maximum 228 W – (220V @1.4 A)(120V @ 2.8A)

### ELECTRIC SUPPLY

The game has the option to operate on an 110V, 120V, 220V or 240V AC 50/60Hz single phase mains electric supply.

**The supply must be a three wire grounded supply.**

**\* CAUTION! \***

***Before switching the machine on be sure to check that it has been set on the correct voltage for your area!***

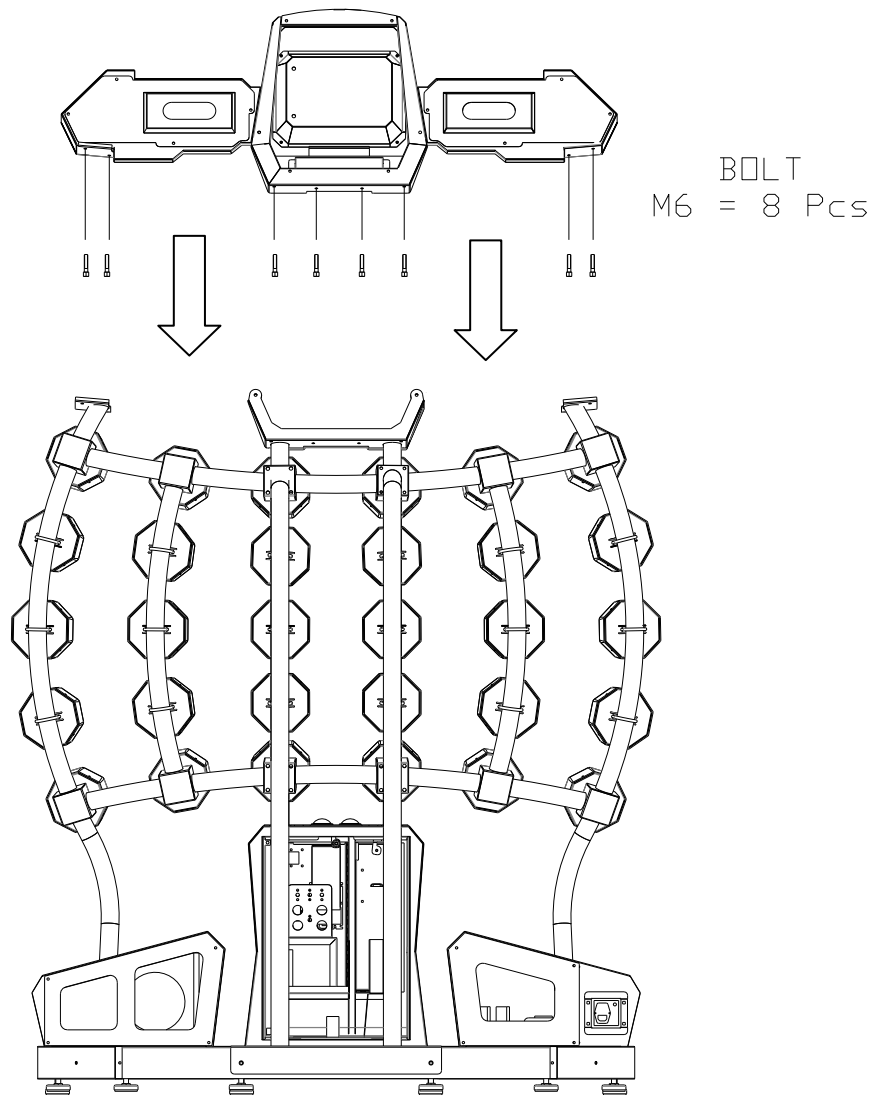
***Please Refer to the mains voltage adjustment section of this manual. Machines are normally shipped on 220V AC unless otherwise specified.***

### LOCATION REQUIREMENTS

- Ambient temperature: between 5oC and 40oC.
- Ambient humidity: Low
- Ambient U.V. radiation: Very low
- Vibrations level: Low



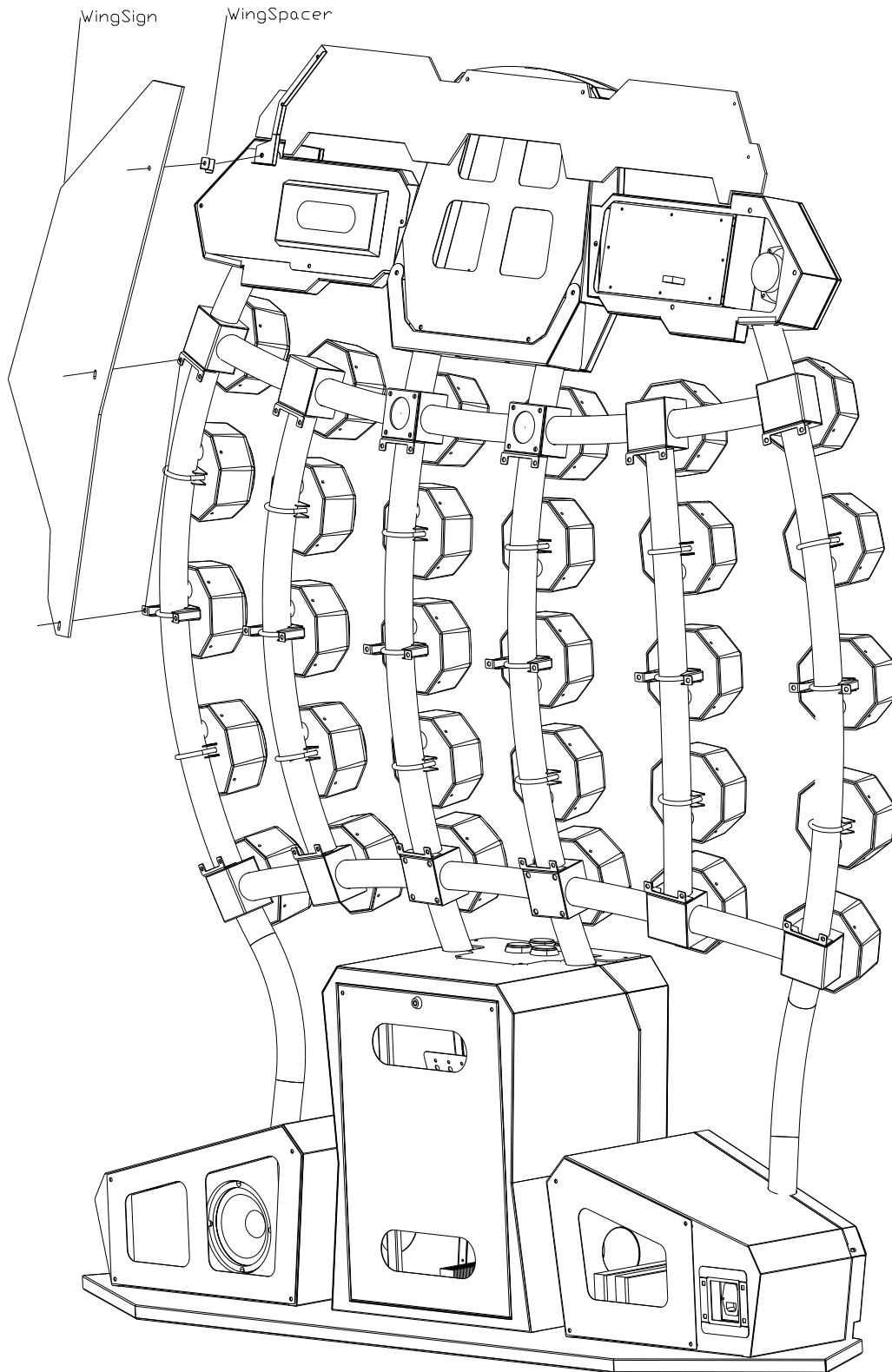
## ASSEMBLY THE HEADER



Position the header on top and secure with the 8 hex Bolt supplied, make sure to connect the speaker and LED connector from inside of the header.

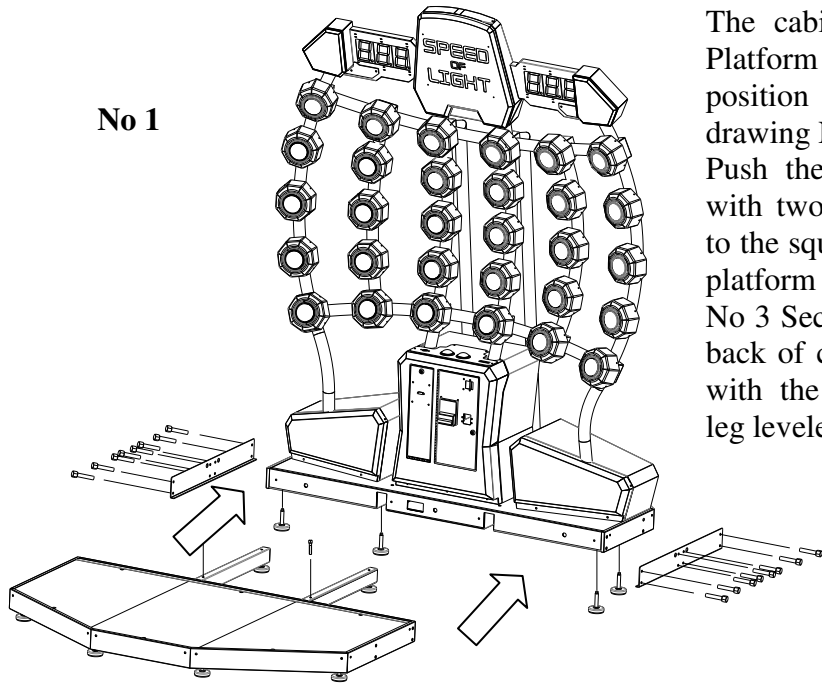


# ASSEMBLY THE WING SIGN

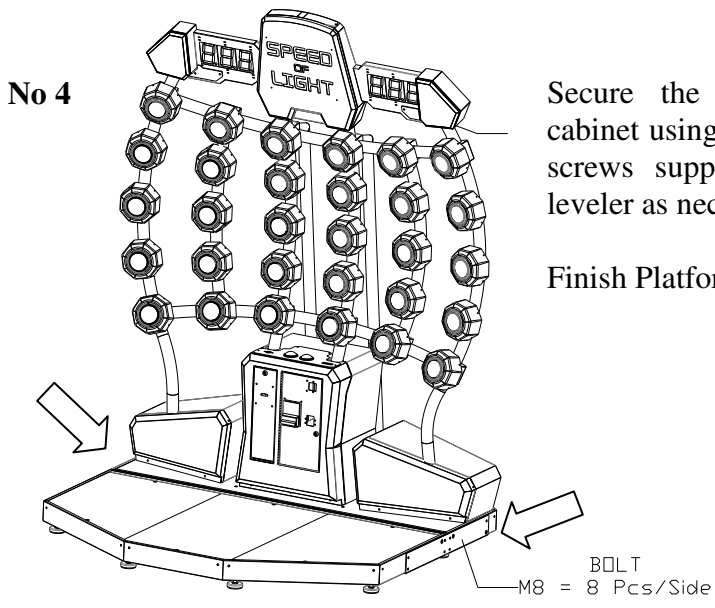
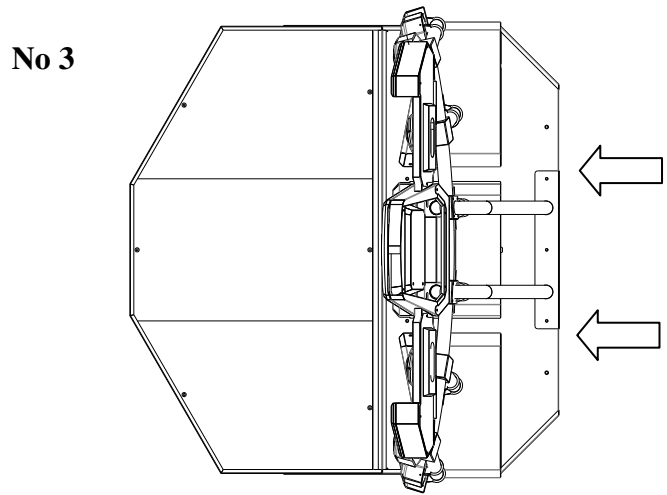
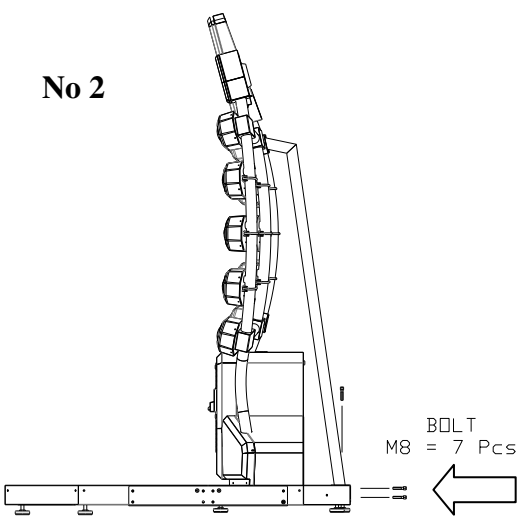




# ASSEMBLY THE PLATFORM



The cabinet will arrive with the Platform folded with the cabinet; position the Platform as per drawing No 1. Push the platform to the cabinet with two metal bar in front insert to the square hole on the base until platform fully inserted No 2 and No 3 Secure the Platform from the back of cabinet first then continue with the other screw. Adjust the leg leveler as necessary.



Secure the Platform with the cabinet using the side bracket and screws supplied, adjust the leg leveler as necessary.

Finish Platform installation



## **HOW TO PLAY**

### **PLAYERS AIM TO TURN OFF THE LIGHT BY PRESSING THE BUTTON AS MUCH AS THEY CAN**

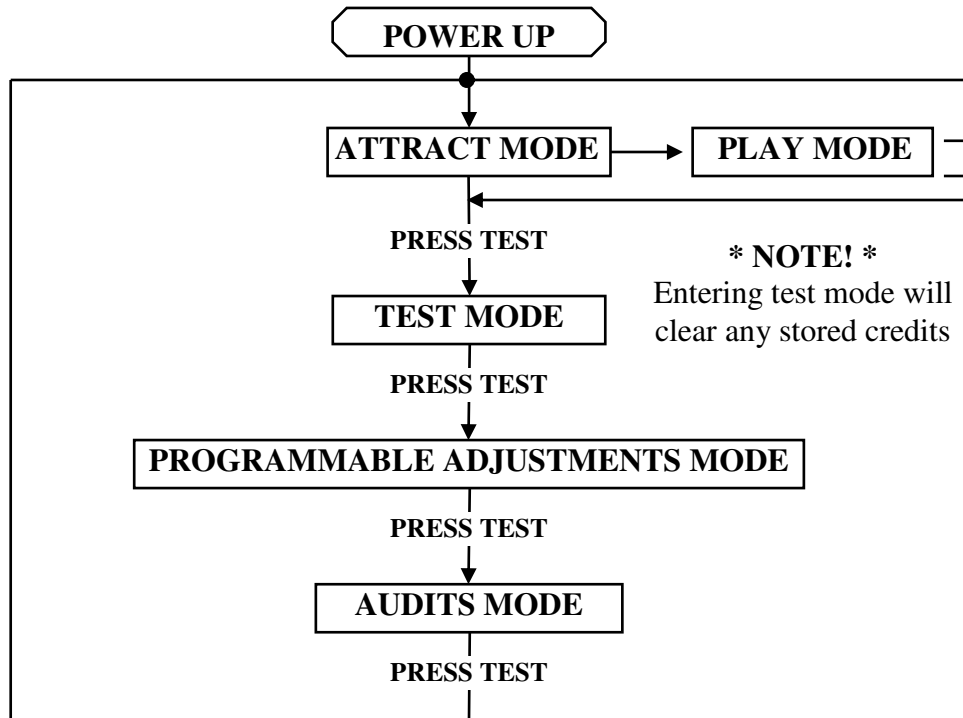
- Pay to play.
- Press the start button to play.
- Press the illuminate button to get the point.
- Try to press as many buttons to get the big point in given time.
- The higher the point will get as many tickets.
- Challenge the bonus round to make the point higher and beat the bonus point.



