

# SERVICE MANUAL

## WINNERS' CUBE....



ISSUE DATE: Oct.01,2010



- ▶ Please read the manual carefully and keep it in mind before using this machine.
- ▶ Put this manual within touch of your reference in anytime.

# PRECAUTIONS FOR USE

The following safety precautions are given throughout this manual. They must be strictly followed to protect those who install, use or maintain this product as well as to protect players, visitors and property.

For safety reasons.

- The following suggestions should be adhered to:



## WARNING

Disregarding could result in serious injury.



## CAUTION

Disregarding could result in injury or product damage.

- The following graphic suggestions describe the types of precautions to be followed.



Indicates a care should be taken.



Forbidden.



Indicates a matter which must be performed.

- Precautions to be followed:

**Certain procedures require a qualified in-shop maintenance person or industry specialist. For such instructions, a qualified person must take care of the jobs.**

- Otherwise an electric shock, machine trouble, or a serious accident may result.
- Replacing the machine parts, inspecting and maintaining the machines, and troubleshooting must be assigned only to a qualified in-shop maintenance person or industry specialist. This booklet gives instructions that hazardous jobs in particular must be handled by an industry specialist. Qualified in-shop maintenance person and industry specialist are defined as follows.

### **Qualified in-shop maintenance person**

- A service staff shall have experience in operations of game machines. The staff shall be responsible for assembly, installation, inspection and maintenance of the machine.

### **Industry specialist**

- An industry specialist must be engaged in designing, manufacturing, inspecting and servicing amusement machines. He or she must have an education in electrical, electronic and mechanical engineering, and routinely maintain and repair amusement machines.

# PRECAUTIONS FOR USE

## WARNING

**Be sure to consult an industry specialist when setting up, moving or transporting this product.**

- This product should not be set up, moved or transported by any one other than an industry specialist.
- When installing this product, set the 4 leg levelers evenly on the floor and make sure that the product is installed stably in a horizontal position. Unstable installation may result in injury or accident.
- When installing this product, do not apply undue force on movable parts. Otherwise, injury and accident may result, or the product may be damaged.

**The machine for indoor usage only does not install outside.**



**Do not set the game machine up near emergency exits.**



**Protect the game machine from:**

- Rain or moisture.
- Direct sunlight.
- Direct heat from air-conditioning and heating equipment, etc..
- Hazardous flammable substances.
- Otherwise an accident or malfunction may result.



**Do not place containers holding chemicals or water on or near the game machine.**



**Do not place objects near the ventilating holes.**



**Do not bend the power cord by force or place heavy objects on it.**



**Never plug or unplug the power cord with wet hands.**



**Never unplug the game machine by pulling the power cord.**



## CAUTION

**Be sure to use indoor wiring within the specified voltage requirements. For extension cord, use the specified rating or more.**

**Be sure to use the attached power cord.**

**Never plug more than one cord at a time into the electrical receptacle.**



**Do not lay the power cord where people walk through.**



**Be sure to ground this product.**



**Do not exert excessive force when moving the machine.**




**For proper ventilation, keep the game machine 100mm(4") away from the walls.**

**Do not alter the system related dipswitch settings.**

# PRECAUTIONS FOR USE


## WARNING

If there is any abnormality such as smoke, bad smell or abnormal noise being emitted from the machine, immediately turn OFF the main power switch and unplug the power cord from the receptacle to stop operating it. 

- Using the machine in abnormal conditions could result in fire or accidents.

In case of abnormality

1. Turn OFF the main power switch.
2. Unplug the power cord from the receptacle.
3. Contact your nearest dealer.

**Do not leave the power cord plugged in improperly or covered with dust.** 

- Doing so could result in the power cord being damaged periodically.


## CAUTION

**Do not use this product anywhere other than industrial areas.** 

- Using in a residential area or an area next to a residential area could affect signal reception of radios, television sets, telephones, etc..
- Do not give shock the surface of glass products.

- Please do not play this game if
  - When you do drinking;
  - When your physical condition is not normal;
  - When you are in pregnancy;
  - When you have on a pulse controller;
  - When you have recently experienced a cramp or fainting away while watching TV.
- Avoid excessive force/shock while playing/moving the game.
- While do games, pay attention to surrounding.

**Do not plug or unplug the power cord with wet hands.** 

**In handling the power cord, follow the instructions below.** 

- |   |  |
|---|--|
| • Do not damage the power cord.           | • Do not modify the power cord.            |
| • Do not bend the power cord excessively. | • Do not twist the power cord.             |
| • Do not heat the power cord.             | • Do not pull the power cord.              |
| • Do not bind the power cord.             | • Do not stand on the power cord.          |
| • Do not sandwich the power cord.         | • Do not drive a nail into the power cord. |

**If the power cord or power plug becomes damaged, stop using the machine immediately and ask your nearest dealer to replace the parts.**



# PRECAUTIONS FOR USE

## WARNING

Be sure to turn OFF the main power switch and unplug the power cord from the receptacle before inspecting or cleaning the machine.



