

# SERVICE MANUAL

## WINNERS' CUBE....



IMPORTANT

- ▶ 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 the power cord 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.

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## 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.

## 1. Specification



Description	Specification	
Power Rated Voltage Range	110 V, 50 ~ 60 Hz	220 V, 50 ~ 60 Hz
Power Consumption	280 W	200 W
Dimension (inch)	W980(38.5) x D800(31.4) x H1820(71.6)	
Weight	261 kg	

## 2. Item check list

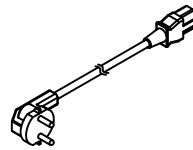
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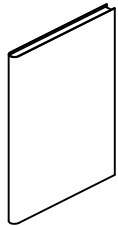
②



③



④



NO.	PART NAME	SPEC.	QUANTITY	CODE NO.
1	Button Panel Ass'y	-	1	AWIC0PAR001
1-1	Screw	M4 x 16	12	-
2	Billboard Sheet	-	1	MWIC0PAR003
2-1	Screw	M4 x 16	3	-
3	AC Power Cord	110V / 220V	1	-
4	MANUAL	-	1	-

### 3. How to control and set up the game

#### 1) Overview of Main Board.

##### (1) MODE SW

Mode in / out.

##### (2) UP SW

- Check-out of the dispensed number of prize.
- Switch a Mode.
- Modify a value to upward.

##### (3) DOWN

- Switch a Mode
- Modify a value to upward.

##### (4) SAVE

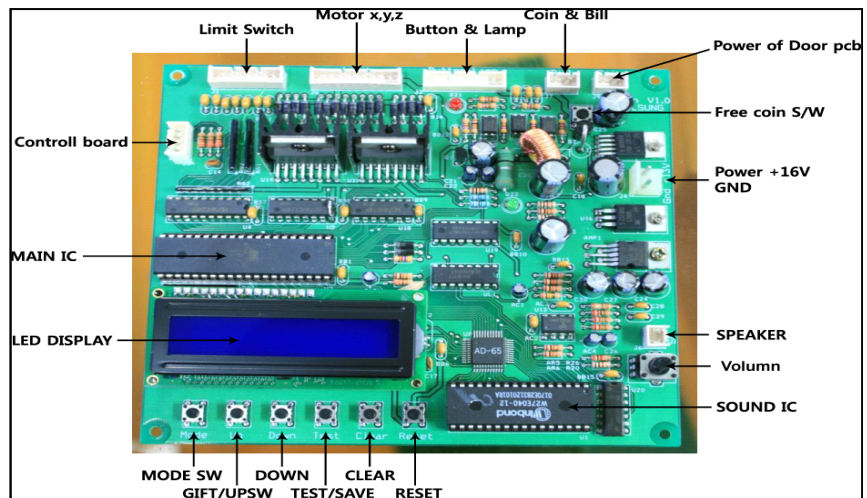
- Selftest.
- Save a value modified.

##### (5) CLEAR

- Initialize values.

##### (6) RESET

- Reset a machine.

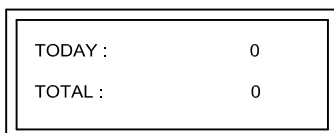


							Y6
							Y5
							Y4
							Y3
							Y2
							Y1
X1	X2	X3	X4	X5	X6		

Explanation of Prize Shelf

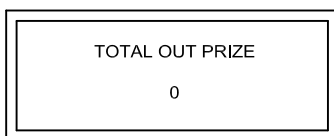
#### 2) Income & Payout

##### (1) Income



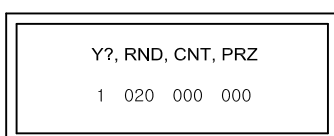
- It is always displayed after power on.
- Today Play : Initialized by Clear Button.
- Total Play : Deletion not available.

##### (2) Total Payout



- It is displayed by UP Button while the game is not playing.
- Total Out Prize : Initialized by Clear Button

##### (3) Payout by Y-Row

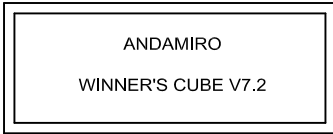


- It is displayed by UP Button while display is in TOTAL OUT PRIZE.
- Y? : Number of Row, ? is 1 ~ 6.
- RND : Payout setting, current setting is Random and 1/20.
- CNT : Number of try to get.
- When prize out, press clear button, power turn off and entering menu mode, the value is initialized to zero.
- PRZ : Number of prize out.