# OPERATION

The “Speed of Light” game has five operational modes: Attract mode, Play mode, Test mode, Programmable Adjustments Mode and Audits Mode.

## OPERATIONAL DIAGRAM



### ATTRACT MODE

- The Attract mode provides a light and sound display, while the game is not being played. This feature is to attract potential customers to play the game. The attract mode sound can be turned on and off  
(Refer to programmable adjustment page of this manual).

### PLAY MODE

- The “Speed of Light” has two play modes. The Standard Coin Play mode, where a coin, or coins are inserted. Or Free Play where no coins are necessary.

### COIN PLAY

- The Coin Play mode is entered from Attract mode, by inserting coins in any of the two coin slots on the front of the machine cabinet, then following the instructions in the “How to Play” section of this manual.

### FREE PLAY

- The free play mode is entered from attract mode by holding the Service button for longer than five second, **EE|EE** will be displayed on the 4-digit LED display.
- For a single free game, just press the Service button once. When issuing single free games in this manner, Prizes can be won as normal.



## TEST MODE

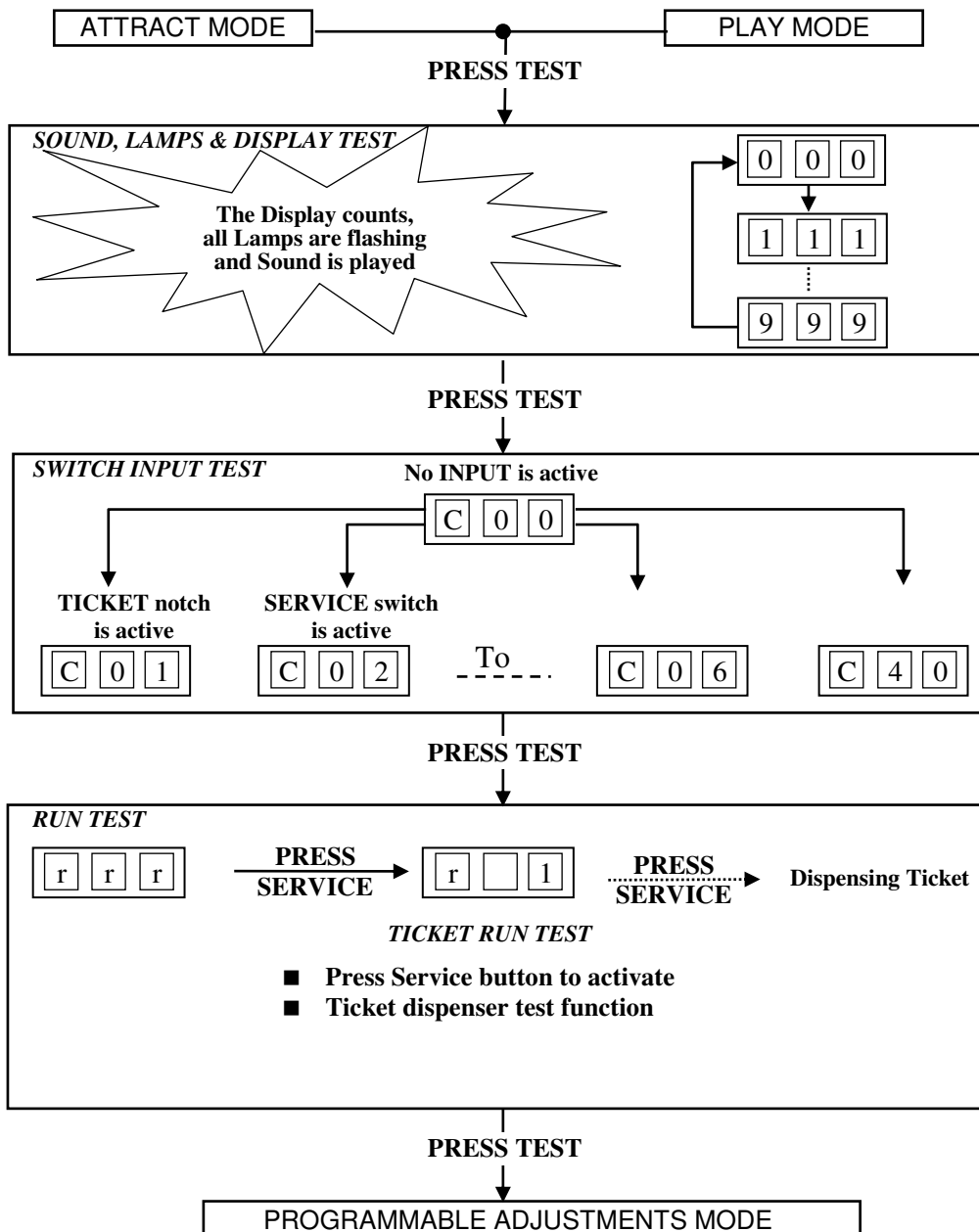
The “Speed of Light” Test mode has Three Test Configurations allowing you to explore the functioning of the Sound, Light & Display, and the Game Switches and to allow an operational test. (Refer to the Test Mode Diagram below).

The Test mode is also used for Clearing Game Errors. If there is an active error, its code will be displayed. To try to clear the error code, press the red test button once. The error can be bypass by quickly pressing the red test button twice.

**\* NOTE! \***

- Entering Test Mode will CLEAR any CREDITS remaining in the game.
- If during test mode no ADJUSTMENTS or actions are made to the game for approximately four minutes, it will automatically RETURN to Attract Mode.

### TEST MODE DIAGRAM





## SOUND, LAMPS & DISPLAY TEST

- **ENTER** The Sound, Lamp & Display test is entered from Attract mode by pressing the test button once.

**\* NOTE! \***

- If there is an active error displayed, press the red test button once to try and clear the error.
- If the error code will not clear, it can be bypass by quickly pressing the red test button twice.

### **DURING THE TEST:**

- Game music and a voice over will be played.
  - The Credit display will count from 0000 to 9999 and then repeat.
  - The LED Playfield Display panel will run a test pattern sequence.
  - The Continue, Start/Stop and Select button lamps will flash on and off
- **EXIT** The Sound, Lamp & Display test is exited by pressing the test button. The next test will be switch test.

## SWITCH TEST

- **ENTER** The Switch Test can be entered by pressing the Test button once while in the Sound, Light & display test or by pressing the Test button twice while in Attract mode, **C-XX** will be displayed on the 4-digit display where 'XX' is a number representing the switch that is active.

### ■ TESTING THE GAME SWITCHES

All game switches have a code from C1 to C10 as tabled below. By activating any of the switches, their code will be displayed on the 4-digit display. If there is no switches are active then **C-00** will be displayed.

CODE	DISPLAY	SWITCH FUNCTION	SWITCH LOCATION
C0	<b>C-00</b>	No Switch Active	-
C1	<b>C-01</b>	Ticket Notch 1 Active	Ticket Door (if fitted)
C2	<b>C-02</b>	Service Switch Active	Service Panel
C3	<b>C-03</b>	Start/Stop Button Active	Control Panel
C4	<b>C-04</b>	Coin 1 Switch Active	Coin Door
C5	<b>C-05</b>	Coin 2 Switch Active	Coin Door
C6	<b>C-06</b>	Ticket Notch 2 Active	Ticket Door
C7	<b>C-07</b>	Mode 1 Button	Control Panel
C8	<b>C-08</b>	Mode 2 Button	Control Panel
C9	<b>C-09</b>	Mode 3 Button	Control Panel
C10	<b>C-10</b>	Link Mode	Cabinet Back
C11 – C40		Playfield Button	Playfield

Normal condition for the game is **C-00**, no switches are active.

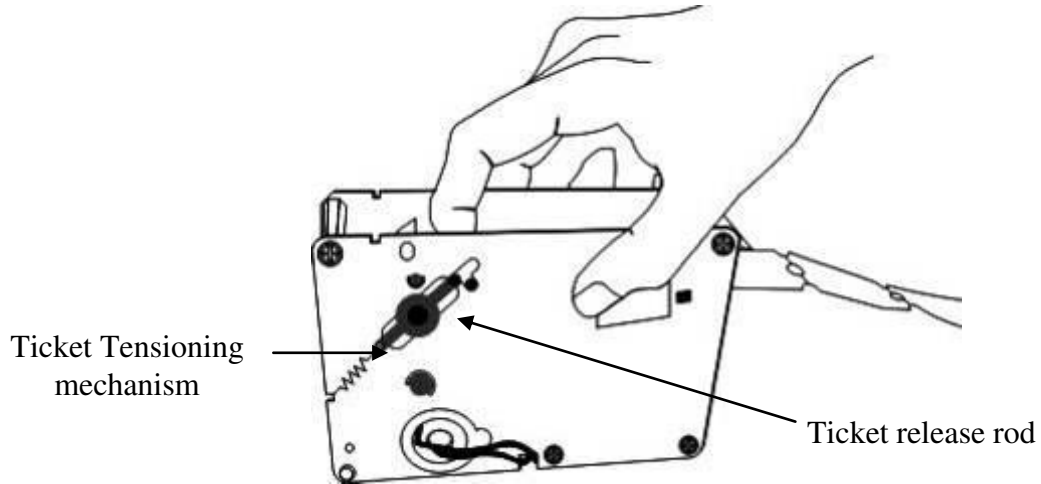
**\* NOTE! \***

- Several switches can be simultaneously activated in Switch test. The display will then consecutively show their codes, indicating which switches are active. However, it is much easier to test the game switches individually.



## ■ TICKET DISPENSER NOTCH

The Ticket Notch Switch (C1) can be activated or deactivated from the Ticket Feed Button on the Ticket Dispenser PCB or by manually pushing the tickets from the ticket holder through the dispenser after pulling the ticket release rod upwards



- **EXIT** The Switch Test is exited into Run Test Mode by pressing the Test Button once.



## PROGRAMMABLE ADJUSTMENTS QUICK REFERENCE TABLE V1.5.2

CODE	PROGRAMMABLE ADJUSTMENTS	OPTIONAL VALUES	DEFAULT SETTINGS	FEATURES
P01	1 – 20	1, 2, 3...20, Free	<b>1</b>	Coin 1 – Coins / Credit
P02	1 – 10	1, 2, 3...10	<b>1</b>	Coin 1 – Games / Credit
P03	ON or OFF	ON or OFF	<b>OFF</b>	Activate Multiple Bonus Pricing Coin slot 1
P03-1	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 1 Number Coins for Bonus Pricing level 1
P03-2	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin1 Number of bonus credits on Pricing level 1
P03-3	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin1 Number Coins for Bonus Pricing level 2
P03-4	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 1 Number of bonus credits on Pricing level 2
P03-5	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 1 Number Coins for Bonus Pricing level 3
P03-6	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 1 Number of bonus credits on Pricing level 3
P04	1 – 20	1, 2, 3...20	<b>1</b>	Coin 2 – Coins / Credit
P05	1 – 10	1, 2, 3...10	<b>1</b>	Coin 2 – Games / Credit
P06	ON or OFF	ON or OFF	<b>OFF</b>	Activate Multiple Bonus Pricing Coin slot 2
P06-1	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 2 Number Coins for Bonus Pricing level 1
P06-2	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 2 Number of bonus credits on Pricing level 1
P06-3	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 2 Number Coins for Bonus Pricing level 2
P06-4	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 2 Number of bonus credits on Pricing level 2
P06-5	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 2 Number Coins for Bonus Pricing level 3
P06-6	OFF – 99	OFF,1,2,3,4...99	<b>OFF</b>	Coin 2 Number of bonus credits on Pricing level 3
P07	ON or OFF	ON or OFF	<b>ON</b>	Attract Mode Sound
P08	0 – 2	0,1, 2	<b>2</b>	Beat the High Score Bonus Type
P09	1 – 10(Credit) 1 – 100 (Tickets)	1, 2, 3,...10 Credit 1,2,3,...20 Tickets	<b>20 Tickets</b>	Number of Bonus For Beat High Score
P10	0 – 2	0,1, 2	<b>2</b>	High Score 999 Bonus Type
P11	1 – 10(Credit) 1 – 100 (Tickets)	1, 2, 3,...10 Credit 1,2,3,...20 Tickets	<b>50 Tickets</b>	Number of Bonus to reach High Score 999
P12	1 – 100	1,2,3,...100	<b>20</b>	Number of points per Tickets
P13	0 – 10	1,2,3,...10	<b>8</b>	Number Of Minimum Tickets
P14	No Max, 5 – 100	No, 5, 6, 7...50, 55 ...100	<b>0 (No)</b>	Number Of Maximum Tickets
P15	ON or OFF	ON or OFF	<b>OFF</b>	Dispense Ticket in Free Mode
P16	10 – 500	10,15,...100,110,..500	<b>500</b>	Default high Score adjustment
P17	10 – 999	10,15,...100,110,..999	<b>500</b>	Current High Score Adjustment
P18	ON or OFF	ON or OFF	<b>ON</b>	Retain High Score Value
P19	No, Tic, Cap	No, Tic, Cap	<b>Tic</b>	Dispense Type Option
P20	0 – 2	0,1,2	<b>0</b>	Game link type
P21	1 - 4	1,2,3,4	<b>1</b>	Error Message Option
P22	ON or OFF	ON or OFF	<b>ON</b>	Common Coin Option
P23	ON or OFF	ON or OFF	<b>OFF</b>	Double Player – one credit
P24	On or OFF	ON or OFF	<b>OFF</b>	Card System
P25	OFF,1 – 4	OFF,1,2,3,4	<b>OFF</b>	Competition Mode

**PROGRAMMABLE ADJUSTMENTS DETAILED****■ P01 = COIN 1: NUMBER of COINS PER CREDIT**

(Default 01) (Adjustable 1 – 20, Free)

This sets the number of coins that need to be inserted into coin mechanism one, for each credit. It can be set between 1 to 20 coins for one credit. The default setting is 1. Setting this to “Free” enables free play mode. This stays active when the machine is switched on and off.

**■ P02 = COIN 1: NUMBER of GAME PLAYS PER CREDIT**

(Default 01) (Adjustable 1 – 20)

This sets the number of games for each credit inserted into coin mechanism 1. It can be set between 1 to 20 plays for each credit. The *default* setting is “1”.

**■ P03 = COIN 1: ACTIVATE MULTIPLE BONUS PRICING**

(Default OFF) (Adjustable ON – OFF)

**Note: Settings P 03 and P 03-1 thru to P03-6 are only used for the setting of Bonus credit levels e.g. \$0.50c/1 play, \$1/3plays, \$2/7plays, \$5/20 plays**

This turns on the multiple bonus credit system and activates the settings for up to 3 bonus levels on coin mechanism 1. It can be set to ON or OFF. The *default* setting is “OFF” this mean the multiple bonuses is disabled, if the setting is changed to ON the multiple bonus setting will be active and open the next sub-menu **P03-1** and so on.