When replacing parts, be sure to use parts of the correct specifications. Never use parts other than the specified ones.



Opening inside the machine shall be done by machine specialist only as high electric current is being sent inside. For game machine with monitor, a care should be taken while opening its back door. If not, a damage to the inside parts or the monitor may occur.



If the sub power switch of the service panel is turned OFF without turning OFF the main power switch of the power supply unit, some parts in the units remain live. When opening the back door, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.



Strictly refrain from disassembly and repair of parts which are not indicated in this manual, as well as settings and remodeling.



To clean the game machine, wipe it with a soft cloth dampened in a neutral detergent.

- Using thinner or other organic solvent or alcohol may decompose the material.
- Electrical shock or equipment failure could be caused by water entering the inside of the machine.

## CAUTION

Components in the game are sensitive to vibrations and impact. Care should be used when moving and transporting the game machine.



Be sure not to let the machine tip over.

Before moving the machine, be sure to turn OFF the main power switch, unplug the power cord from the receptacle and remove the power cord from the machine.



Before moving take the machine, off the levelers and move it on the casters.

Avoid excessive force while moving the machine.

## PRECAUTIONS IN HANDLING

- When setting up, inspecting, maintaining, moving or transporting this product, follow the procedures and instructions set forth in this manual and perform such work safely.
- Do not set up, handle, inspect, maintain, move or transport this product under conditions equivalent to the condition of "WARNING" or "CAUTION" specified in this manual.
- If a new owner is to have this product as a result of transfer, etc., be sure to give this manual to the new owner.

# **CONTENTS**

- PRECAUTIONS FOR USE
- INSTALLATION
- CAUTION
- TEST & CLEANING / MOVEMENT & TRANSPORTATION

## 1. SPECIFICATION AND DIMENSION

### 1-1. DIMENSION

### 1-2. SPECIFICATION

#### \* COMPONENTS

## 2. INSTALLATION INSTRUCTIONS

2-1. STEP 1 : Remove the following item(1~4) before turning on the machine.