\*\* Total play of Y? = RND \* PRZ + CNT, If CNT not initialized.

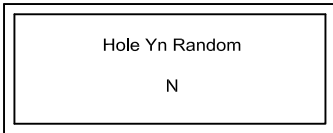
### 3) MODE Menu

#### (1) Program Version



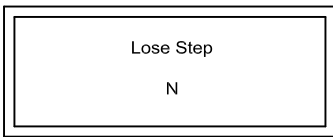
- It is **displayed** for 2 seconds after power on.

#### (2) Payout Set-up



- "n" says Hole number and "N" says Plays.
- n : 1~6, N : 1~250, OFF, Default : 20.
- One winning chance is randomly given among "N" plays.

#### (3) Pole movement set-up



- 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

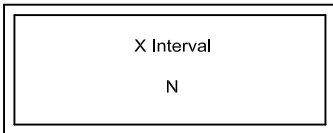
Default : 4

#### (4) Setting a Play time.



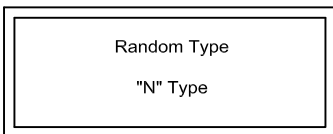
- 10, 15, 20, 25, 30, Default : 20.

#### (5) X Interval



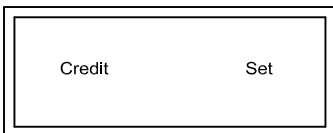
- It is Factory Setting Function about Pole Position of X-axis.
- N : 1~200, Default : 103
- Do not change the default value.

#### (6) Winning Chance



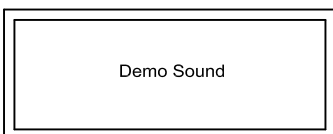
N	Description
A	One winning chance is randomly given among 20 plays
B	One winning chance is given 20th plays

#### (7) Setting a Credit.



Coin	1 ~ 4	1
Credit	1	2

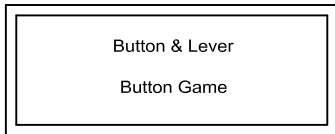
#### (8) Demo Sound



- Demo sound On / Off.

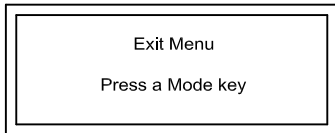


(9) Button & Lever



- Switch Button game and Lever game.  
\* Required Main PCB or Program IC Change.

(10) Exit



- Exit a Setup Menu

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

4) 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. Parts List

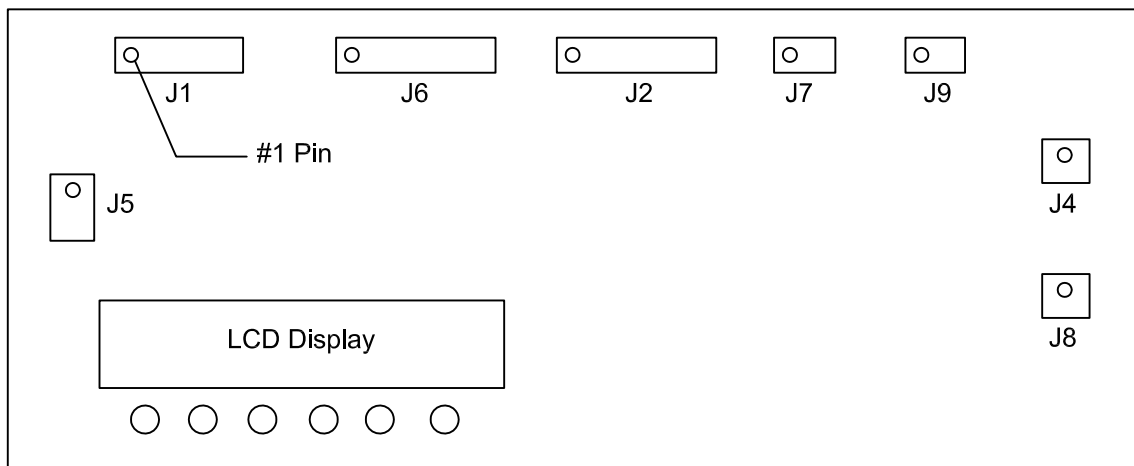


No	Part number	Description	Specification	Q'ty	Remarks
①	MWIC0PAR001	Belt	860XL W9.5	1	
②	MWIC0PAR003	Button Side		1	
③	MWIC0PAR004	Button Up		1	
④	MZZZ0COS024	Coin Selector		2	
⑤	MWIC0PAR005	Cover A/S		1	