**■ P03 - 1 = COIN 1: NUMBER of COINS REQUIRED TO REACH BONUS CREDIT LEVEL 1**

(Default OFF) (Adjustable OFF – 99)

This sets the number of coins (or Bill Acceptor pulses) that need to be inserted into coin mechanism 1 to reach the bonus credit level 1. It can be set to either OFF for no bonus or 1 to 99 coins, (OFF=No bonus), the *default* setting is “OFF” this means that the **P03-2** will not open

Examples	(Base price \$0.25c)	(Base Price \$0.50c)	(Base Price \$0.50c)	(Base Price \$1.00)
P Setting Adjustment	1 play <b>\$ 0.25c</b> 3 plays <b>\$ 0.50c</b> 7 plays <b>\$ 1.00</b> (\$0.25c coins or DBA set on \$0.25c pulses)	1 play <b>\$ 0.50c</b> 3 plays <b>\$ 1.00</b> 7 plays <b>\$ 2.00</b> (\$0.25c coins or DBA set on \$0.25c pulses)	1 play <b>\$ 0.50c</b> 3 plays <b>\$ 1.00</b> 8 plays <b>\$ 2.00</b> 22 plays <b>\$ 5.00</b> (\$0.25c coins or DBA set on \$0.25c pulses)	1 play <b>\$ 1.00</b> 3 plays <b>\$ 2.00</b> 8 plays <b>\$ 5.00</b> 18 plays <b>\$ 10.00</b> (\$0.25c coins or DBA set on \$0.25c pulses)
P01 / P04	1	2	2	4
P02 / P05	1	1	1	1
P03 / P06	ON	ON	ON	ON
P3-1 / P6-1	2	4	4	8
P3-2 / P6-2	1	1	1	1
P3-3 / P6-3	4	8	8	20
P3-4 / P6-4	3	3	4	3
P3-5 / P6-5	OFF	OFF	20	40
P3-6 / P6-6	OFF	OFF	12	8



■ **P03 - 2 = COIN 1: NUMBER of BONUS CREDITS GIVEN AT BONUS LEVEL 1**

(Default OFF) (Adjustable OFF – 99)

This sets the number of bonus credits that are given when credit Level 1 is reached. This Bonus amount is the **additional** number of credits required above the **base price**. It can be set to either OFF, or between 1 to 99 bonus credits; the *default* setting is “OFF” this mean that the **P03-3** will not open.

**Note:** The **Base Price** is the normal price setting for one game.

**e.g.** If the game is set for \$0.25c/1play then the base price is \$0.25c, if the game is set for \$0.50c/1play then the base price is \$0.50c, if the game is set for \$1.00/1play then the base price is \$1.00.

■ **P03 - 3= COIN 1: NUMBER of COINS REQUIRED TO REACH BONUS CREDIT LEVEL 2**

(Default OFF) (Adjustable OFF – 99)

This sets the number of coins (or Bill Acceptor pulses) that is needed to be inserted into coin mechanism 1 to reach the bonus credit level 2. It can be set to OFF for no bonus or between 1 to 99 coins, but the setting value must be higher than setting value of **P03-1**, the *default* setting is “OFF” and if set to OFF this means that the **P03-4** will not open.

■ **P03 - 4 = COIN 1: NUMBER of BONUS CREDITS GIVEN AT BONUS LEVEL 2**

(Default OFF) (Adjustable OFF – 99)

This sets the number of bonus credits that are given when credit Level 2 is reached. This Bonus amount is the **additional** number of credits required above the **base price**. It can be set to either OFF, or between 1 to 99 bonus credits; the *default* setting is “OFF” this mean that the **P03-5** will not open.

■ **P03 - 5= COIN 1: NUMBER of COINS REQUIRED TO REACH BONUS CREDIT LEVEL 3**

(Default OFF) (Adjustable OFF – 99)

This sets the number of coins (or Bill Acceptor pulses) that is needed to be inserted into coin mechanism 1 to reach the bonus credit level 3. It can be set to OFF for no bonus or between 1 to 99 coins, but the setting value must be higher than setting value of **P03-3**, the *default* setting is “OFF” and if set to OFF this mean that the **P03-6** will not open.

■ **P03 - 6 = COIN 1: NUMBER of BONUS CREDITS GIVEN AT BONUS LEVEL 3**

(Default OFF) (Adjustable OFF – 99)

This sets the number of bonus credits that are given when credit Level 3 is reached. This Bonus amount is the **additional** number of credits required above the **base price**. It can be set to either OFF, or between 1 to 99 bonus credits; the *default* setting is “OFF”

**■ P04 = COIN 2: NUMBER of COINS PER CREDIT**

(Default 01) (Adjustable 1 – 20)

This sets the number of coins that need to be inserted into coin mechanism 2, for each credit. It can be set between 1 to 20 coins for one credit. The default setting is “1”.

**■ P05 = COIN 2: NUMBER of GAME PLAYS PER CREDIT**

(Default 01) (Adjustable 1 – 20)

This sets the number of games for each credit inserted into coin mechanism 2. It can be set between 1 to 20 plays for each credit. The *default* setting is “1”.

**■ P06 = COIN 2: ACTIVATE MULTIPLE BONUS PRICING**

(Default OFF) (Adjustable ON – OFF)

**Note: Settings P 06 and P 06-1 thru to P06-6 are only used for the setting of Bonus credit levels e.g. \$0.50c/1 play, \$1/3plays, \$2/7plays, \$5/20 plays**

This turns on the multiple bonus credit system and activates the settings for up to 3 bonus levels on coin mechanism 2. It can be set to ON or OFF. The *default* setting is “OFF” this mean the multiple bonuses is disabled, if the setting change to ON the multiple bonus setting will be active and open the next sub-menu **P06-1** and so on.

**■ P06 - 1 = COIN 2: NUMBER of COINS REQUIRED TO REACH BONUS CREDIT LEVEL 1**

(Default OFF) (Adjustable OFF – 99)

This sets the number of coins (or Bill Acceptor pulses) that need to be inserted into coin mechanism 2 to reach the bonus credit level 1. It can be set to either OFF for no bonus or 1 to 99 coins, (OFF=No bonus), the *default* setting is “OFF” this means that the **P06-2** will not open

**■ P06 -2 = COIN 2: NUMBER of BONUS CREDITS GIVEN AT BONUS LEVEL 1**

(Default OFF) (Adjustable OFF – 99)

This sets the number of bonus credits that are given when credit Level 1 is reached. This Bonus amount is the **additional** number of credits required above the **base price**. It can be set to either OFF, or 1 to 99 bonus credits; the *default* setting is “OFF” this mean that the **P06-3** will not open.

**Note:** The **Base Price** is the normal price setting for one game.

**e.g.** If the game is set for \$0.25c/1play then the base price is \$0.25c, if the game is set for \$0.50c/1play then the base price is \$0.50c, if the game is set for \$1.00/1play then the base price is \$1.00,

**■ P06 – 3= COIN 2: NUMBER of COINS REQUIRED TO REACH BONUS CREDIT LEVEL 2**

(Default OFF) (Adjustable OFF – 99)

This sets the number of coins (or Bill Acceptor pulses) that is needed to be inserted into coin mechanism 2 to reach the bonus credit level 2. It can be set to OFF for no bonus or between 1 to 99 coins, but the setting value must be higher than setting value of **P06-1**, the *default* setting is “OFF” and if set to OFF this means that the **P06-4** will not open.



■ **P06 - 4 = COIN 2: NUMBER of BONUS CREDITS GIVEN AT BONUS LEVEL 2**

(Default OFF) (Adjustable OFF – 99)

This sets the number of bonus credits that are given when credit Level 2 is reached. This Bonus amount is the **additional** number of credits required above the **base price**. It can be set to either OFF, or 1 to 99 bonus credits; the *default* setting is “OFF” this mean that the **P06-5** will not open.

■ **P06 – 5 = COIN 2: NUMBER of COINS REQUIRED TO REACH BONUS CREDIT LEVEL 3**

(Default OFF) (Adjustable OFF – 99)

This sets the number of coins (or Bill Acceptor pulses) that is needed to be inserted into coin mechanism 2 to reach the bonus credit level 3. It can be set to OFF for no bonus or between 1 to 99 coins, but the setting value must be higher than setting value of **P06-3**, the *default* setting is “OFF” and if set to OFF this mean that the **P06-6** will not open.

■ **P06 -6 = COIN 2: NUMBER of BONUS CREDITS GIVEN AT BONUS LEVEL 3**

(Default OFF) (Adjustable OFF – 99)

This sets the number of bonus credits that are given when credit Level 3 is reached. This Bonus amount is the **additional** number of credits required above the **base price**. It can be set to either OFF, or 1 to 99 bonus credits; the *default* setting is “OFF”.

■ **P07 = ATTRACT MODE SOUND**

(Default ON) (Adjustable ON or OFF)

This adjustment turns the *attract mode sound* **ON** or **OFF**. This is the sound and music that the game generates to attract customers when it is not being played. The music will cycle approximately every 3 minutes.

■ **P08 = BEAT THE HIGH SCORE BONUS TYPE**

(Default 2) (Adjustable 0 – 2)

This option adjusts *Beat the high score bonus type* paid out.

0. **None**
1. **Free Credit** ( 1 – 10)
2. **Bonus Tickets** (1 – 100)

■ **P09 = NUMBER OF BONUS FOR BEAT HIGH SCORE**

(Default 20 Tickets) (Adjustable (1 – 10 [Credit] and 1 - 20 [Tickets])

This option adjusts the *Number of Bonus for beat the High Score*. Press the P1 Start button to change the value.



■ **P10 = THE HIGH SCORE 999 BONUS TYPE**

(Default 2) (Adjustable 0 – 2)

This option adjusts *The high score 999 bonus type* paid out.

3. **None**
4. **Free Credit** ( 1 – 10)
5. **Bonus Tickets** (1 – 100)

■ **P11 = NUMBER OF BONUS TO REACH HIGH SCORE 999**

(Default 50 Tickets) (Adjustable (1 – 10 [Credit] and 1 - 20 [Tickets]))

This option adjusts the *Number of Bonus The High Score 999*. Press the P1 Start button to change the value.

■ **P12 = NUMBER of POINTS per TICKETS**

(Default 20) (Adjustable 1 – 100)

This sets number of points per Tickets paid out. When sets to 1 means each 1 point ticket will pay out, available value is from 1 – 50 in 1 step and 55 – 100 in 5 steps.

■ **P13 = NUMBER of MINIMUM TICKETS PAID OUT**

(Default 8) (Adjustable 0 – 10)

This sets number of Minimum tickets paid out. When sets to 8 means there will 8 Minimum tickets, available adjustment is 0 – 10.

■ **P14 = NUMBER of MAXIMUM TICKETS PAID OUT**

(Default 0) (Adjustable (0) No, (P13) – 100)

This sets number of Maximum tickets paid out. When sets to(0) No means there will No Maximum tickets, available adjustment is P13 – 50 in 1 step and 55 – 100 in 5 steps.

■ **P15 = DISPENSE TICKET ON FREE MODE**

(Default OFF) (Adjustable ON or OFF)

This sets whether to dispense ticket or not during the free mode game play, when sets to OFF means the machine will not dispense any tickets of game played.

■ **P16 = DEFAULT HIGH SCORE ADJUSTMENT**

(Default 500) (Adjustable 10 - 500)

This option control the Default High Score Adjustment that will be show on the top display, when the machine start up this value will show the value can be change from 10 – 500 tickets, with 10 – 100 in 5 step and 110 – 500 in 10 step.



### ■ **P17 = CURRENT HIGH SCORE ADJUSTMENT**

(Default 500) (Adjustable 10 – 500)

This option control the Current High Score Adjustment that will be show on the top display, when the machine start up this value will show the value can be change from 10 – 500 tickets, with 10 – 100 in 5 step and 110 – 500 in 10 step.

### ■ **P18 = RETAIN HIGH SCORE VALUE**

(Default ON) (Adjustable ON or OFF)

This setting controls whether or not the game displays the last value on the display when the machine switch off, if sets to on this means every last point that shows on the top display will automatically retain when the machine switch on again. When sets to OFF then every time machine switch off and switch on again the top display will show the Super Bonus start value.

### ■ **P19 = DISPENSE TYPE OPTION**

(Default Tic) (Adjustable No, Tic, Cap - 2)

This setting controls whether ticket or capsule will be dispense (if fitted with capsule dispenser), when sets to Tic means this machine will only dispense tickets.

### ■ **P20 = GAME LINK OPTION**

(Default 0) (Adjustable 0 - 2)

This setting controls how the Game link setup,  
 0 = Stand Alone  
 1 = Master  
 2 = Slave

### ■ **P21 = Error Message Option**

(Default 2) (Adjustable 1 - 4)

This adjustment sets the way error messages are handled. The game can play a voice over error, or display the error on the small 4 digit display.

Setting	Voice Over	4 Digit Display
1	Played	Displayed
2	Played	Error will display when test button press and the next test button will try clear the error
3	Not Played	Displayed
4	Not Played	Error will display when test button press and the next test button will try clear the error

### ■ **P22 = COMMON COIN SYSTEM**

(Default OFF) (Adjustable ON or OFF)

This setting controls whether common coin system active or not, when sets to OFF this means both coin is separate or double coin system, when sets to ON this means both coin will be only active as one coin line input.



■ **P23 = DOUBLE PLAYER – ONE CREDIT**

(Default OFF) (Adjustable ON or OFF)

This allows the two-player mode with one credit.

■ **P24 = CARD SYSTEM**

(Default OFF) (Adjustable ON or OFF)

This allows splitting of the coin inputs for 2 player games, allowing the winner of a 2-player game to be credited their winnings. This mode requires two card swipers installed on the game.

■ **P25 = COMPETITION MODE**

(Default OFF) (Adjustable OFF, 1,2,3,4)

This setting allows for adjustment of the bonus ramp for in store competitions. Exceptional players may be able to reach 999 on a regular basis. By adjusting this setting, it can be assured players never reach 999, and thus the winner of a tournament can be established. The settings (1-5) represent the max points per button press. The recommended setting for a competition is 3.





## AUDIT PROCEDURE

- **ENTER** The Audits mode is entered from Programmable Adjustments mode by pressing the Test button once or from Attract mode by pressing the Test button five times. **A A A A** will be displayed on the 4-digit display.
- **SELECT** The green Service button is pressed for advancing each step through the set of audits configurations, starting from the **A A A A** display, A01 being the first step, continuing through to A24, and then looping again from A01 to A24 until the mode is exited.
- **RESET** The entire set of user audits can be reset during any of the audit configurations, by holding the Start button for longer than 5 seconds. The displays will be cleared while still holding the button pressed and will return to the same audit step after releasing the button. The value of all audits will be reset to “00 000”.
- **EXIT** The Audits mode is exited into Game History mode, by pressing the Test button once.

**\* NOTE! \***

- **ALL** Audits will **STOP INCREMENTING** when the “Total Number of Games Played”, audit A-07, reaches 60,000.
- To restart the audits they must be reset to 00 000 by holding The Start button for longer than 5 seconds while in audits mode.