2-2. STEP 2 : Installation steps

2-3. CALIBRATION

## 3. HOW TO CONTROL AND SET UP

3-1. HOW TO CONTROL

3-2. SET UP

## 4. PART LIST

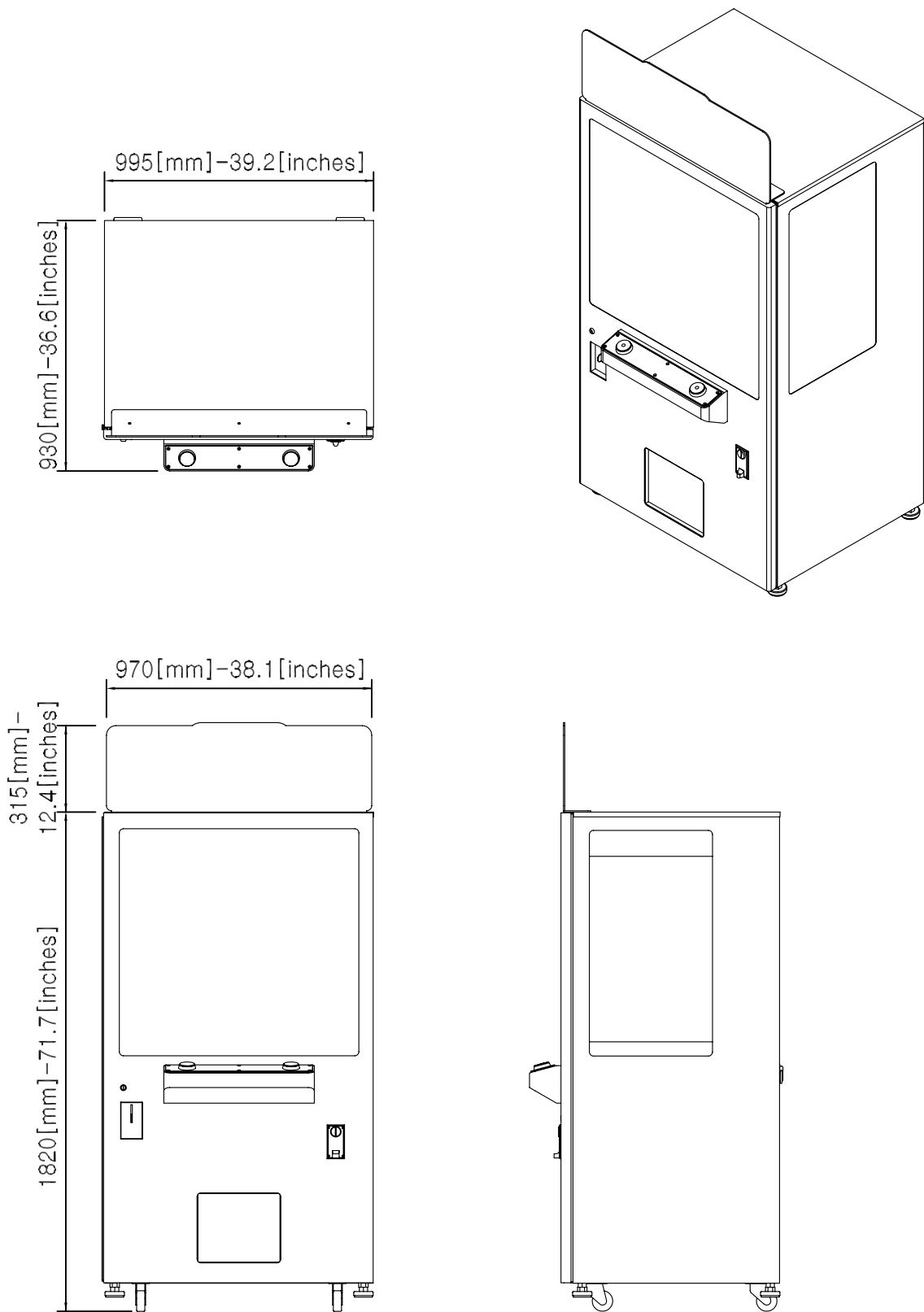
## 5. PIN LAYOUT OF MAINBOARD

## 6. PIN LAYOUT OF SUB-BOARD


## 7. CIRCUIT DIAGRAM

# 1. SPECIFICATION AND DIMENSION

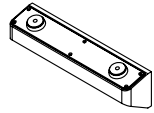




## 1-1. DIMENSION



## 1-2. SPECIFICATION

DESCRIPTION	SPECIFICATION	
DIMENSION (inch)	W995(39.2) x D930(36.6) x H1820(71.7)	
WEIGHT	243 kg	
POWER RATED VOLTAGE RANGE	AC 110V	AC 220V
POWER RATED FREQUENCY RANGE	50 Hz ~ 60 Hz	50 Hz ~ 60 Hz
CONSUMPTION	280 W	200 W
CERTIFICATION		

## COMPONENTS

NO.	PART NAME	SPEC.	QTY
1	BUTTON PANEL ASS'Y	– 	1
2	SCREW BOLT	M4x10L 	12
3	BILLBOARD SHEET	– 	1
4	SCREW BOLT		3
5	MANUAL	– 	1

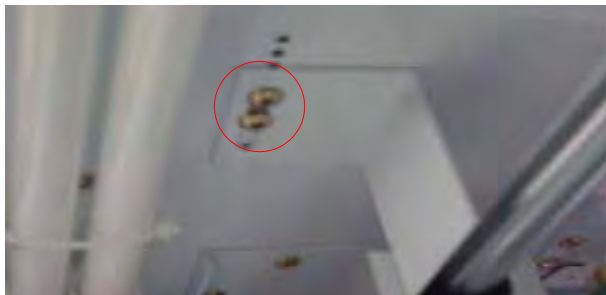
## 2. INSTALLATION INSTRUCTIONS

---

\* Please read this manual before installing Winners' Cube.

2-1. STEP 1 : Remove the following items(1~4) before turning on the machine.

(1)



– TRANSIT BRACKET(WITH SCREW 2 PCS)

(2)



– CABLE TIE

(3)



– SPONGE

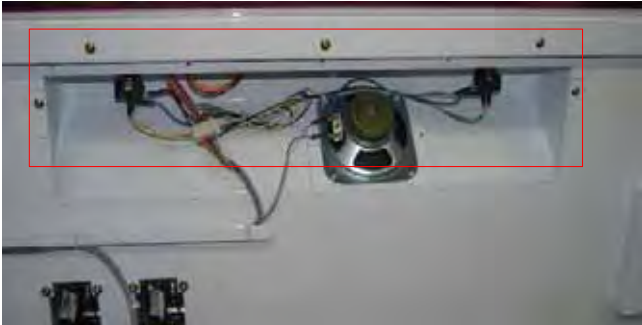
(4)



– CABLE TIE

## 2-2. STEP 2 : Installation steps

1) Assemble the button ass'y by screws.

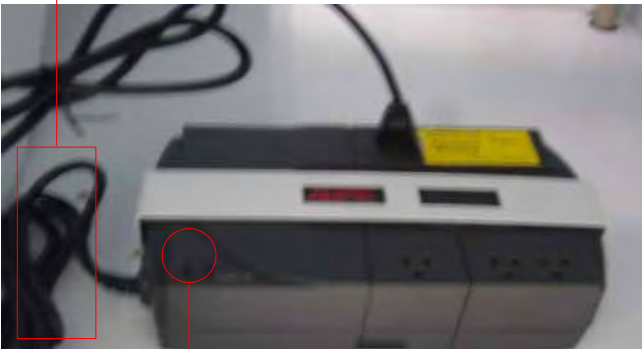


2) Connect the button ass'y harness with speaker harness as follows.