No	Part number	Description	Specification	Q'ty	Remarks
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		1	
⑬	MWIC0PAR013	Ballaster	36W	3	
⑭	MWIC0PAR014	FND PCB Ass'y		2	
⑮	MWIC0PAR015	Harness Large		1	
⑯	MWIC0PAR016	Harness Small		1	
⑰	MWIC0PAR017	Lamp	36W	4	220V : 6Ea
⑱	MWIC0PAR018	Main PCB Ass'y		1	
⑲	MWIC0PAR019	Sub PCB Ass'y		1	
⑳	MWIC0PAR020	Micro S/W	5A 125~250VAC Roller	2	Push Ass'y
㉑	MWIC0PAR021	Micro S/W	5A 125~250VAC	1	Push Ass'y
㉒	MWIC0PAR022	Micro S/W	SZM-V16-5FA-63	2	X-Axis
㉓	MWIC0PAR023	Micro S/W	SZM-V16-FA-63	1	Y-Axis
㉔	MWIC0PAR024	Motor	KGC-0083 12V 7500RPM	1	X-Axis
㉕	MWIC0PAR025	Motor	KWA-0255-IMF-04	1	Push Ass'y
㉖	MWIC0PAR026	Motor AC	KAE-6130-TCB	1	
㉗	MWIC0PAR027	Motor Stepping	4S56Q-08254SG	1	Y-Axis
㉘	MWIC0PAR028	Gear Box Motor Stepping	K6G3C	1	
㉙	MWIC0PAR029	Power Switch		1	
㉚	MWIC0PAR030	Power SMPS	16V 7A, 5V 2A	1	
㉛	MWIC0PAR032	Front Glass	8t	1	
㉜	MWIC0PAR033	Side Glass	8t	2	
㉝	MWIC0PAR034	Billboard Sheet		1	
㉞	MWIC0PAR035	Front Sheet Upper		1	
㉟	MWIC0PAR036	Front Sheet Lower		1	

No	Part number	Description	Specification	Q'ty	Remarks
③⑥	MWIC0PAR037	Side Sheet Upper		2	
③⑦	MWIC0PAR038	Side Sheet Lower		2	
③⑧	MWIC0PAR039	Side Sheet Left		1	
③⑨	MWIC0PAR040	Side Sheet Right		2	
④①	MWIC0PAR041	Speaker	5W 8Ohm	1	
④②	MWIC0PAR044	Lamp T5	220V 21W	3	
④③	AWIC0PAR002	Push Ass'y		1	
Parts for 220V					
①③	MWIC0PAR043	Ballaster	36W	1	
①⑦	MWIC0PAR017	Lamp	220V	2	
②⑥	MWIC0PAR045	Motor AC	KAE-6130-TCB	1	
③①	MWIC0PAR042	Power SMPS	15V 7A, 5V 2A KP-1033	1	

## 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

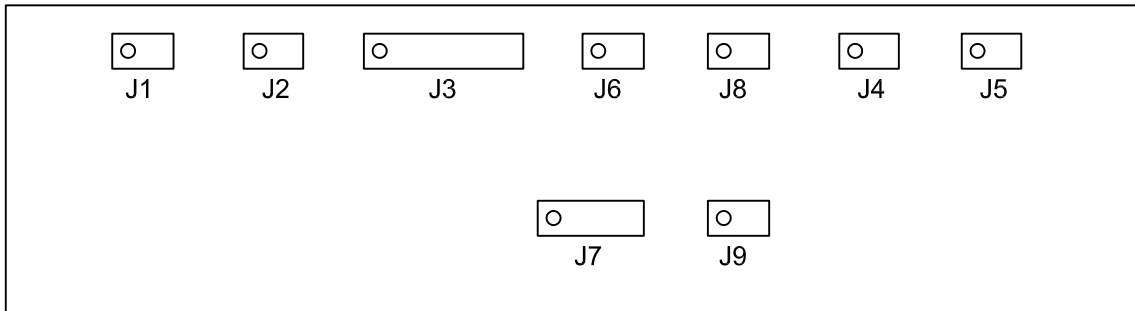
### - J4(Power Connector)

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)