## AUDITS QUICK REFERENCE TABLE

CODE	DISPLAY	AUDIT FUNCTION
A01	A-01	Total Current Played Game
A02	A-02	Total Current 1Player Played Game
A03	A-03	Total Current 2 Player Played Game
A04	A-04	Total Current Multi Player Played Game
A05	A-05	Total Number of Coin 1
A06	A-06	Total Number of Coin 2
A07	A-07	Total Number of Service Credit
A08	A-08	Total Number of Multi Player game
A09	A-09	Total High Score Bonus win 1 Player
A10	A-10	Total High Score Bonus Win 2 Player
A11	A-11	Total number of High Score Bonus Win Multi Player
A12	A-12	Average Ticket per Game
A13	A-13	Highest Game Score 1 Player
A14	A-14	Highest Game Score 2 Player
A15	A-15	Highest Game Score Link Player
A16	A-16	Total Highest Score = 999 1 Player
A17	A-16	Total Highest Score = 999 2 Player
A18	A-16	Total Highest Score = 999 Multi Player
A19	A-16	Total Number of Game Played <i>(Un resettable)</i>
A20	A-20	Total number of 1 Player Played Game <i>(Un resettable)</i>
A21	A-21	Total number of 2 Player Played Game <i>(Un resettable)</i>
A22	A-22	Total number of Multi Player Played Game <i>(Un resettable)</i>
A23	A-23	Total Number of Linked Game <i>(Un resettable)</i>
A24	A-24	Total number of High Score 1 Player Game <i>(Un resettable)</i>
A25	A-25	Total number of High Score 2 Player Game <i>(Un resettable)</i>
A26	A-26	Total number of High Score Multi Player Game <i>(Un resettable)</i>
A27	A-27	Total number of Highest Bonus 1 Player <i>(Un resettable)</i>
A28	A-28	Total number of Highest Bonus 2 Player <i>(Un resettable)</i>
A29	A-29	Total number of Highest Bonus Multi Player <i>(Un resettable)</i>
A30	A-30	Total Number of High Score = 999 1 Player <i>(Un resettable)</i>
A31	A-31	Total Number of High Score = 999 2 Player <i>(Un resettable)</i>
A32	A-32	Total Number of High Score = 999 Multi Player <i>(Un resettable)</i>
A33	A-33	Total Game Played <i>(Un resettable)</i>
A34	A-34	Checksum for game audit <i>(Un resettable)</i>
A35	A-35	Total number of Coin 1 Counter <i>(Un resettable)</i>
A36	A-36	Total number of Coin 2 Counter <i>(Un resettable)</i>
A37	A-37	Checksum for coin counter <i>(Un resettable)</i>
A38	A-38	Total Ticket <i>(Un resettable)</i>
A39	A-39	Total Game Play <i>(Un resettable)</i>
A40	A-40	Average Checksum <i>(Un resettable)</i>



## AUDITS DETAILED

### ■ A01 = TOTAL CURRENT PLAYED GAME

This Audit displays the *total number of current played game* since the audits were last cleared.

### ■ A02 = TOTAL CURRENT 2 PLAYER GAME

This Audit displays the *total Current 2 player game* since the audits were last cleared.

### ■ A03 = TOTAL NUMBER OF COIN 1

This Audit displays the *total number of Coin 1* since the audits were last cleared.

### ■ A04 = TOTAL NUMBER OF COIN 2

This Audit displays the *total number of Coin 2* since the audits were last cleared.

### ■ A05 = TOTAL NUMBER OF SERVICE CREDIT

This Audit displays the *total number of Service Credit* since the audits were last cleared.

### ■ A06 = TOTAL NUMBER OF LINKED GAME

This Audit displays the *total number of Linked Game* since the audits were last cleared.

### ■ A07 = TOTAL NUMBER OF DOUBLE TICKET GAME

This Audit displays the *total number of Double Ticket Games* since the audits were last cleared.

**\* NOTE! \***

- ALL Audits will STOP INCREMENTING when the “Total Number of Games Played”, audit A-07, reaches 60,000.
- To restart the audits they must be reset to 00 000 by holding The Start button for longer than 5 seconds while in audits mode.

### ■ A08 = TOTAL NUMBER OF HIGH SCORE WIN

This Audit displays the *total number of High Score Win* since the audits were last cleared

### ■ A09 = AVERAGE TICKET PER GAME

- This Audit displays the *Average Ticket per Games* since the audits were last cleared



## **A10 = HIGHEST GAME SCORE**

This Audit displays the *Highest Game Score* since the audits were last cleared

### ■ **A19 to A40 = MANUFACTURE AUDITS ONLY**

These are Un resettable audit for Manufacture only.

**\* NOTE! \***

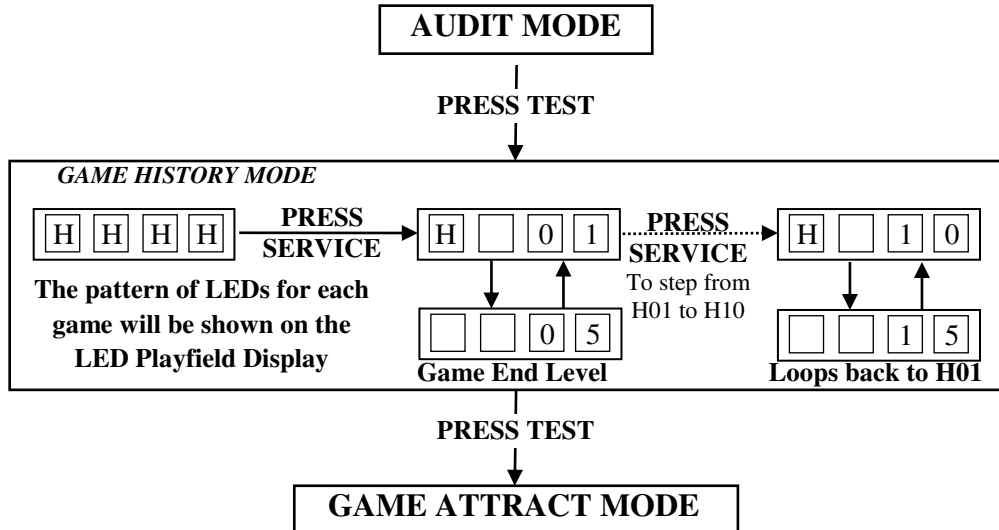
- **LAI Games** Customer Support may request from the operator the values of these Manufacturers audits, to help with any service issues.



## GAME HISTORY MODE

By using the Game History Mode the operator can view the results of the last 10 games played. This enables the operator to verify players game results and verify the win / lose pattern on the LED Playfield Display. The display shows the level reached in each of the last 10 games.

### GAME HISTORY MODE DIAGRAM



**\* NOTE! \***

- Score Histories will be erased if the game is switched off then on. Empty score histories show as [ ] [ ] [ ] [ ] on the 4-digit display

### GAME HISTORY QUICK REFERENCE TABLE

CODE	DISPLAY	HISTORY RESULTS
H01	H [ ] 0 1	Level Ending & LED Pattern for Very Last Game Played
H02	H [ ] 0 2	Level Ending & LED Pattern for 2 <sup>nd</sup> Last Game Played
H03	H [ ] 0 3	Level Ending & LED Pattern for 3 <sup>rd</sup> Last Game Played
H04	H [ ] 0 4	Level Ending & LED Pattern for 4 <sup>th</sup> Last Game Played
H05	H [ ] 0 5	Level Ending & LED Pattern for 5 <sup>th</sup> Last Game Played
H06	H [ ] 0 6	Level Ending & LED Pattern for 6 <sup>th</sup> Last Game Played
H07	H [ ] 0 7	Level Ending & LED Pattern for 7 <sup>th</sup> Last Game Played
H08	H [ ] 0 8	Level Ending & LED Pattern for 8 <sup>th</sup> Last Game Played
H09	H [ ] 0 9	Level Ending & LED Pattern for 9 <sup>th</sup> Last Game Played
H10	H [ ] 1 0	Level Ending & LED Pattern for 10 <sup>th</sup> Last Game Played



## **GAME HISTORY PROCEDURE**

- **ENTER** The Game History mode is entered from Audits mode by pressing the Test button once or from Attract mode by pressing the Test button six times. **HHHH** Will be displayed on the 4-digit display.
  
- **SELECT** The green Service button is pressed for advancing each step through the set of Game Histories, starting from the **HHHH** display, H01 being the first step, continuing through to H10, and then looping again from H01 to H10 until the mode is exited.
  
- **EXIT** The Game History mode is exited into Game Attract mode, by pressing the Test button once.



## ERRORS AND TROUBLESHOOTING

If the game microprocessor detects any problems with the operation of the game, an Error will be displayed on the 4-digit display and the machine will play a voice message. “Please Call the Attendant”. Some error Messages will only be displayed when test mode is entered. Errors are displayed on the displays as **E r r X**, where ‘X’ is the error number. There are five error messages for Stacker, listed as follows:

### ERROR CODE QUICK REFERENCE TABLE

CODE	ERROR DESCRIPTION	SOLUTION
Err1	<b>TICKET DISPENSE ERROR</b> Jammed tickets, no tickets or no ticket notch pulse for longer than 3 seconds.	Clear ticket dispenser jam or replenish tickets. After this, push Test button once to clear error.
Err2	<b>START/STOP BUTTON JAMMED</b> , active for longer than 30 seconds	Check Button function using switch test
Err3	<b>EEPROM ERROR</b> Problem with on-board EEPROM	The main MCU is getting errors reading the EEPROM (24C16 IC on MCU).
Err4	<b>PLAYFIELD BUTTON ERROR</b>	Check and clear the Jam button or faulty switch.



## TROUBLESHOOTING GAME ERRORS

### ■ CLEARING GAME ERRORS

Game errors can be cleared, by pushing the test button ONCE. The game will try and check if the error is fixed. If the reason for the error is fixed, the game will continue as normal. If the error is not fixed, the error will remain on the display.

### ■ Err1 – TICKET ERROR

This error usually occurs if the game has run out of tickets or there is a ticket jam. A less common reason is if the game PCB tries to dispense tickets but doesn't get a notch pulse for approximately three seconds. Use the Switch Test and test the notch pulse by passing a ticket in and out of the notch sensor, an active notch will be display as C1.

If the game was out of tickets, replace the tickets, clear the ticket jam and then push the test button once to clear the error. The game will then payout any owed tickets.

### ■ Err2 – START/STOP BUTTON JAMMED

This error is usually displayed if the Start/Stop button is active for longer than 30 seconds Use the Switch Test and check the Stop/Start button, an active button will be display as C3.

### ■ Err3 – EEPROM ERROR

This Error is only displayed in test mode and means that the CPU cannot read the EEPROM, or is receiving errors during communication with the EEPROM (The 23C16 IC on the main MCU PCB). This could cause problems with the game audits and program settings. The first thing to do is trying to switch ON and OFF the machine in at least 2 cycles, if message still appear than replace the EEPROM IC Atmel 24C16 on the CPU PCB with the new EEPROM, If still Error message, this could be a problems with the game audits and program. If this error occurs, send your main MCU PCB to the nearest authorized LAI games dealer for repair.

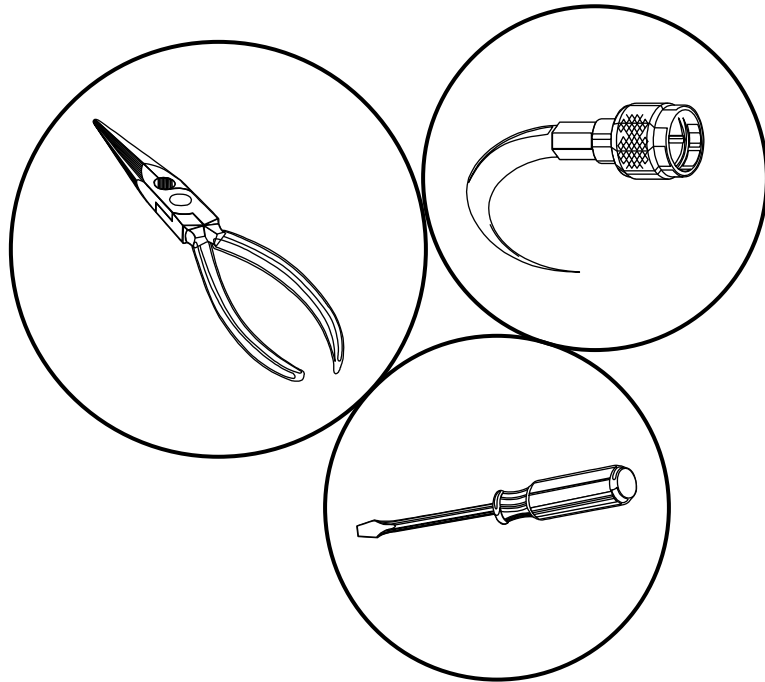
### ■ Err4 – PLAYFIELD BUTTON ERROR

This error is usually displayed if one or more button jam or button switch faulty.

Test the Button function using the Run Test. Test button using the Switch Test. Press the button should display between C11 – C40 in switch test. Removing your hand from the beams should stop C11 – C40 from being displayed.



# SECTION A: SERVICE INSTRUCTIONS



 ***BE SURE TO READ THE FOLLOWING  
Carefully before servicing this machine*** 



# A



# LOCATING AND ACCESSING PARTS



3" Speaker

BAFB45 4" Display

Start Button

4 Digit Credit display

Ticket indicator

Ticket Dispenser



Coin Cradle

DBA

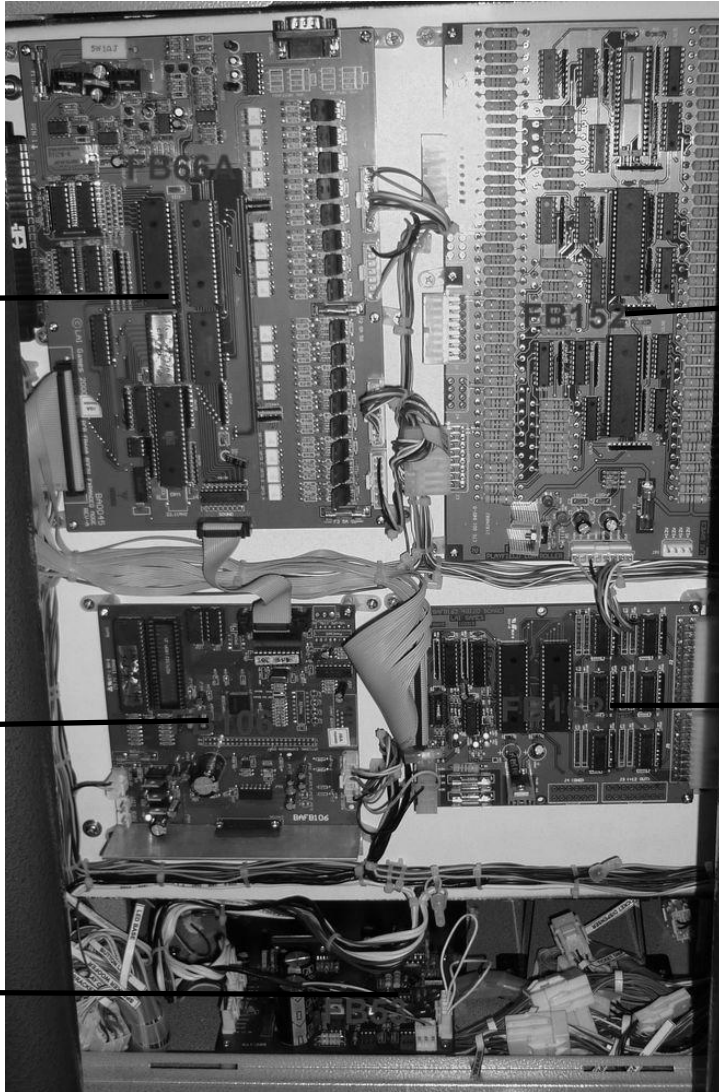
Cash Box



# ELECTRONIC DETAIL POSITION

BAFB66A

BAFB152

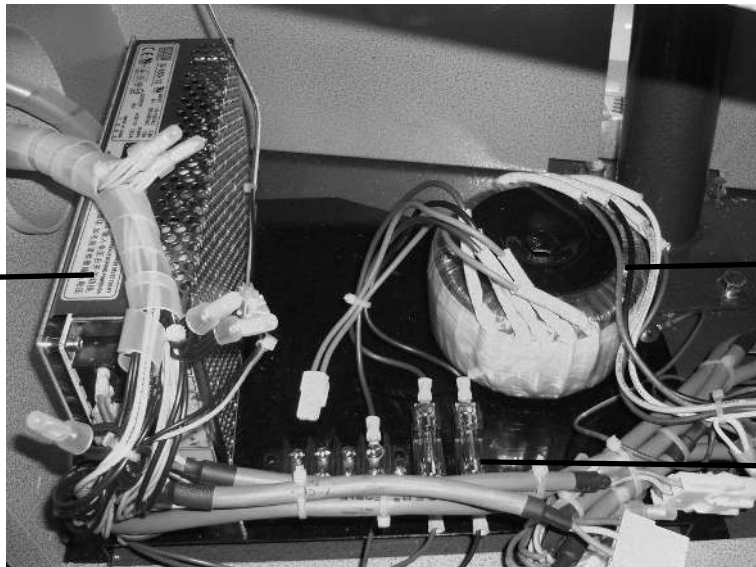


BAFB106

BAFB162

BAFB53

S-150-12  
12 VDC  
PSU



1A Toroid  
Transformer

Fuses



## PARTS DESCRIPTION

### ■ COIN MECHANISMS

The coin mechanisms can be accessed inside the Coin door, at the front-right of the machine cabinet.

