# SERVICE MANUAL

**LOBSTER ROBOT**

Ver 1.0

ISSUEDATE:Jan.13, 2014

**STOP**

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 safty 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 resu t 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 bend the power cord excessively.
- Do not heat the power cord.
- Do not bind the power cord.
- Do not sandwich the power cord.
- Do not modify the power cord.
- Do not twist the power cord.
- Do not pull the power cord.
- Do not stand on 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.**

∗ Electromagnetic wave may cause unexpected noise from speaker.

# 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 of 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 form the machine.**

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

**Avoid excessive force while moving the machine.**
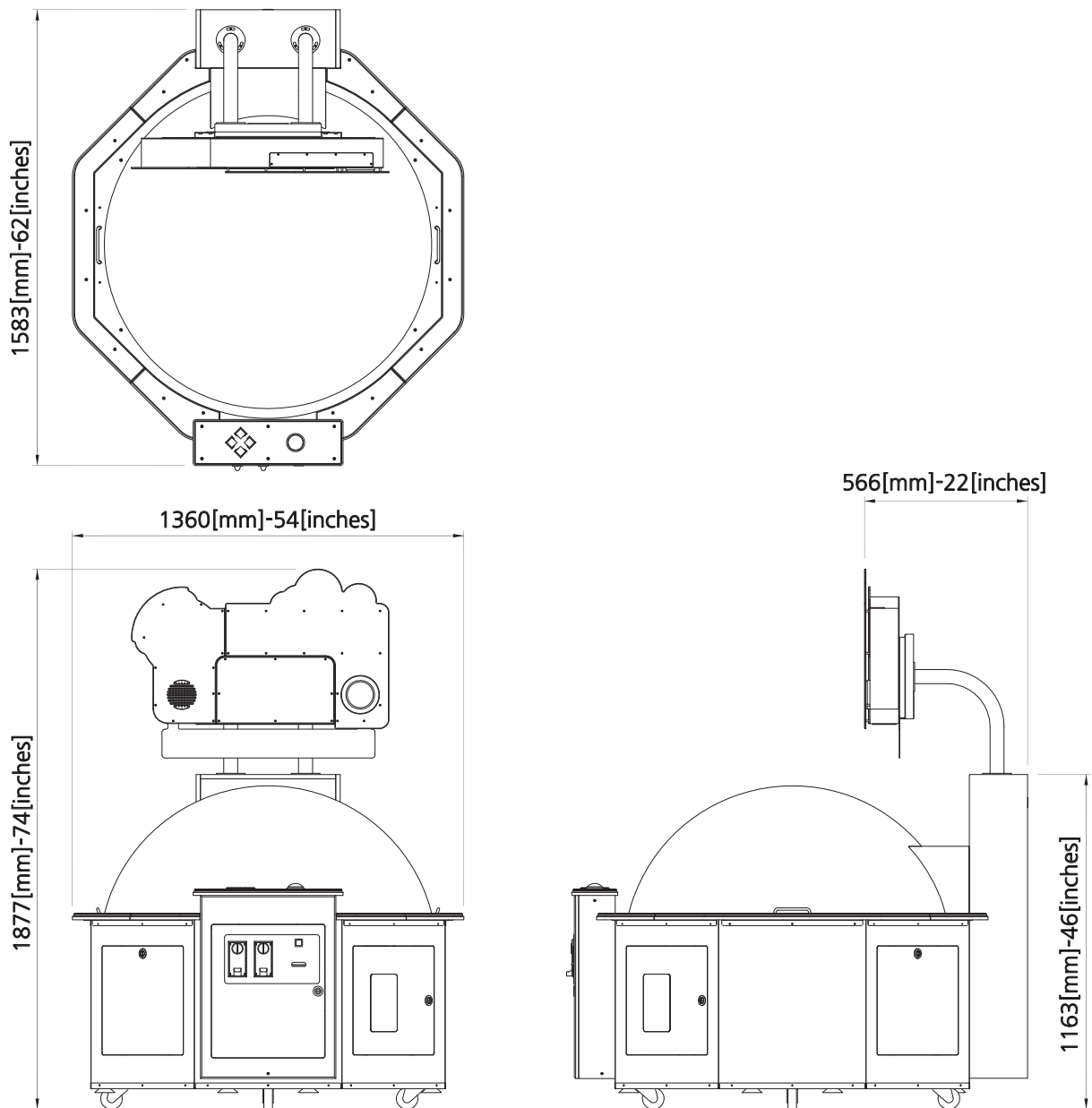
### PRECAUTIONS IN HANDLING

- 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.
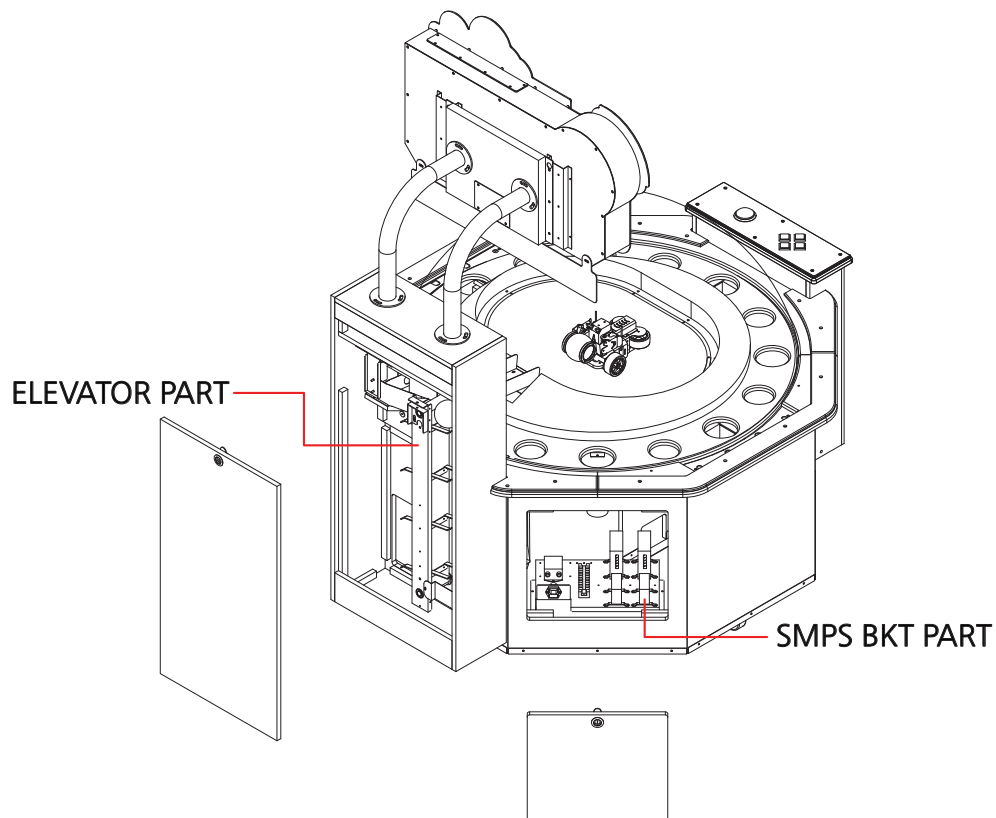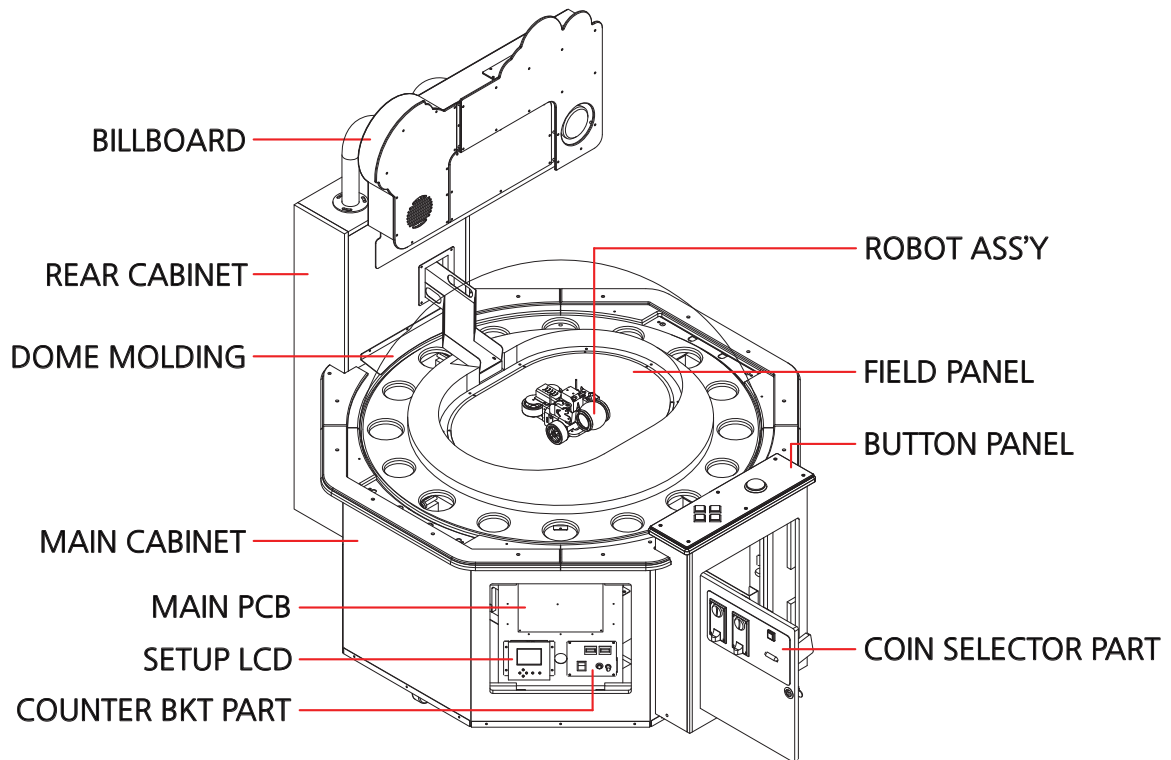
# CONTENTS