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

### - J2(AC Motor Connector)

1	Door AC Motor
2	Door AC Motor

### - J7(Main PCB Connector)

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

### - J3(Bill Acceptor Connector)

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

### - J9(Main PCB Connector)

1	Credit Out Signal
2	Ground
3	DC +15V

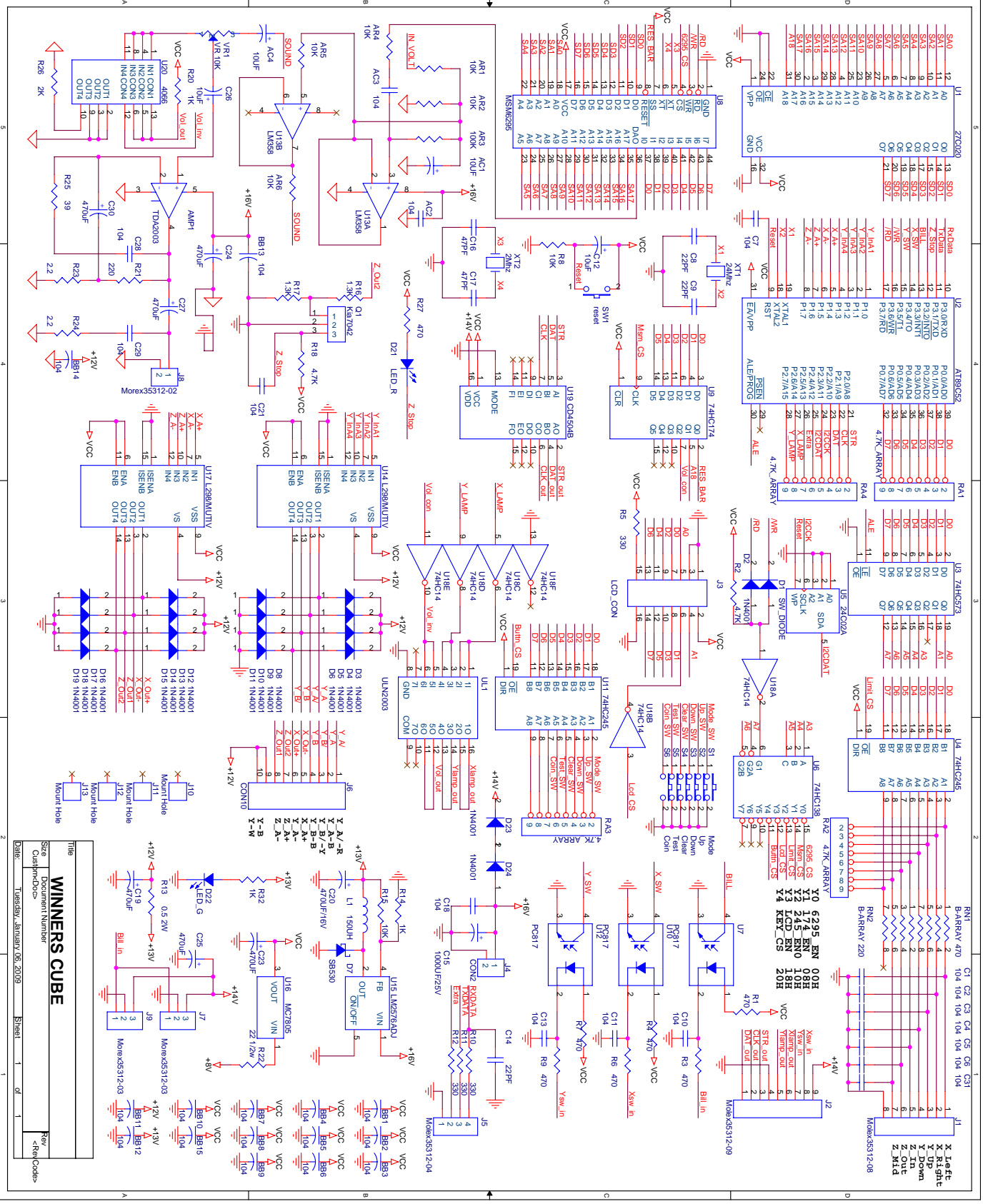
### - J6(NC Connector)

1	NC
2	Ground

### - J4(A Coin Selector Connector)

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

# 7. Circuit Diagram



Size	Document Number	Date	Version
A4	WINNERS-CUBE	2009-06-20	1.0

## WINNERS CUBE

# WINNERS' CUBE...

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