### ■ CASH BOX

The cash box is located inside the coin door on the front of the machine cabinet.

### ■ SPEAKERS

Two speakers are located to the front of the cabinet. Access is through the rear service panel.

### ■ SERVICE CONTROLS

Are located on the service panel mounted on the top of the Coin Door, they are accessed by opening the Coin Door.

### ■ SERVICE BUTTON

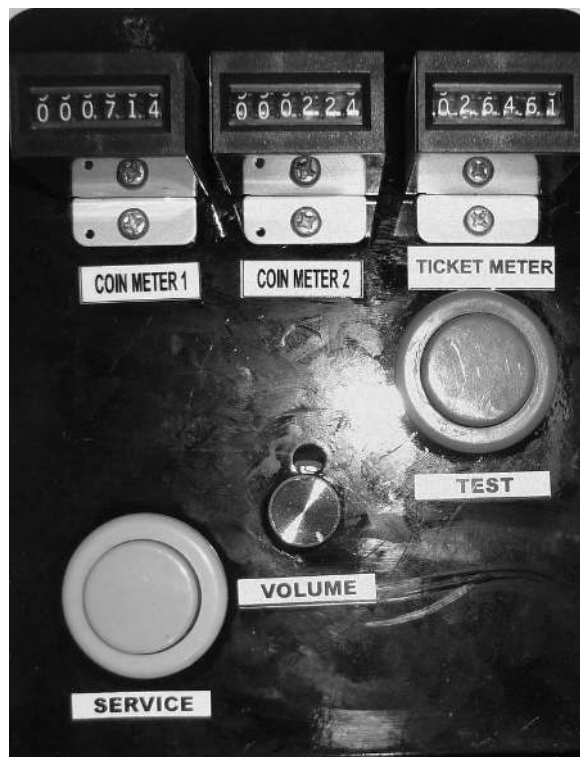
Use to input credits to the game without activating the coin counter, and to perform test procedures in combination with the Test button.

### ■ TEST BUTTON

Used to enter and access the Test Mode, in combination with the Service button.

### ■ VOLUME KNOB

Use to adjust the speaker's sound level.





## ■ **POWER CORD**

The power cord is a standard IEC power cord (as used on computers), that is plugged in to the power inlet socket at the rear of the machine. The power cord can be removed for transport.

## ■ **POWER INLET**

The power inlet is located at the rear of the machine, on the left-hand side as viewed from the rear. It is a standard IEC inlet socket.

## ■ **MAINS SWITCH**

The mains switch is located on the power inlet assembly, along with the mains fuse and IEC inlet socket.

## ■ **FUSES- MAIN AC SUPPLY FUSE (1 x 6 AMP FAST BLOW, M205 TYPE)**

This fuse is for the main AC supply and is situated in the IEC mains input socket.

**\* WARNING! \***

**Always** Turn **OFF** Mains power and unplug the game before replacing any fuses.

**Always** Use the correct rated fuse.

## ■ **PCB's**

For location of all game PCB's, refer to the Parts Location diagram page of this manual.

## ■ **POWER SUPPLY**

The power supply is located at the back of the cabinet, and is accessed from the front of the machine. It is a 12V 12.5A 150 Watt switching power supply. The Computer also has its own internal Power Supply.



## LAMPS

**\* WARNING! \***

Always turn OFF Mains power and unplugged the game, before replacing any lamps.

Always allow time for cooling as Lamps that have been active for a time may still be too hot to touch.

### **COIN DOOR LAMPS (LED)**

The coin door lamps all are 12V/DC T10 LED or equivalent and can be accessed through the coin door.

### **BUTTON LAMPS (LED)**

The button lamps all are 12V/DC T10 LED or equivalent and can be accessed through the coin door or back door.

### **SIDE LAMPS**

There is LED Strip 12 VDC on each side of the Display. Access is from the back of the machine.

**\* CAUTION! \***

Always replace the lamps with the same or equivalent size, wattage and voltage.



## MAINTENANCE

### CLEANING AND CHECK UP

#### EXTERIOR

Regularly dust and clean the external cabinet areas as required, using a soft water-damp cloth and mild soap. Check for blown bulbs and replace as required.

Any scratches or marks in the fiberglass or acrylic can be buffed out using car polish or cut and polish.

**\* CAUTION! \***

Do not use solvents on the panels as it may affect the artwork.

#### INTERIOR

Regularly dust and vacuum the interior of the cabinet, taking care to remove any objects that may have fallen on the PCBs. Check and tighten all fixing hardware and fasteners as required.

**\* WARNING! \***

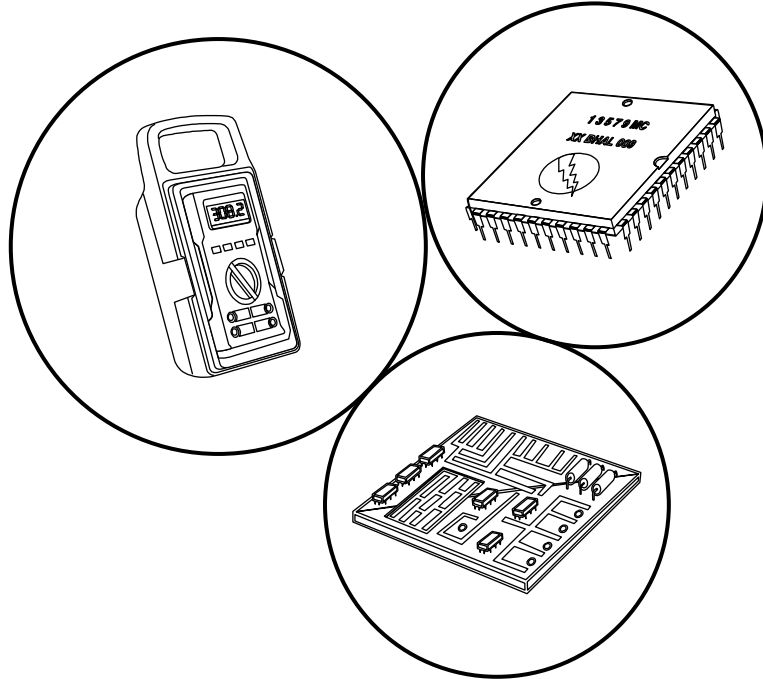
Always turn OFF Mains power and unplugged the game, before cleaning the interior of the machine.

Always after cleaning the cabinet interior, check all harness connectors and restore all loose or interrupted connections.

Regularly check that all the Display and Button Lamps are operating through the Sounds, Lamps and Display Test. Replace any globes that are not operational.



## SECTION B: TECHNICAL DETAILS



It is advised that anybody using SECTION B for repairing or modifying any of the components of the game should be a qualified technician, having at least a basic knowledge of digital components, integrated circuits and electricity.



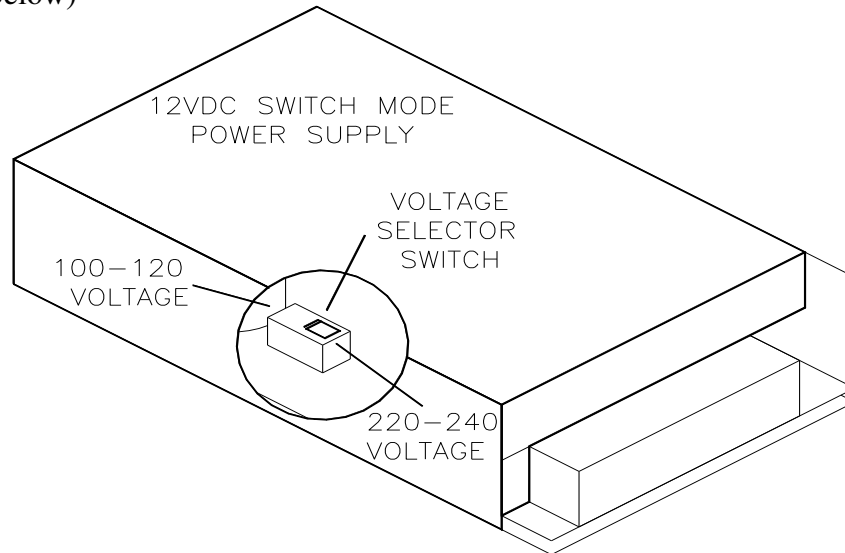
# B



# MAINS VOLTAGE ADJUSTMENT

## POWER SUPPLY

The Switch Mode Power Supply has a switch to set the mains voltage range. It is located at the rear of the game cabinet, and is accessed via the back door. Use a thin blade screwdriver to move the selector switch to the desired mains voltage (See Diagram Below)

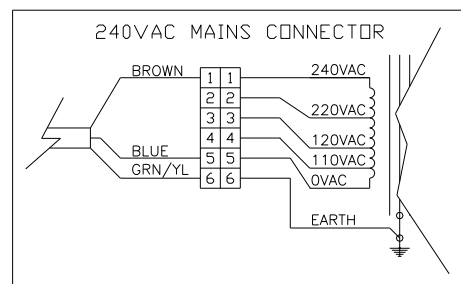
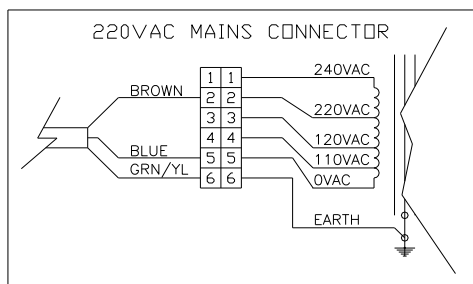
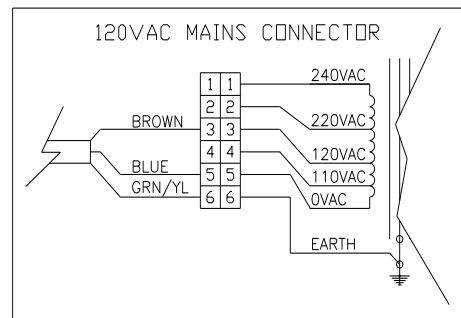


## TRANSFORMER CONNECTORS

Locate the machine transformer(s) in the base of the cabinet. If unsure of the location of the transformer(s), refer to Parts location diagram of this manual. Change the position of the 'ACTIVE' or 'HOT WIRE' input, (marked brown on the diagram), to the position for the desired mains voltage. (See Diagram Below)

## 6 WAY CONNECTOR PINOUT

PIN	FUNCTION
1	240VAC
2	220VAC
3	120VAC
4	110VAC
5	0VAV (NEUTRAL)
6	EARTH

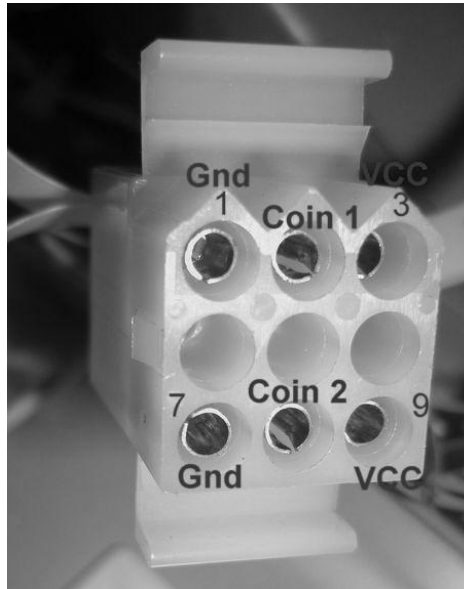




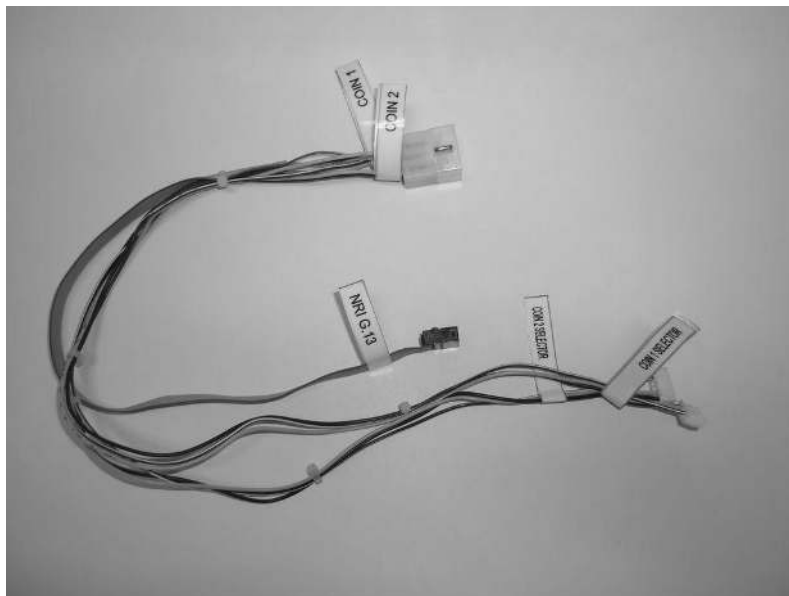
## COIN OPTIONS REFERENCE GUIDE

LAI Games have installed on the coin door is a 9 way Molex connector. This connector can be used for most electronic coin systems and comparators.

Please see below picture to understand the connection setup,



The Coin harness supplied with the game,

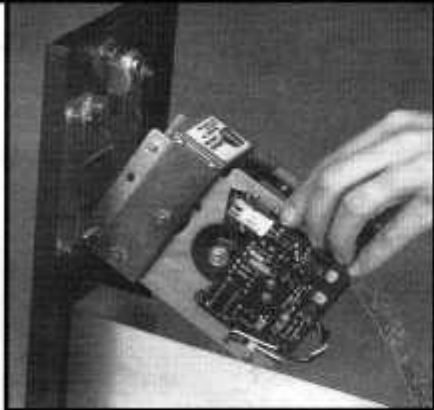


End connection to coin will fit to NRI G13 and 2x Electronic Coin Comparator LAI GAMES standard). Other types of coin electronic harnessing can be supplied as requested, please contact your nearest LAI GAMES Distributor.