Button ass'y Harness    Speaker Harness

3) Plug the AC Power cord of UPS.



5) Turn on the Main Power switch of the game.



4) Turn on the UPS power S/W at first.

## 2-3. CALIBRATION

8. Hole Y1 Center

\* Press Mode sw \*

1. Press MODE BUTTON, go to "8. Hole Y1 Center" and press MODE BUTTON.

\*It is MODE BUTTON to set the Pole position.

\*\*If the pole is passing X2Y6-X2Y5-X2Y4-X2Y3-X2Y1-X5Y1 step by step, Set is ready then can hear "saving say". Maybe it takes 4 minutes, after upper set is ready. you can see the result by press DOWN BUTTON. The result the pole is passed x2y6, x2y1, x5y1. If pole isn't passed, you have to retry till the pole is passed.

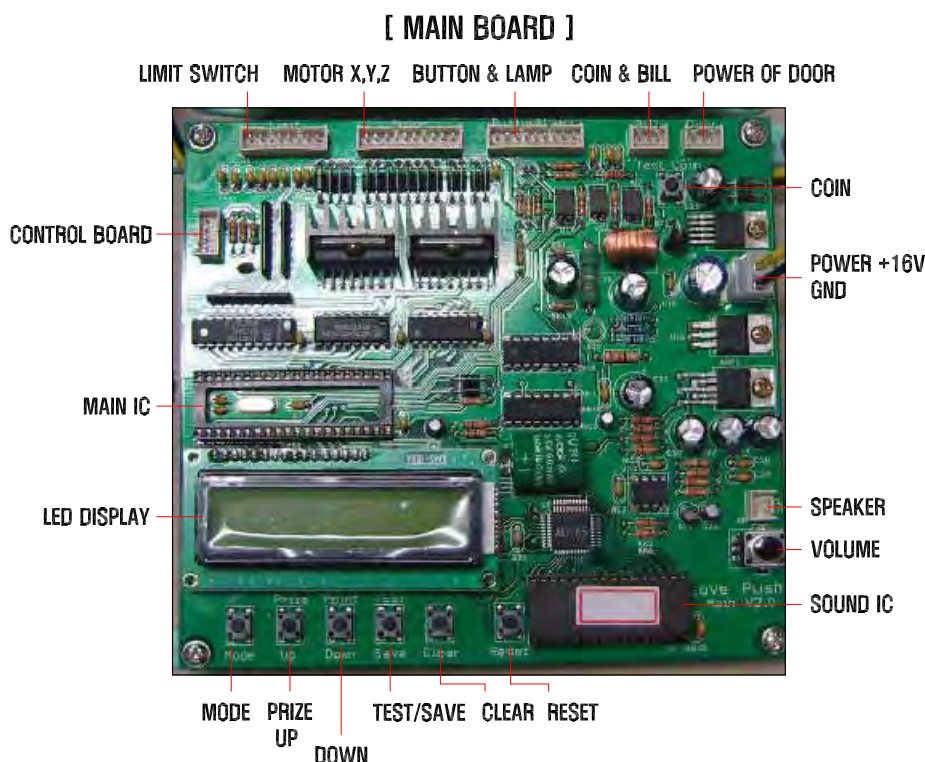
**\* CAUTION \***

**– You have to calibrate the below**

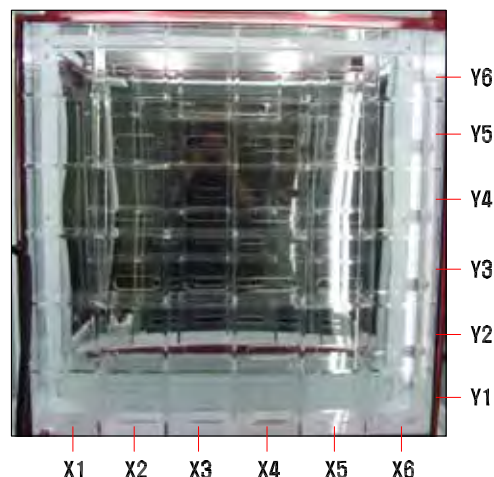
- Machine is installed.
- Machine is moved.
- Main pcb is changed.
- Program IC is changed.
- Any parts is changed.

## 3. HOW TO CONTROL AND SET UP

### 3-1. HOW TO CONTROL



[ EXPLANATION OF PRIZE SHELF ]



1) Function button of main board.

(1) MODE BUTTON

- Mode in / out.