# 1. SPECIFICATION AND DIMENSION

## 1-1. DIMENSION



## 1-2. SPECIFICATION

| DIMENSION (W x D x H) | 1360x 1583 x 1877 (mm) |
|---|---|
| PACKING DIMENSION (W x D x H) | 1750 x 1460 x 1980(mm) |
| WEIGHT (kg) | 202 kg [ WEIGHT INCLUDING : 235 kg ] PACKAGING |
| VOLTAGE | AC 110V ( or AC 220V ) |
| FREQUENCY RANGE | 50, 60Hz |
| CONSUMPTION | 130 W |
| CERTIFICATION | - |

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## 1-3. NAME OF PARTS

BILLBOARD

REAR CABINET

DOME MOLDING

MAIN CABINET

MAIN PCB

SETUP LCD

COUNTER BKT PART

ROBOT ASS'Y

FIELD PANEL

BUTTON PANEL

COIN SELECTOR PART

ELEVATOR PART

SMPS BKT PART

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## 1-4. STICKER LOCATION
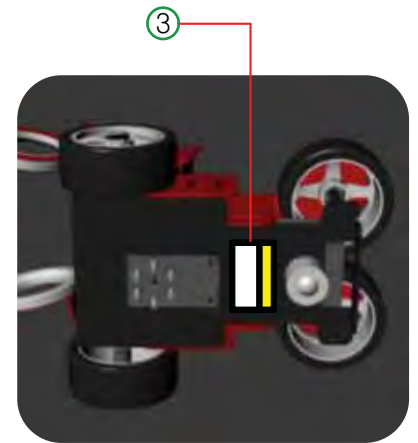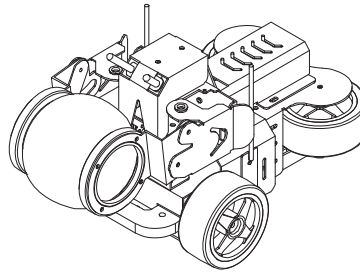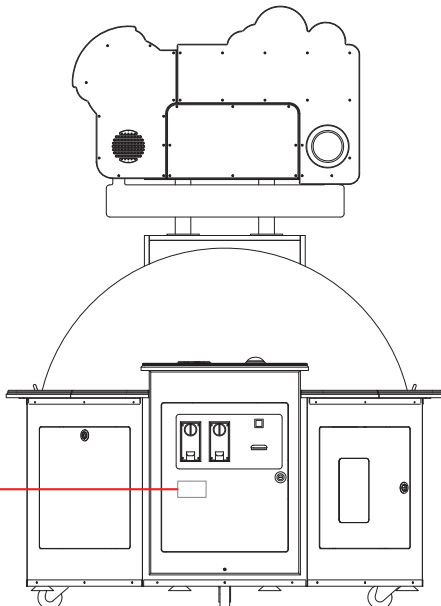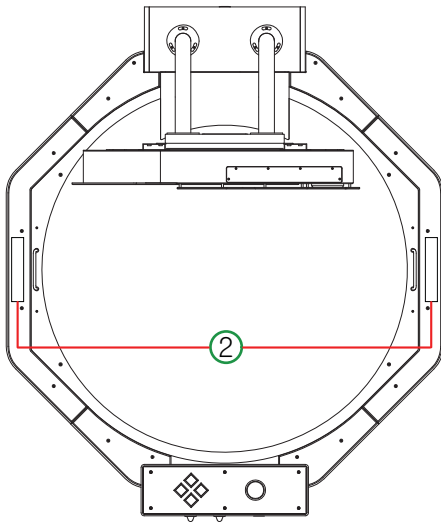


① 

| MODEL NAME | LOBSTER ROBOT |
|---|---|
| PRODUCT S/N | – |
| MAIN BOX S/N | – |
| LCD S/N | – |
| CERTIFICATE | – |

MADE IN KOREA

Koyang-si, Kyouggi-do,Korea  Phone:82-31-909-2100

② 
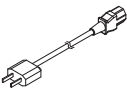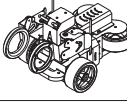


- Please be careful that potential risk of the hand or head injury when opening a DOME, Please be noted the electrodes plates may get damaged from allowing water or any objects.