# TICKET DISPENSER REFERENCE GUIDE

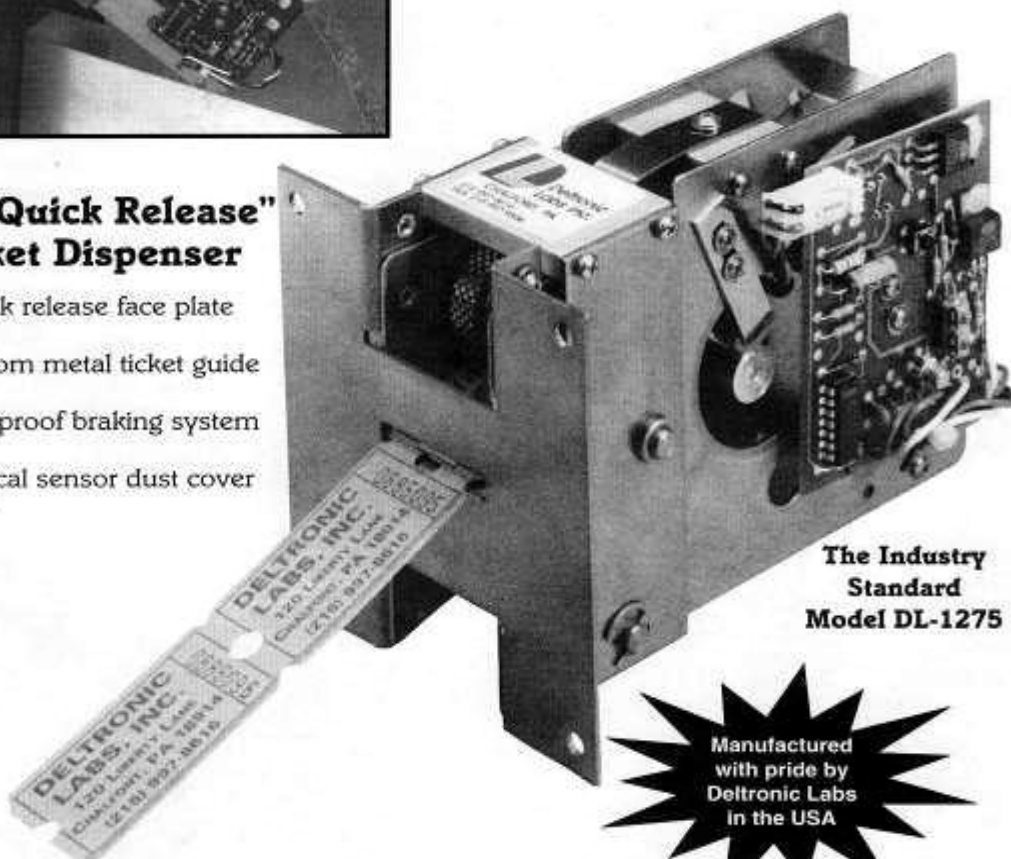
## “Quick Release” Ticket Dispenser Manual



U.S. Patent 5833104  
Additional Patents Pending

### The “Quick Release” Ticket Dispenser

- Quick release face plate
- Bottom metal ticket guide
- Foolproof braking system
- Optical sensor dust cover



The Industry  
Standard  
Model DL-1275

Another quality product from Deltronic Labs . . .  
the industry leader in ticket dispensers.

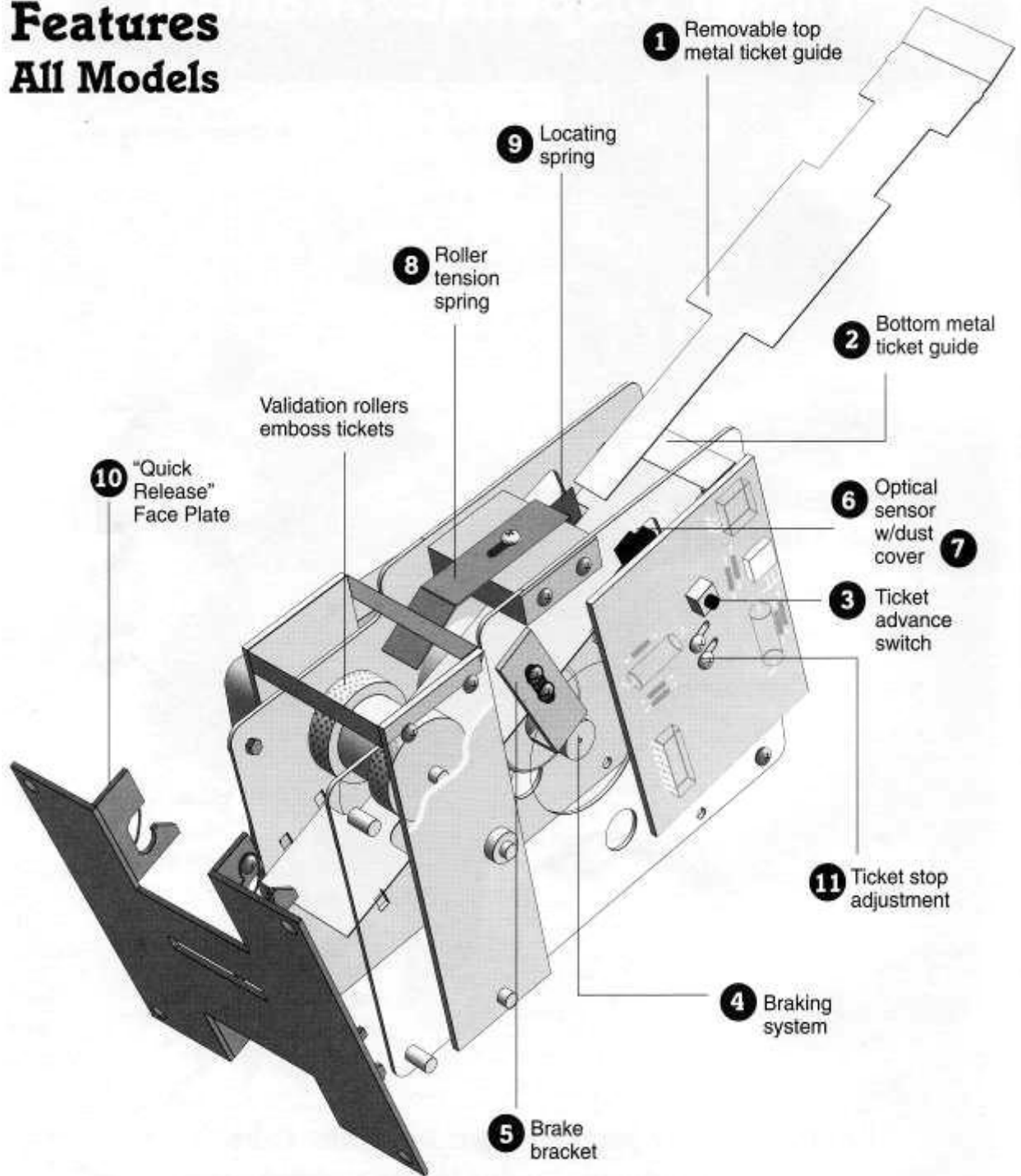


**Deltronic Labs, Inc.** 120 Liberty Lane, Chalfont, PA 18914  
215-997-8616 • FAX# 215-997-9506 • Web Site: [www.deltroniclabs.com](http://www.deltroniclabs.com)

# “Quick Release” Ticket Dispenser

## Features

### All Models

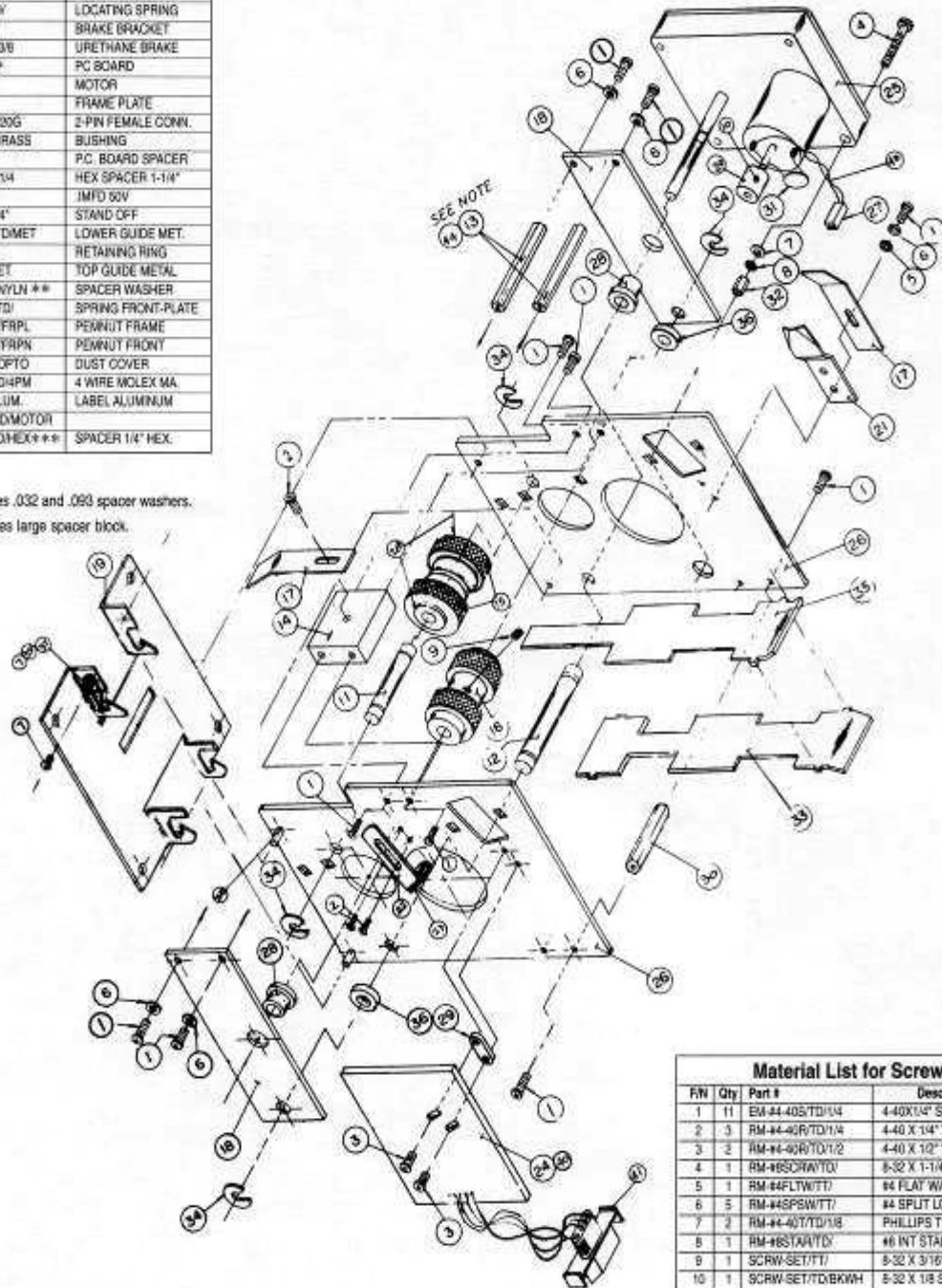




# Ticket Dispenser Assembly

Details of Parts			
F/N	Qty	Deltronic Labs P/N	Name
11	1	SHIFT-IDLRLR/TD/	IDL. ROLLER SHAFT
12	1	RM-SFTMTR/TD/	MOTOR PIVOT SHAFT
13	1	SPAC PIVBLK/TD/HOL	PIVOT BRACKET SPAC
14	1	RM-SPCPB/TD/	SPACER BLOCK
15	2	RM-PLRIDL/TD/WALD	IDLER ROLLER
16	1	RM-PLRIDR/TD/WALD	DRIVE ROLLER
17	2	SPRG-TENSA/TD/	TENSION SPRING
18	2	RM-BKTPTV/TD/	MTR PIVOT BKT.
19	1	RM-PANLFT/TD/NCPM	FRONT PANEL
20	1	RM-WHLBRK/TD/	BRAKE WHEEL
21	1	SPRG-LOCAT/TD/	LOCATING SPRING
22	1	RM-BKTBRK/TD/	BRAKE BRACKET
23	1	RM-BKTTLUB/TD/3/8	URETHANE BRAKE
24	1	PCBD-1275/TD/+	PC BOARD
25	1	RM-MOTORTD/	MOTOR
26	2	RM-PLATFR/TD/	FRAME PLATE
27	1	RM-CONN2PTE/20G	2-PIN FEMALE CONN.
28	4	BRNG-F312/TD/BRASS	BUSHING
29	1	SPAC-PC80/TD/	P.C. BOARD SPACER
30	1	SPAC-HEX/TD/1-1/4	HEX SPACER 1-1/4"
31	1	RM-1M/TD/50V	1MFD 50V
32	1	SPAC-HEX/TD/1/4	STAND OFF
33	1	GUID-BOTTOM/TD/MET	LOWER GUIDE MET.
34	4	RING-E25RT/TD/	RETAINING RING
35	1	GUID-TOP/TD/MET	TOP GUIDE METAL
36	2	PULY-SF212/TE/NYLN **	SPACER WASHER
37	2	SPRG-FRONT/TD/	SPRING FRONT-PLATE
38	4	RM-PENMUT/TD/FRPL	PENMUT FRAME
39	2	RM-PENMUT/TD/YRPN	PENMUT FRONT
40	1	COVR-H21A/TD/OPTO	DUST COVER
41	1	CONN-MOLEX/TD/4PM	4 WIRE MOLEX MA.
42	1	RM-LABEL/TD/ALUM.	LABEL ALUMINUM
43	1	WIRE-REDBLK/TD/MOTOR	
44	2	SPAC-P9VBRK/TD/HEX+***	SPACER 1/4" HEX.

\* Order by Model #  
 \*\* Note: F/N #36 replaces .032 and .093 spacer washers.  
 \*\*\* Note: F/N #44 replaces large spacer block.



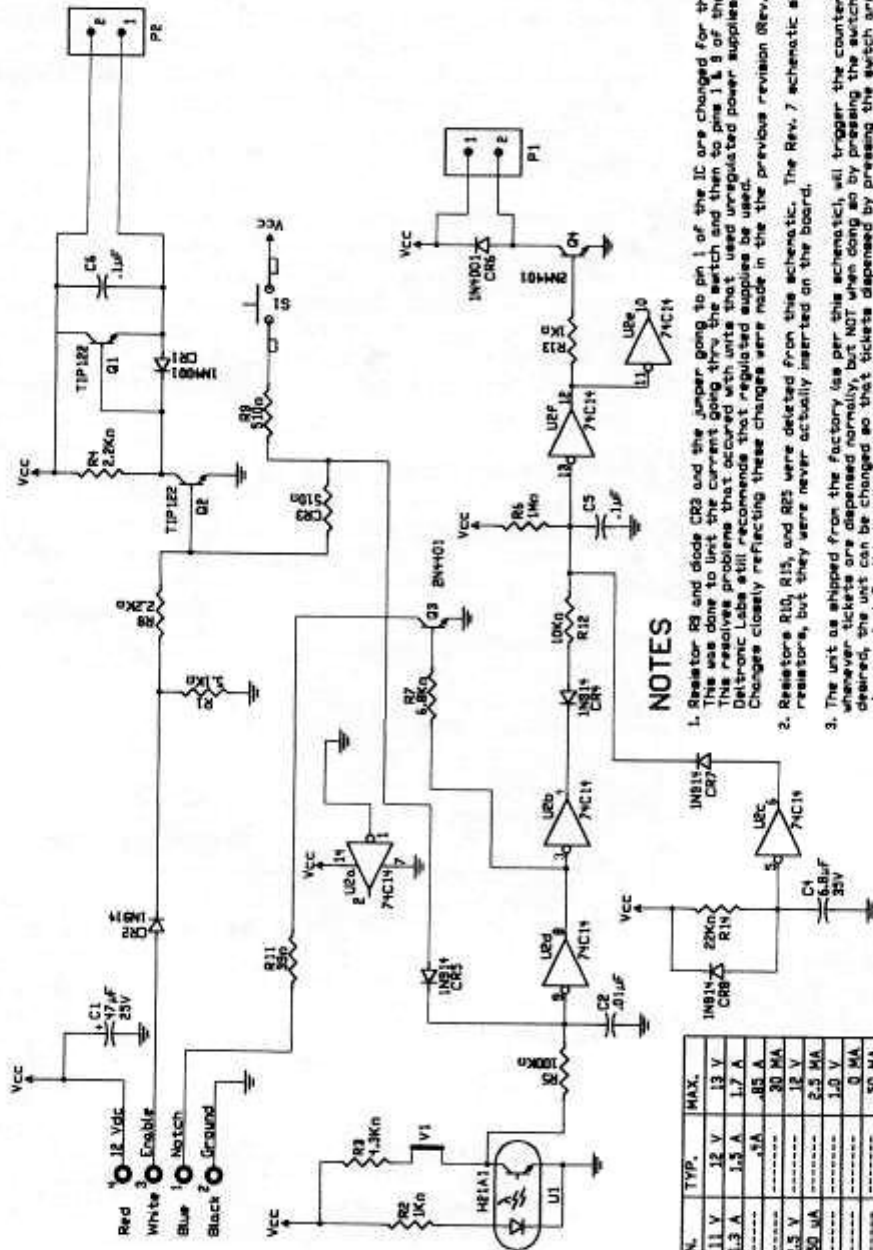
Material List for Screws			
F/N	Qty	Part #	Description
1	11	EM-#4-40S/TD/1/4	4-40X1/4" SCREW
2	3	RM-#4-40R/TD/1/4	4-40 X 1/4" WASHER HEAD
3	2	RM-#4-40R/TD/1/2	4-40 X 1/2" WASHER HEAD
4	1	RM-#8SCRW/TD/	8-32 X 1-1/4"
5	1	RM-#4FLTW/TD/	#4 FLAT WASHER
6	5	RM-#4SPSW/TD/	#4 SPLIT LOC. WASHER
7	2	RM-#4-40T/TD/1/8	PHILLIPS TRUSSHEAD
8	1	RM-#8STAR/TD/	#8 INT STAR WASHER
9	1	SCRW-SET/TD/	8-32 X 3/16" SET SCREW
10	1	SCRW-SET/TD/BKWH	8-32 X 1/8 SET SCREW



# Control Board Rev. 8

## DL-1275 with 12V meter output

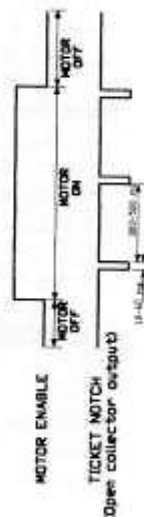
This dispenser is controlled by the game software. The game turns on the dispenser with a logic high signal and monitors a return notch signal from the ticket dispenser to turn it off. It will dispense as many tickets as game options allow.