(2) PRIZE & UP BUTTON

- Prize & income check out : Display INCOME & PAYOUT information  
( please refer to manual #7 3-2 SET UP 1) INCOME & PAYOUT Income & Prize check out.
- BASIC FUNTION : Modify a value to upward.

(3) DOWN BUTTON

- BASIC FUNTION : Modify a value to downward.

(4) SAVE & TEST BUTTON

- BASIC FUNTION : Save a modified value.
- SELF TEST : The machine proceeds self test for all the function.  
The function error(s) is indicated as shown on #4) Error code of Page 10.

(5) CLEAR BUTTON

- You can only remove "Today income value" of page 7 (1) income. (V 9.1)
- You must initialize CNT value after modifying to random value. (~ V 8.1)

(6) RESET BUTTON

- Reset a machine.



## 3-2. SET UP

### 1) INCOME & PAYOUT

(1) INCOME : It is displayed total income and today.



- It is always displayed after power on.
- Today Play : Initialized by Clear Button.
- Total Play : Deletion is not available.

Push UP BUTTON in order to move to next step

(2) TOTAL PAYOUT : It is displayed all prize out.



- It is displayed by UP Button while the game is not played.

(3) PAYOUT BY Y-ROW : It is displayed information of Y?-ROW



- It is displayed by UP BUTTON while display is in TOTAL OUT PRIZE.

Y? : "?" is the number of row (From row Y1~Y6).

RND : Payout setting, factory setting is Random and 1/500.

CNT : Number of try to get.

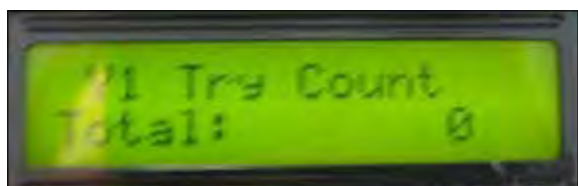
When prize out, press clear button.

and entering menu mode, the value is initialized to zero.

PRZ : Number of prize out.

- If Y? RANDOM value is changed, Y?'s CNT PRZ become to ZERO.

(4) TRY COUNT TOTAL : It is displayed Game try number of Y? ROW  
[VER-9.1]



- Y1~Y6 TRY COUNT : Y? Total try count by row.
- If Y? RANDOM value is changed, Y?'s CNT PRZ become to ZERO.

## 2) MODE MENU

### – Program Version

WINNER'S CUBE  
ANDAMIRO VER 9.1

: It is display the program version.

Hole Yn Random  
N

: It is displayed Y? RANDOM value.

Take following steps to change "Yn" and "N" value.

- "Yn" says Hole number and "N" says Plays.
- "N" Value could be changed by using mode switch.
- "N" value by using up and down switch.

\* Stop blinking "N" value by using mode switch.

(1) Hole Y1 Random

(2) Hole Y2 Random

(3) Hole Y3 Random

(4) Hole Y4 Random

(5) Hole Y5 Random

(6) Hole Y6 Random

(7) Lose Step

- Yn : 1~6, N : 1~999, OFF (Default : 220V 20, 110V 500)
- One winning chance is randomly given among "N" plays.  
(When it is setting by NO.13 random type "A")

Lose Step  
N

: It is displayed Game difficulty.

– Setting a Pole movement distance.

N	1	2	3	4	5	6	7	8	9	10
mm	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0

\* Default : 3

\* It is getting difficult as "N" value is getting bigger.

(8) Hole Y1 Center (Calibration of pole position)

Hole Y1 Center  
Press Mode sw

- It is MODE BUTTON to set the Pole position to correct position.
- VER 9.1 : pole position is pass  
x2y6-x2y5-x2v4-x2y3-x2-y2-x2y1-x5y1 step by step then  
calibration is set up.
- Short cut key : Press "DOWN BUTTON"

(9) Credit set

Credit Set  
1 Credit 1 Coin

Credit	1	2
Coin	1 ~ 4	1

(10) Game Time

Game Time      N Sec

– 10, 15, 20, 25, 30, Default : 20.

(11) Demo Sound

Demo Sound

– Demo sound On / Off.  
\* Default : ON

(12) Interval X2 – When calibration is performed the position of POLE X2 row.  
When calibration is performed, if the pole is not entered you must change the value if the value is increased, the position of pole moved by right.  
\*Default : 52

(13) Interval X5 – When calibration is performed the position of POLE X5 row.  
When calibration is performed, if the pole is not entered you must change the value if the value is increased, the position of pole moved by right.  
\*Default : 78~83

(14) Random Type

Random Type

"N" Type

VER 9.1	TYPE A	One winning chance is given N play randomly N = 0~999
	TYPE B	One winning chance is given N play and if it doesn't happen Nth play because of player's less skill, the one winning chance is given as example below ex) when random value is 10, if player win 13rd play the next winning chance is given 7th play. N = 0~999