③ 

⚠ CAUTION

Turn off power during Robot is not used.

- Please turn off a Robot when not to operate.

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## 1-5. COMPONENTS

| NO. | PART NAME | SPEC. | | QTY |
|-----|-----------|-------|-----|-----|
| 1 | AC POWER CORD | 110V or 220V | | 1 |
| 2 | KEY | 6001 | | 2 |
| 3 | KEY | 7001 | | 2 |
| 4 | BOLT | M4x10L | | 8 |
| 5 | WRENCH | 2.5mm, 4mm | | 1 |
| 6 | BALL | – | | 10 |
| 7 | ROBOT ASS'Y | – | | 2set |
| 8 | MANUAL | – | | 1 |

## [ OPTION ] POP ASS'Y

| NO. | PART NAME | SPEC. | | QTY |
|-----|-----------|-------|-----|-----|
| 1 | BOLT | M6x16L | | 6 |

# 2. INSTALLATION

## 2-1. INSATALLATION

- Need to have installation place.
  Maintenance Zone & Play zone should have at least
  2000mm x 2500mm each.
  IMPORTANT
- Once you set up the machine with required game-play area,
  when installing this product, set the 4 leg levelers evevly on
  the floor and make sure that the product is installed stably in
  a horizontal position.
  Otherwise the set winning percentage can be twisted.



NUT

ADJUSTER        CASTER

PLAY ZONE +
MAINTENANCE ZONE

2000mm

2500mm

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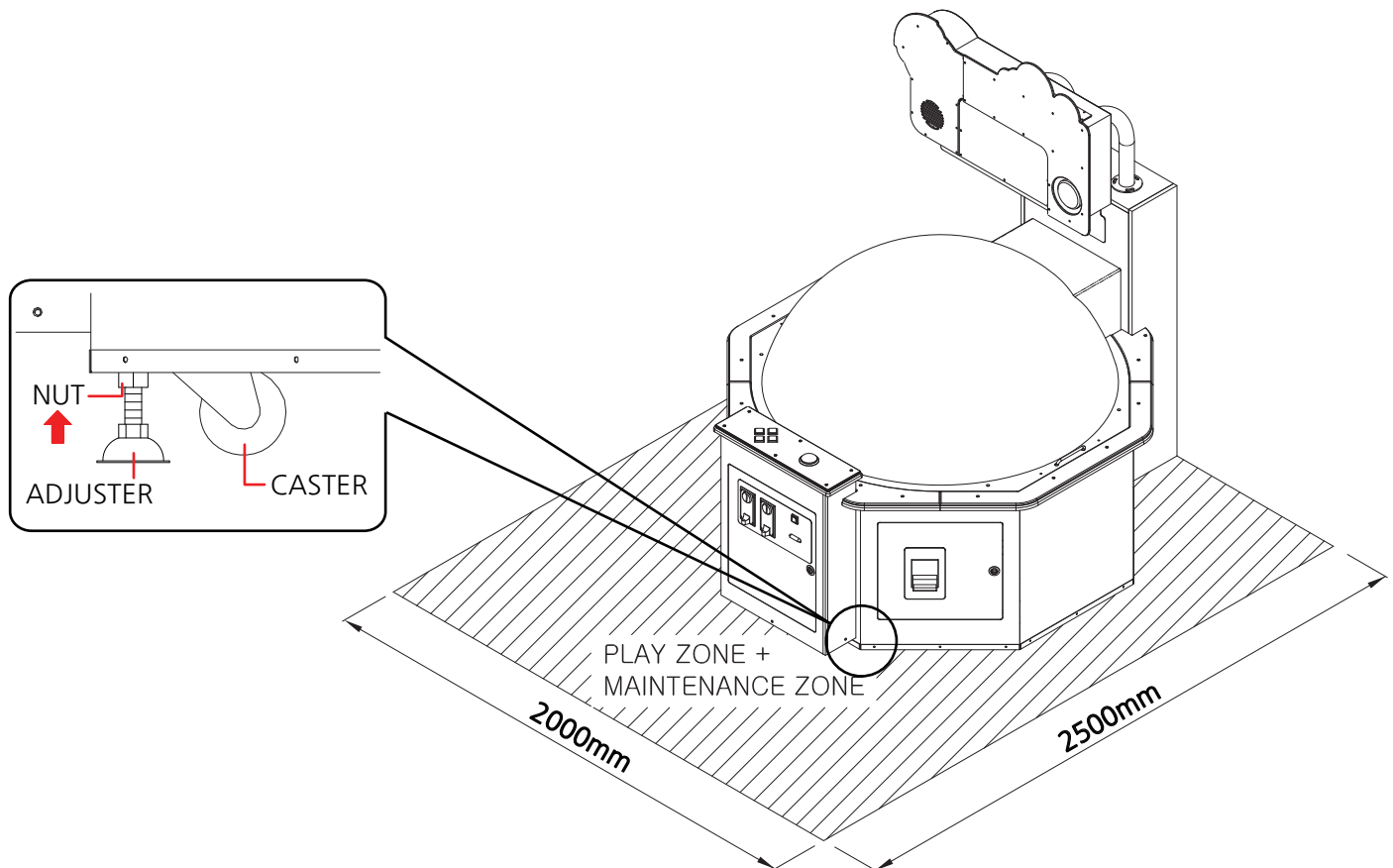
## 2-2. POP INSTALLATION