### NOTES

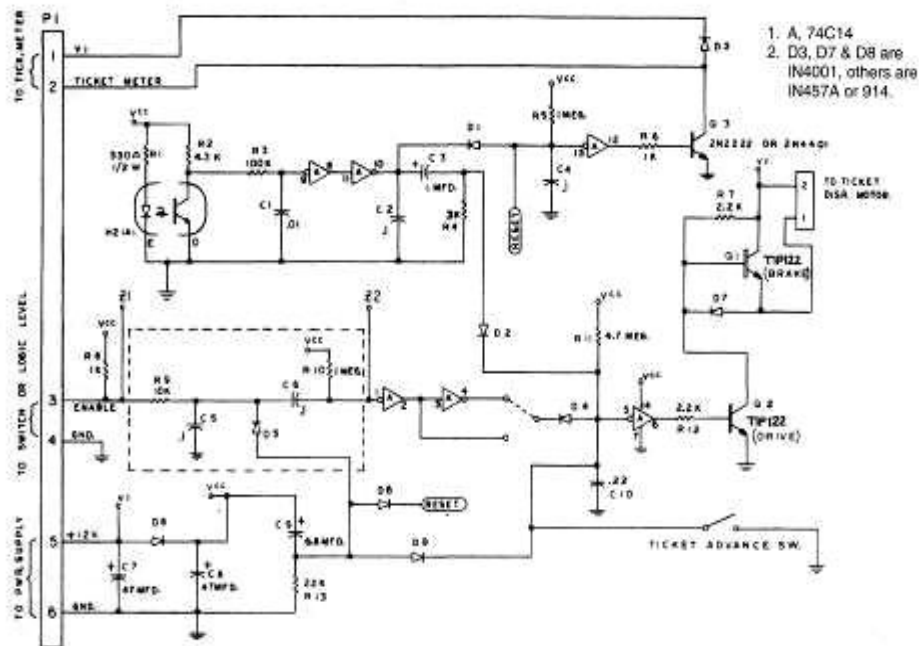
1. Resistor R9 and diode CR3 and the jumper going to pin 1 of the IC are changed for this revision. This was done to limit the current going thru the switch and then to pins 1 & 9 of the IC. This resolves problems that occurred with units that used unregulated power supplies. Deltronic Labs still recommends that regulated supplies be used. Changes closely reflecting these changes were made in the previous revision (Rev. 7).
2. Resistors R10, R15, and R25 were deleted from the schematic. The Rev. 7 schematic shows these resistors, but they were never actually inserted on the board.
3. The unit as shipped from the factory (as per this schematic), will trigger the counter whenever tickets are dispensed normally, but NOT when done so by pressing the switch. If desired, the unit can be changed so that tickets dispensed by pressing the switch are also counted. Do this by deleting diode CR3.
4. This unit can be made to conform to CE specifications by the addition of 4 components not shown here. If this is desired, please order the CE version, and the unit will be shipped with the necessary components.
5. This unit can be configured in a number of ways. Please check our "Full Options" schematic to see the different configurations. If this schematic is not included with your manual, contact us for a copy.
6. If tickets are highly translucent, the 1.2Kohm resistor (R3) can be lowered in value (e.g. 2.2 Kohm). For more sensitive adjustment, the Jumper V1 can be replaced with a 20K pot, and the 1.2 Kohm resistor (R3) changed to 10Kohm.

MOTOR SUPPLY - V	MIN.	TYP.	MAX.
I (START)	11 V	12 V	13 V
I (RUN)	1.2 A	1.3 A	1.7 A
I (STANDBY)	---	1A	85 A
MOTOR ENABLE ON - V	2.5 V	---	30 MA
MOTOR ENABLE OFF - V	250 MA	---	12 V
TICKET NOTCH - I SINK	---	---	2.5 MA
V PULL UP	---	---	1.0 V
			0 MA
			50 MA
			30 V



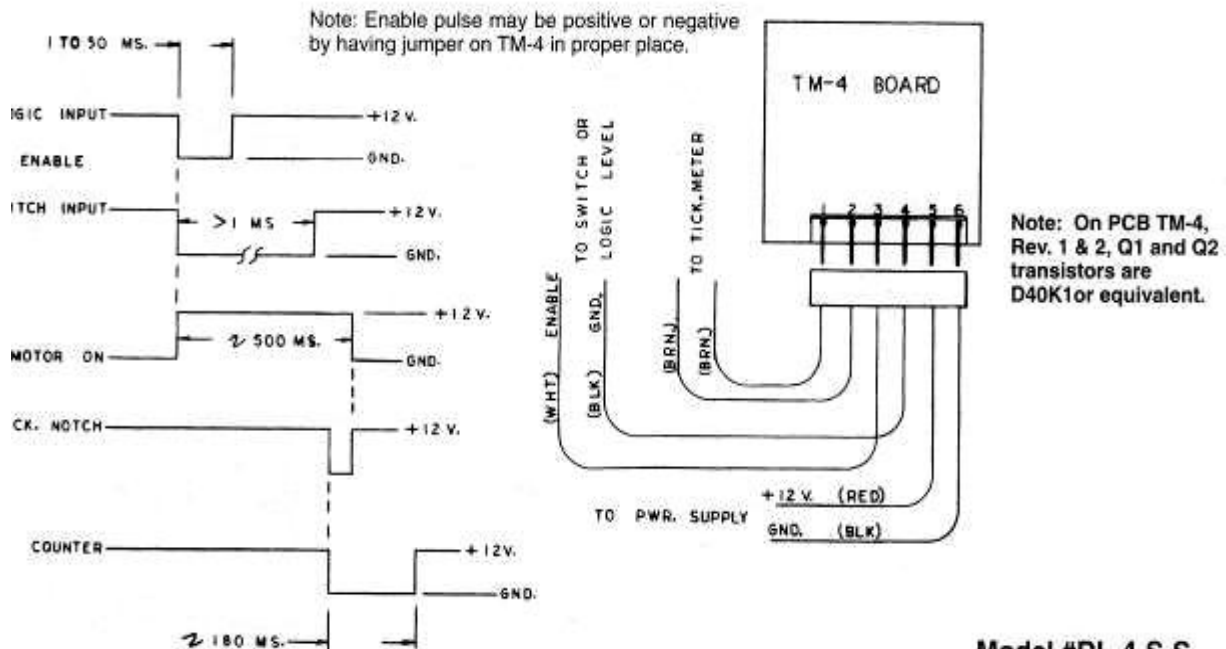
# Control Board

## Models DL-4-S-S DL-4-P-S



Model #DL-4-S-S, SW Input  
Model #DL-4-P-S, Logic Input.

Note: With logic input components and dotted lines are omitted and Z1 is jumpered to Z2.



Model #DL-4-S-S  
Model #DL-4-P-S



## EDGE CONNECTOR PINOUT

COMPONENTS SIDE	SOLDER SIDE
GND 1	A GND
GND 2	B GND
+12VDC 3	C +12V
+12VDC 4	D +12V
P1A7 5	E P1B7 Test button
P1A6 6	F P1B6 Service button
P1A5 7	H P1B5 Start Button
P1A4 8	J P1B4 Ticket 2 Notch
Link mode button P1A3 9	K P1B3 Ticket 1 notch
Mode 3 button P1A2 10	L P1B2 Coin1
Mode 2 button P1A1 11	M P1B1 Coin2
Mode 1 button P1A0 12	N P1B0
(watch dog) P1C7 13	P P2C7 (watch dog)
P1C6 14	R P2C6 Display 7seg clock
P1C5 15	S P2C5 Display 7seg data
P1C4 16	T P2C4
Score 2 Data P1C0 17	U P2C0 RSL Board 1 Data (FB152)
Score 2 Clock P1C1 18	V P2C1 RSL Board 2 Data (FB152)
Score 1 Data P1C2 19	W P2C2 RSL Board 3 Data (FB152)
Score 1 Clock P1C3 20	X P2C3 RSL Board Clock (FB152)
GND 21	Y GND
GND 22	Z GND

JST 7	JST 5
Base Light 1 P2A0 1	1 P2B0 (PNP) Ticket 1 motor drive
Base Light 2 P2A1 2	2 P2B1 (PNP) Ticket 2 motor drive
Leader Light P2A2 3	3 P2B2 Coin1 counter
Base Light 3 P2A3 4	4 P2B3 Coin2 counter
Base Light 4 P2A4 5	5 P2B4 Ticket 1 counter
Base Light 5 P2A5 6	6 P2B5 Ticket 2 counter
Double Ticket Light P2A6 7	7 P2B6 Start Button Light
P2A7 8	8 P2B7



## BAFB152 OUTPUT LIST

### J1 ( JST 8 Way)

1. +12V
2. -
3. GND
4. -
5. Data 1
6. Data 2
7. Data 3
8. Clock

### JP1. ( 4 Way JST )

1. +12V
2. +12V
3. GND
4. GND

### J2. (16 Way Mini Fit Connector)

PIN	Description	PIN	Description
1	Out Button 1	9	Out Button 8
2	Out Button 2	10	Out Button 9
3	Out Button 3	11	Out Button 10
4	Out Button 4	12	Out Button 11
5	Out Button 5	13	Out Button 12
6	Out Button 6	14	Out Button 13
7	Out Button 7	15	Out Button 14
8	+12V Out	16	+12V Out

### J3. ( 16 Way Mini Fit Connector )

PIN	Description	PIN	Description
1	Out Button 15	9	Out Button 22
2	Out Button 16	10	Out Button 23
3	Out Button 17	11	Out Button 24
4	Out Button 18	12	Out Button 25
5	Out Button 19	13	Out Button 26
6	Out Button 20	14	Out Button 27
7	Out Button 21	15	Out Button 28
8	+12V Out	16	+12V Out



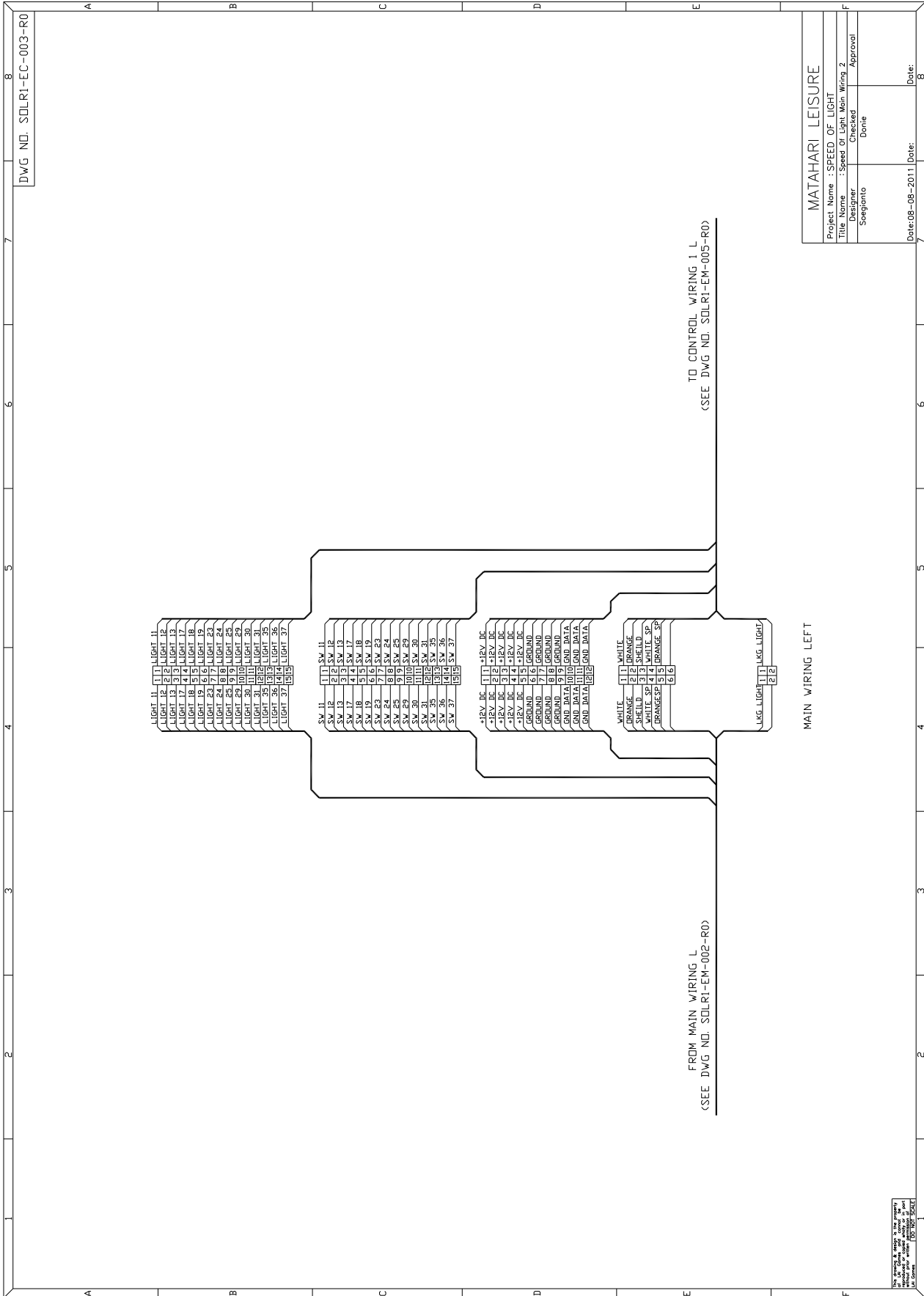
**J5. ( 16 Way Mini Fit Connector )**

<b>PIN</b>	<b>Description</b>	<b>PIN</b>	<b>Description</b>
1	Out Button 29	9	-
2	Out Button 30	10	-
3	-	11	-
4	-	12	-
5	-	13	-
6	-	14	-
7	-	15	-
8	+12V Out	16	+12V Out