(15) Button & Lever

Button & Lever

Button Game

– Button game and Lever game.  
– "N" consists of Button Game and Lever Game.  
If Lever game is chosen, Button has to be changed to Lever system to play game.  
\* Default : Button Game

(16) Menu Exit

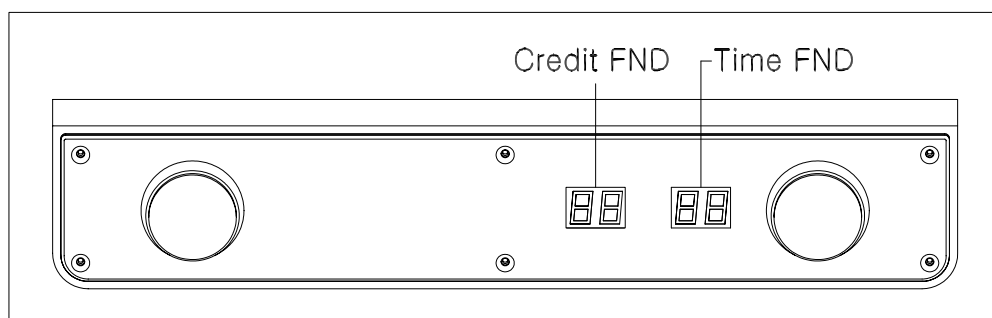
Exit Menu

Press a Mode key

– Exit a Setup Menu

- \* If the size of prize is small, it should be located in the center of cube.
- \* If the prize size is bigger than the cube, the cube size can be increased by taking out Display Acryl A,B,C.

### 3) Error Code



Credit FND	Time FND
11	Er
44	Er
55	Er
66	Er
77	Er

- Check right limit switch of X-Axis.
- Check rear limit switch of Push ass'y.
- Check front limit switch of Push ass'y.
- Check bottom limit switch of Push ass'y.
- Check left limit switch of X-Axis.

# 4. PART LIST

<div>1</div> 	<div>2</div> 	<div>3</div> 	<div>4</div> 	<div>5</div> 	<div>6</div> 	<div>7</div> 
<div>8</div> 	<div>9</div> 	<div>10</div> 	<div>11</div> 	<div>12</div> 	<div>13</div> 	<div>14</div> 
<div>15</div> 	<div>16</div> 	<div>17</div> 	<div>18</div> 	<div>19</div> 	<div>20</div> 	<div>21</div> 
<div>22</div> 	<div>23</div> 	<div>24</div> 	<div>25</div> 	<div>26</div> 	<div>27</div> 	<div>28</div> 
<div>29</div> 	<div>30</div> 	<div>31</div> 	<div>32</div> 	<div>33</div> 	<div>34</div> 	<div>35</div> 
<div>36</div> 	<div>37</div> 	<div>38</div> 	<div>39</div> 	<div>40</div> 	<div>41</div> 	<div>42</div> 
<div>43</div> 						