1
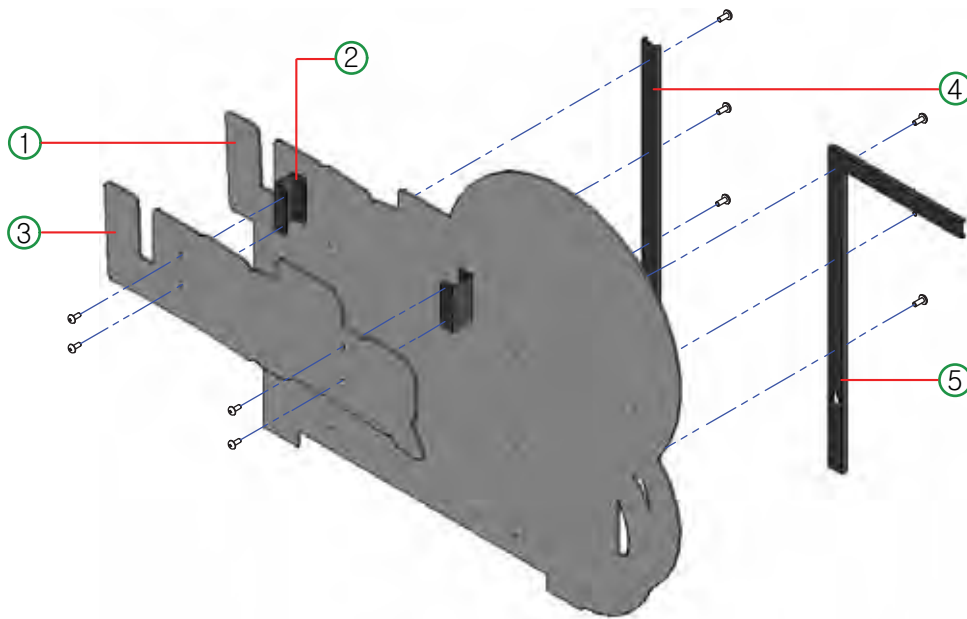
1) FIX ②BILLBOARD POP FIX BKT & BILLBOARD POP FRONT INTO ①BILLBOARD POP REAR
   FORMAX [M4 bolts, 8 places]

2) AND THEN FIX④BILLBOARD POP SUPPORT BKT & ⑤BILLBOARD POP SUPPORT BKT-B
   [M4 bolts, 6 places]

2
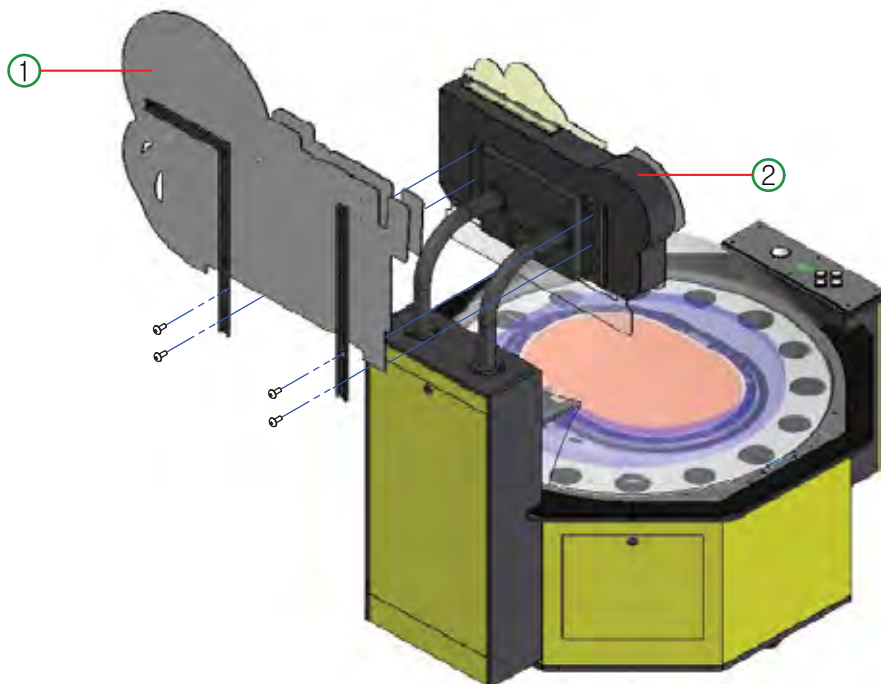
1) FIX ASSEBLED ①BILLBOARD POP INTO ②BILLBOARD FIXED BKT  [M6 bolts, 4 places]