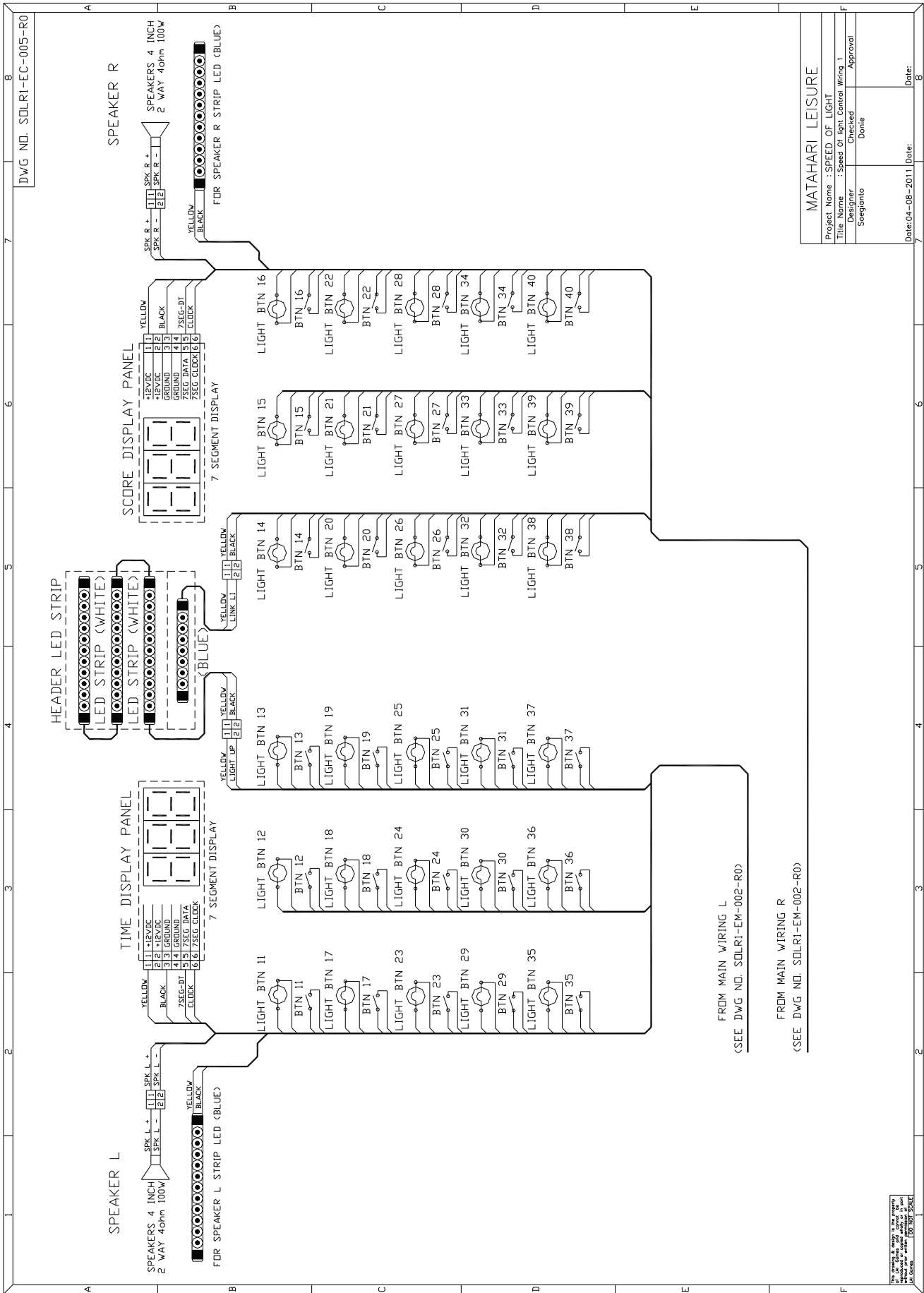


# SPEED of LIGHT MAIN WIRING 1



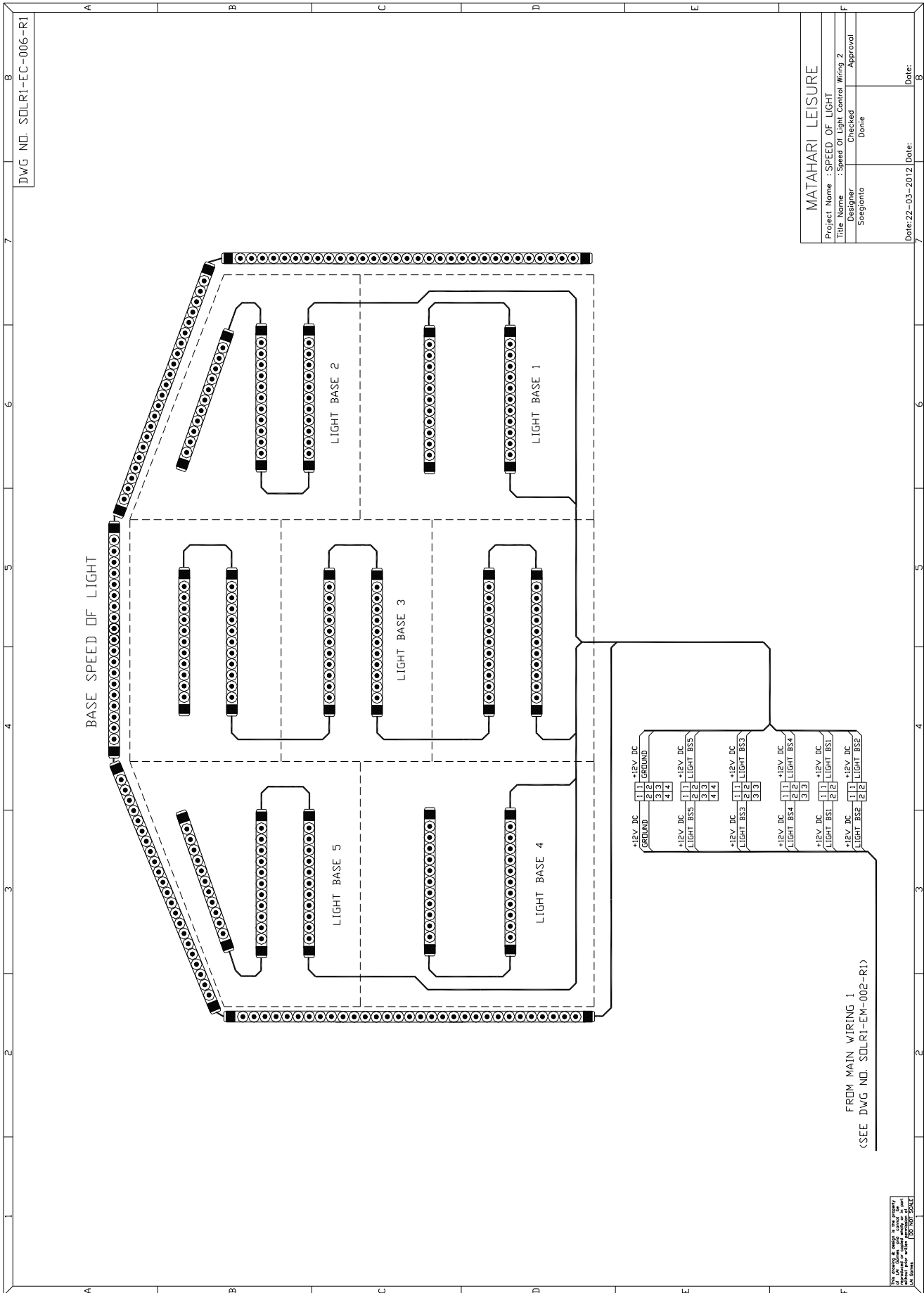


# SPEED of LIGHT CONTROL WIRING





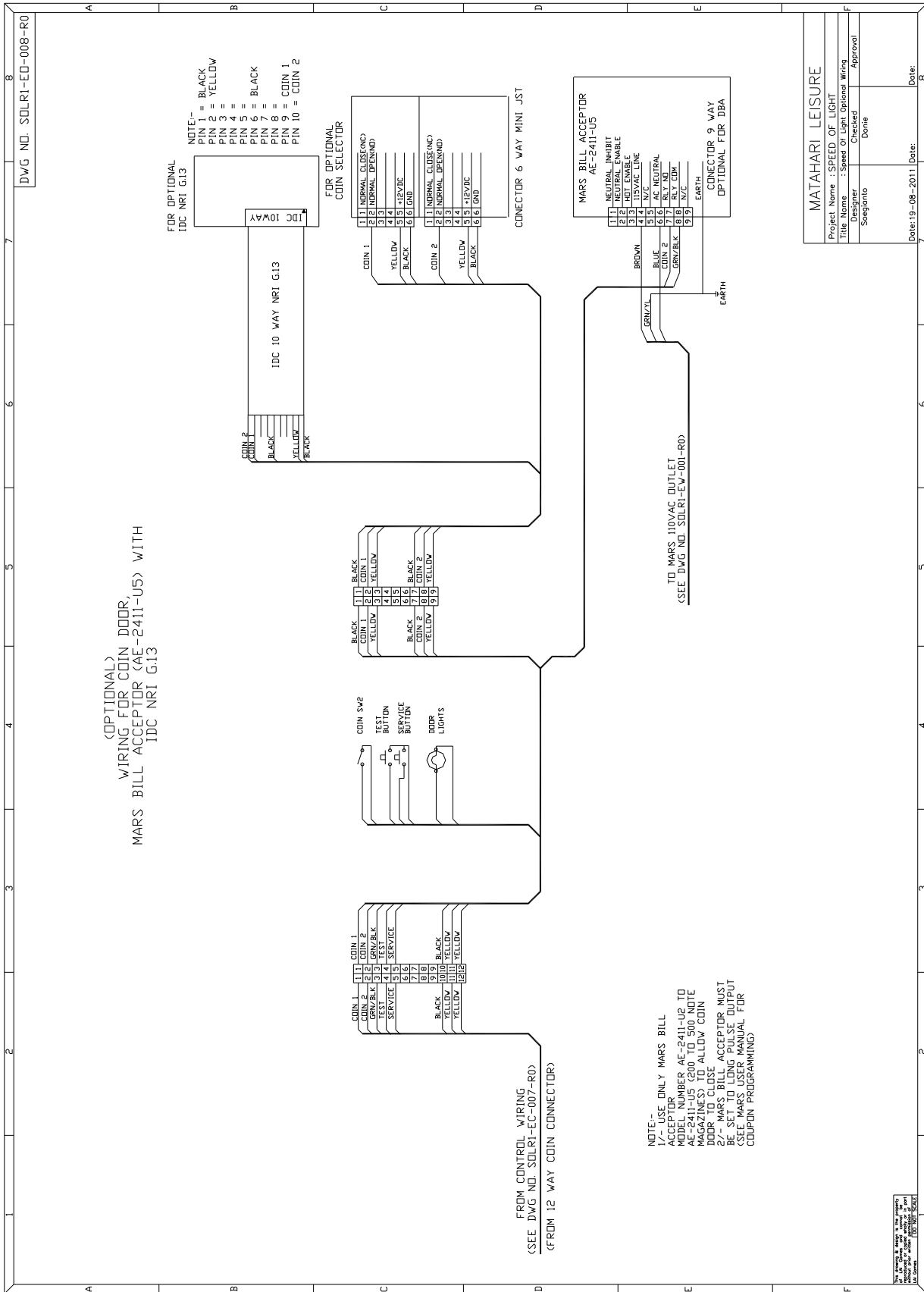
# SPEED of LIGHT CONTROL WIRING 1





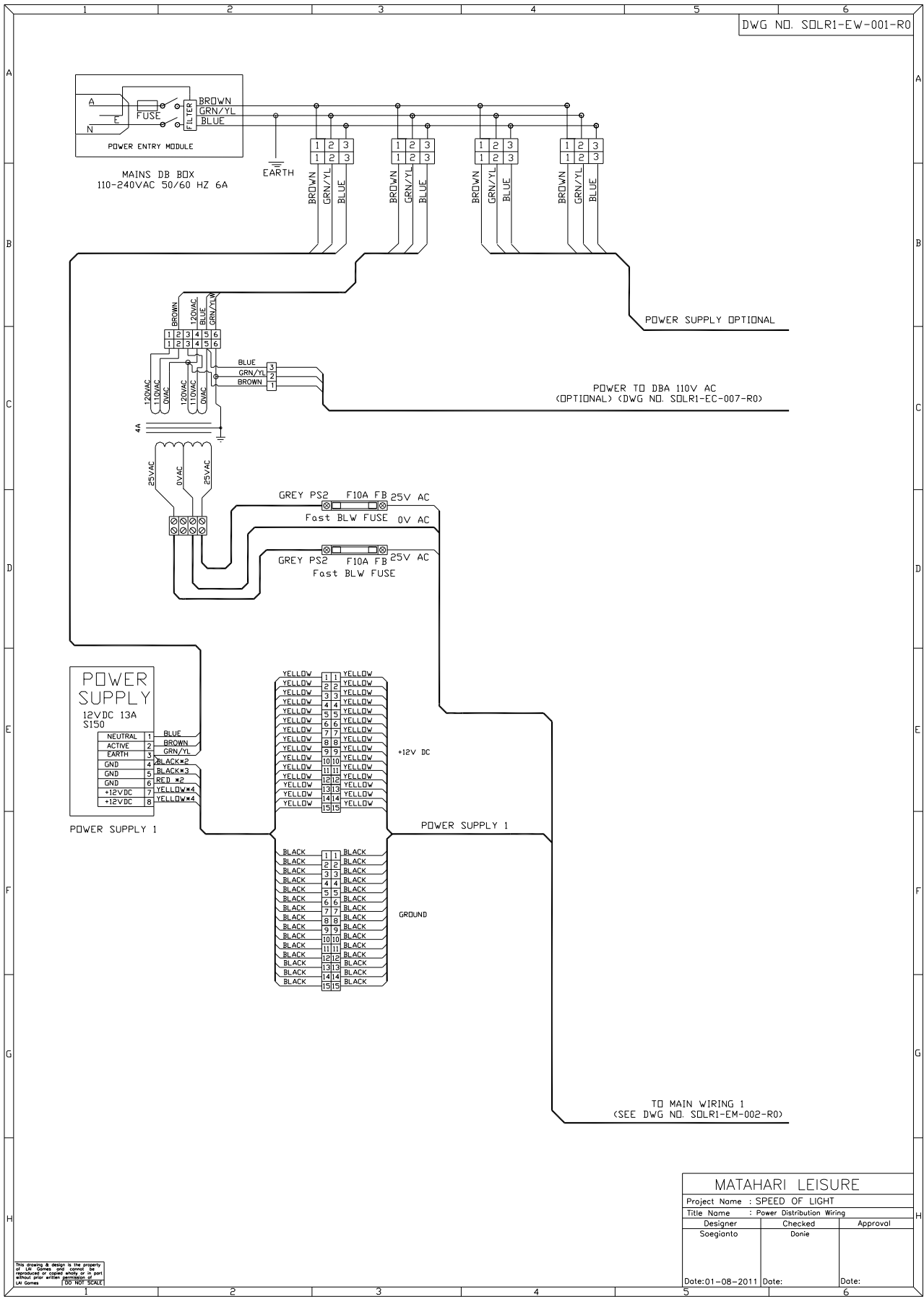


# SPEED of LIGHT OPTIONAL WIRING





# SPEED of LIGHT POWER WIRING



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- (b) To and from Transport and freight costs are not covered by the warranty.
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