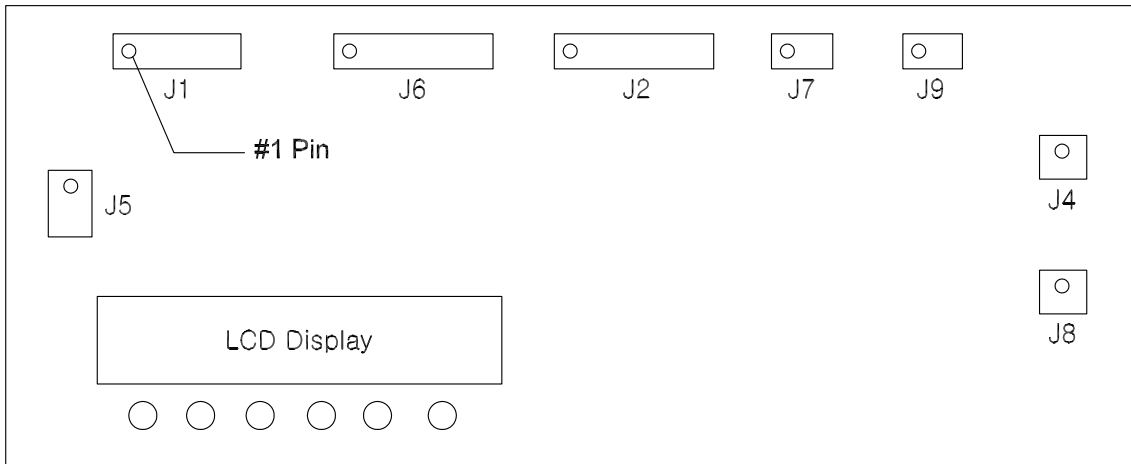
NO.	CODE NO.	PART NAME	SPEC.	Q'ty	REMARKS
①	MWIC0PAR001	Belt	860XL W9.5	1	
②	MWIC0PAR003	Button Side		1	
③	MWIC0PAR004	Botton Up		1	
④	MZZZ0COS024	Coin Selector		2	
⑤	MWIC0PAR005	Cover A/S		1	
⑥	MWIC0PAR006	Button Acryl		1	
⑦	MWIC0PAR007	Display Acryl A		30	
⑧	MWIC0PAR008	Display Acryl B		8	
⑨	MWIC0PAR009	Display Acryl C		4	
⑩	MWIC0PAR010	Door Acryl L		1	
⑪	MWIC0PAR011	Door Acryl R		1	
⑫	MWIC0PAR012	Prize Out Acryl	OLD TYPE	1	
⑫	MWIC0PAR071	Prize Out Acryl	NEW 201002	1	
⑭	MWIC0PAR014	FND-1 PCB Ass'y	CREDIT	1	
⑮	MWIC0PAR015	FND-2 PCB Ass'y	TIME	1	
⑯	MWIC0PAR015	Harness Large		1	
⑰	MWIC0PAR016	Harness Small		1	
⑰	MWIC0PAR018	Main PCB Ass'y		1	
⑳	MWIC0PAR019	Sub PCB Ass'y		1	
㉑	MWIC0PAR020	Micro S/W	5A 125~250VAC Roller	2	Push Ass'y
㉒	MWIC0PAR021	Micro S/W	5A 125~250VAC	1	Push Ass'y
㉓	MWIC0PAR022	Micro S/W	SZM-V16-5FA-63	2	X-Axis
㉔	MWIC0PAR023	Micro S/W	SZM-V16-FA-63	1	Y-Axis
㉕	MWIC0PAR080	Micro S/W	V16-FA-63 19214C	2	AC MOTOR
㉖	MWIC0PAR024	Motor	KGC-0083 12V 7500RPM	1	X-Axis
㉗	MWIC0PAR025	Motor	KWA-0255-IMF-04	1	Push Ass'y
㉙	MWIC0PAR061	Stepping Motor Ass'y	4S56Q-08254SG/K6G3C	1	Y-Axis
③①	MWIC0PAR029	Power Switch		1	
③②	MWIC0PAR032	Front Glass	8.0t	1	
③③	MWIC0PAR033	Side Glass	8.0t	2	
③④	MWIC0PAR034	Billboard Sheet		1	
③⑤	MWIC0PAR035	Front Sheet Upper		1	

NO.	CODE NO.	PART NAME	SPEC.	Q'ty	REMARKS
③⑥	MWIC0PAR036	Front Sheet Upper		1	
③⑦	MWIC0PAR037	Side Sheet Upper		2	
③⑧	MWIC0PAR038	Side Sheet Upper		2	
③⑨	MWIC0PAR039	Side Sheet Left		1	
④⑩	MWIC0PAR040	Side Sheet Right		2	
④①	MWIC0PAR041	Speaker	5W 8Ohm	1	
④③	AWIC0PAR002	Push Ass'y		1	
Parts for 110V					
①③	MWIC0PAR043	Ballaster 110V	36W x 2	3	
①⑧	MWIC0PAR017	Lamp	PL 36W	6	
②⑧	MWIC0PAR026	Motor AC 110V	KAE-6130-TCB	1	
③①	MWIC0PAR030	Power SMPS 110V	16V 7A, 5V 2A	1	
Parts for 220V					
①③	MWIC0PAR043	Ballaster 220V	FPL 36W x 2	1	
①⑧	MWIC0PAR017	Lamp	PL 36W	2	
②⑧	MWIC0PAR045	Motor AC 220V	KAE-6130-TCB	1	
④②	MWIC0PAR044	Lamp T5	220V 21W	3	
④④	MWIC0PAR042	Power SMPS 220V	15V 7A, 5V 2A KP-1033	1	

\* Please check the follows. The parts which have a same picture NO. have a other code NO. according to it's spec. so please check the item with attention.



## 5. PIN LAYOUT OF MAINBOARD



– J1(Limit Connector)

1	Horizontal Left Limit SW(+)
2	Horizontal Right Limit SW(+)
3	Vertical Up Limit SW(+)
4	Vertical Down Limit SW(+)
5	Progress Bar in Limit SW(+)
6	Progress Bar Out Limit SW(+)
7	Progress Bar Stop Limit SW(+)
8	Ground

– J6(Motor Connector)

1	Step Motor A
2	Step Motor /A
3	Step Motor B
4	Step Motor /B
5	Horizontal DC Motor(+)
6	Horizontal DC Motor(-)
7	Push DC Motor(+)
8	Push DC Motor(-)
9	DC +13V
10	DC -13V

– J2(Button & Lamp Connector)