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3
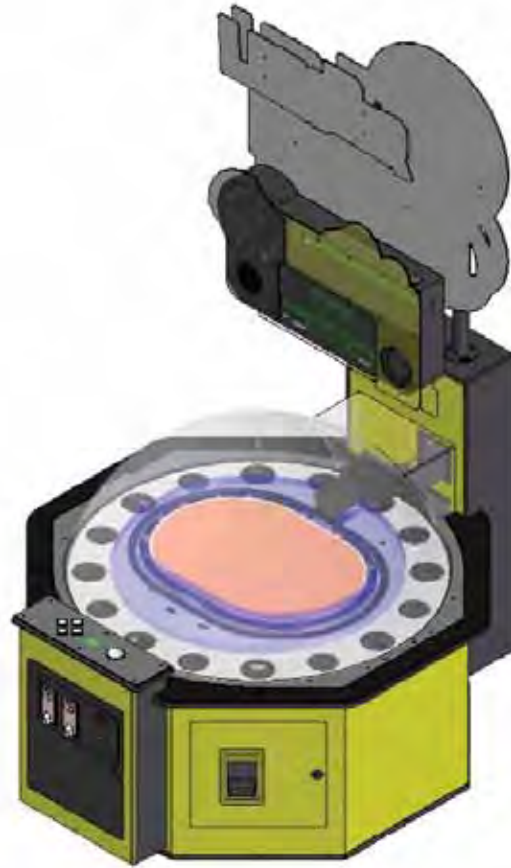


1) LIKE 3 ATTACH BILLBOARD POP TO THE MACHINE.

# 3. PRODUCT FEATURE AND ADVANTAGE

**3-1.** This is a mechanical ticket redemption game to control a robot mechanism carrying out the balls.

**3-2.** Robot is always being an object of children's dream.

**3-3.** FUN + REDEMTION

**3-4.** A ticket redemption game by 100% user skills.

**3-5.** Unique Game Elements.

**3-6.** Opened play field to increase visibility and accessibility.

**3-7.** Robot Specifications

- Robot mobile BLDC (Brushless) Motors apply :
  The life of motor is permanent because of no motor Brush wear issue.

- ARM Motion Servo Motor applies :
  Apply Precision ARM Motion Servo Motor with metal gears for a long life.

- Surge protection circuit applies :
  To avoid electric shock and static electricity applied to a power surge protection circuit

- 2cell Li-ion batteries apply :
  For temporary power supply issue, adapting a 2cell lithium-ion battery.

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# 4. HOW TO PLAY (Basic)



1) Control the robot a given period time.

2) Get the points by putting the ball in the rotary hole.

3) If achieve a CHALLENGE SCORE, get the number of tickets of the score.

4) JP game method is the way of grasp a lamp.



Based on the moving direction of the robot



CATCH    DROP
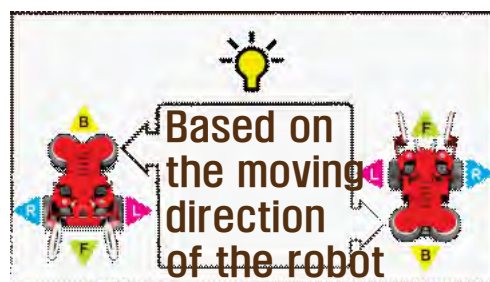
# 5. DIRECTION CONTROLLER
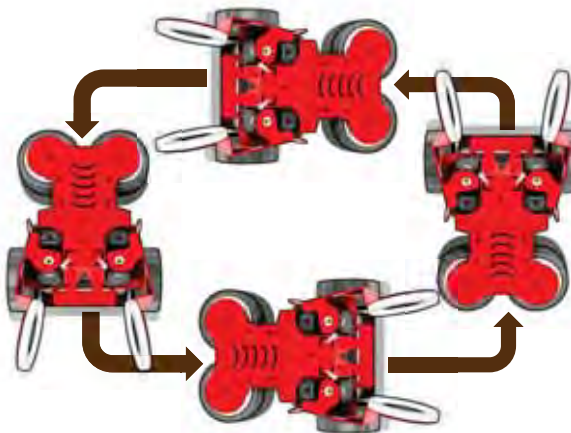




BUTTON TYPE

[OPTION] JOYSTICK TYPE
_ Possible a future replacement

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# 6. GAME RULES

## \* GAME RULES FOR AIMING HIGH SCORES

- CHALLENGE SCORE : If achieved a challenge score, compensate a high-ticket reward.

- BONUS GAME : JP BONUS GAME (Manually Stop)

- ??? HOLE : Get randomly the point from 100 to 1000 points.

- DOUBLE BONUS : Get double Points for the limited time.

Present Challenge scores

↓

Playtime is 60seconds.

0 to 15 seconds before the time over.

↓

Double Bonus Time

↓

Time Over

↓

Bonus Game(JP GAME)

↓

Game Over
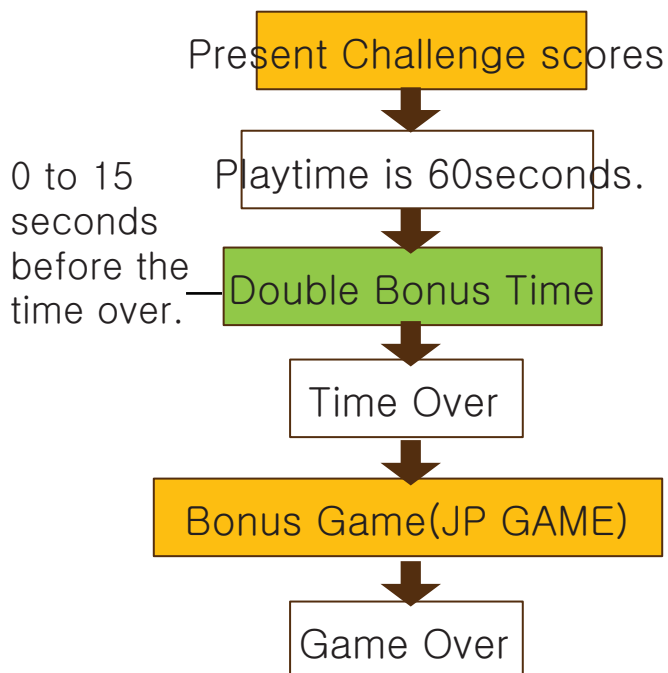
# 7. SETUP SETTING

## 7-1. MACHINE SETUP

### 1. HOW TO ENTER SETUP MENU

1 There is "Control panel" inside cabinet, User may set any setting using following.

LCD

COIN COUNTER    TICKET COUNTER

ON

OFF    SERVICE  VOLUME

AC S/W
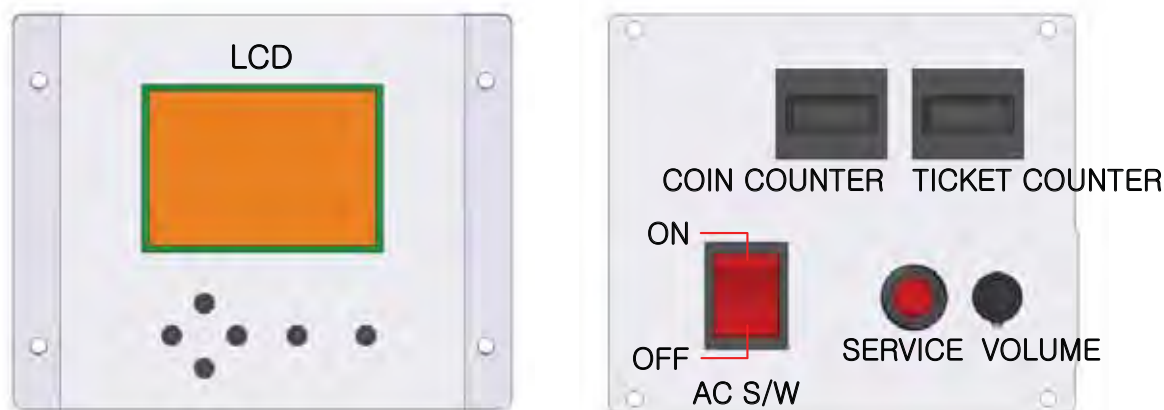
[ CONTROL PANEL ]

### 2. BUTTON INSTRUCTIONS FOR USE

MENU/    TEST/
SELECT    CANCEL
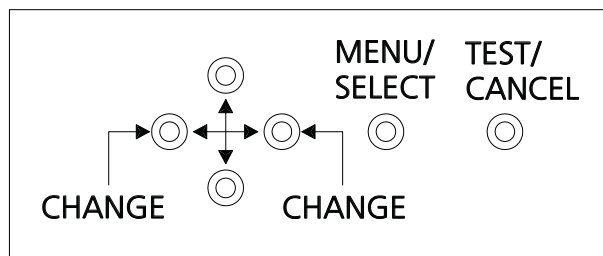
CHANGE        CHANGE