1	Display FND Data Signal
2	Display FND Clock Signal
3	Display FND Strobe Signal
4	Ground
5	Vertical Button Lamp(-)
6	Horizontal Button Lamp(-)
7	Vertical Button SW(+)
8	Horizontal Button SW(+)
9	DC +15V

– J7(Sub Connector)

1	Credit In Signal
2	Ground
3	DC +15V

– J5(Sub PCB Connector)

1	RS-232 Rx Data
2	RS-232 Tx Data
3	NC
4	Ground

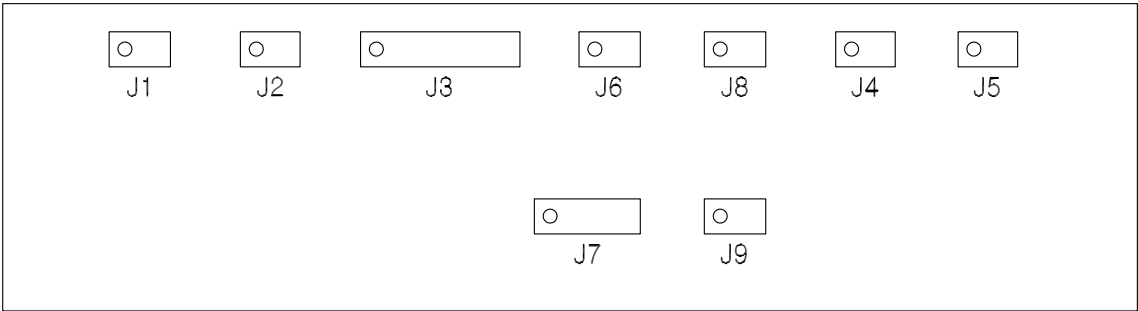
– J4(Power Connector)

1	DC +15V
2	Ground

– J8(Speaker Connector)

1	Speaker(+)
2	Ground

# 6. PIN LAYOUT OF SUB-BOARD



– J1(115VAC Connector)

1	115VAC
2	115VAC

– J5(B Coin Selector Connector)

	Signal(+)
	Ground
	DC +12V

– J2(AC Motor Connector)

1	Door AC Motor
2	Door AC Motor

– J7(Main PCB Connector)

	RS-232 Tx Data
	RS-232 Rx Data
	NC
	Ground

– J3(Bill Acceptor Connector)

1	Bill Acceptor 115VAC
2	Bill Acceptor 115VAC
3	NC
4	Signal(+)
5	Signal(–)

– J9(Main PCB Connector)

	Credit Out Signal
	Ground
	DC +15V

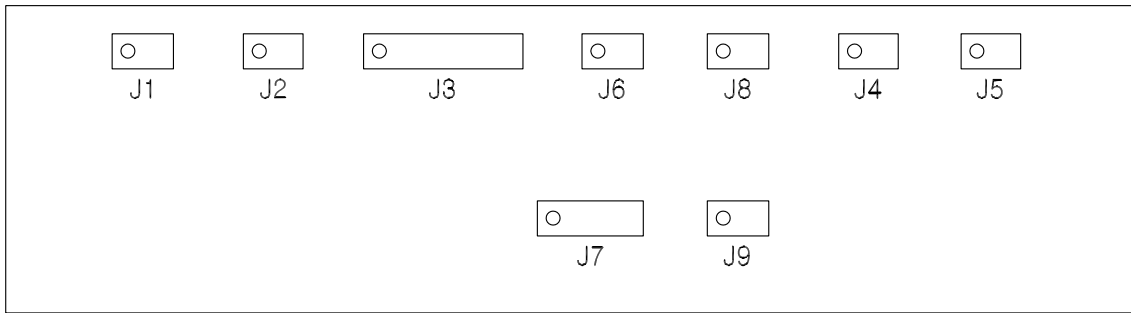
– J6(NC Connector)

1	NC
2	Ground

– J4(A Coin Selector Connector)

1	Signal(+)
2	Ground
3	DC +12V

## 7. PIN LAYOUT OF SUB-BOARD



– J1(115VAC Connector)

1	115VAC
2	115VAC

– J5(B Coin Selector Connector)

	Signal(+)
	Ground
	DC +12V

– J2(AC Motor Connector)

1	Door AC Motor
2	Door AC Motor

– J7(Main PCB Connector)

	RS-232 Tx Data
	RS-232 Rx Data
	NC
	Ground

– J3(Bill Acceptor Connector)

1	Bill Acceptor 115VAC
2	Bill Acceptor 115VAC
3	NC
4	Signal(+)
5	Signal(–)

– J9(Main PCB Connector)

	Credit Out Signal
	Ground
	DC +15V


– J6(NC Connector)

1	NC
2	Ground

– J4(A Coin Selector Connector)

1	Signal(+)
2	Ground
3	DC +12V





# WINNERS' CUBE....