1) [ ↑↓ ] UP/DOWN BUTTON : MOVE MENU UP/DOWN
2) [ ← → ] L/R SETTING BUTTON : CHANGE THE SETTING L/R
3) MENU/SELECT BUTTON : SETUP MENU MODE,
                        EXECUTE THE SELECTION
4) TEST/CANCEL BUTTON : EXIT/UNBLOCK ERROR

## [ OPERATION MENU ]

| PRESS THE MENU BUTTON [SELECT BUTTON TO ENTER] | |
|---|---|
| ## OPERATION MENU ## | |
| SETUP MODE | CREDIT/COIN, ROBOTID, GAME TIME, DOUBLE TIME, CHALLENGE, WIN TICKET, JACKPOT, BONUS GAME, WHEEL TYPE, MERCY TICKET, HALF PAYOUT, NO-TICKET, AVG-TICKET, DEMO VOLUME, DEMO ROBOT. |
| CLEAR MODE | TICKET, CREDITS, AND GAME DATA. |
| VIEW INT-DATA | GAMES, PAYOUT, AVG TOTAL, CREDITS IN, TICKETS OUT, GAME SCORE INFO, JP BONUS INFO, VER INFO. |
| FACTORY-SETTING | CLEARS ALL DATA AND SETS GAME TO DEFAULT. |
| TEST MODE | INPUT TEST, LAMP, FND & LED WHEEL, ELEVATOR, ROBOT, COIN, TICKET, SOUND TEST. |
| GAME MODE | RETURN TO THE GAME. |

## 7-2. SETUP MODE

| SETUP MODE | | | |
|---|---|---|---|
| LCD DISPLAY | DESCRIPTION | RANGE | DEFAULT SETTING |
| Credit/Coin | COIN PER CREDIT | Free, 1/1, 1/2, 1/3, 1/4, 1/5 1/6, 1/7, 1/8,2/1, 3/1, 4/1, 5/1 | 1/1 |
| RobotID | ROBOT COMMUNICATION CHANNEL ID SETTING | 0 ~ 7 | 0 |
| GameTiime | GAME PLAY TIME | 20 ~ 300 (SEC) | 60 sec |
| DoubleTime | DOUBLE BONUS TIME | 0 ~ 60 (SEC) | 10 sec |
| Challenge | CHALLENGE SCORE SETTING 100 ~ 20000 : FIXED SCORED | 500 ~ 20000 (INCREMENTS OF 500 POINTS) | 6000 |
| Challen~Opt | RANDOM OPTION FOR CHALLENGE SCORE **[Off]** - Challenge CHALLENGE SCORE CHANGED AT RANDOM **[On]** - Challenge FIXING CHALLENGE SCORE | [Off] [On] | [On] |
| Win Ticket | TOTAL NUMBER OF TICKETS WHEN SUCCED IN THE CHALLENGE SCORE | 0 ~ 2000 | 500 |
| Jackpot | NUMBER OF TICKETS AWARDED OF JACKPOT | 100 ~ 2000 | 500 |
| BonusGame | AFTER FINISHING THE MAIN GMAE, SETS THE CONDITON OF BONUS GAME **[Off]** : NO BONUS GAME **[All]** : BONUS GAME WITHOUT CONDITIONS **[???]** : ??? PASS THE BONUS GAME IF MORE THAN ONE BALL GOLES **[100] ~ [5000]** : PASS TO THE BONUS GAME IF GET MORE THAN SETTING SCORES. | [Off] [All] [???] 100 ~ 5000 | [All] |
| WheelType | WHEELTYPE | Def(DEFAULT), User | Def |
| WheelSpeed | WHEELSPEED | 55 ~ 100 | 55 |
| MercyTicket | NUMBER OF MERCY TICKET | 0 ~ 10 | 0 |
| HalfPayout | ONE TICKET PER TWO POINTS | OFF, ON | OFF |
| No-Ticket | NO TICKET DISPENSING | OFF, ON | OFF |
| AVG-TICKET | AVERAGE TICKETS DISPENSED PER GEME | 5 ~ 150 | 40 |
| DemoVolume | DEMO SOUND VOLUME **OFF** - DEMO SOUND VOLUME IS OFF | OFF, 10 ~ 100 | 100 |
| DemoRobot | SET THE ROBOT MOVEMENTS IN DEMO MOVE | Off, On | On |
| SAVE AND EXIT | SAVE AND EXIT | PRESS THE BUTTON TO ENTER THE SELECTION | |
| CANCEL AND EXIT | CANCEL AND EXIT | | |

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# [ 1 ROBOT RATE PER 1 PURSE OF BILL ]

\* As shown on the below photo, "ON" means raising  a button to the upwards on the DIP SW.
   On the contrary, "OFF"  means moving it down to the downwards.



| ROBOT ID | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROBOT | 1 | On | **Off** | On | **Off** | On | **Off** | On | **Off** |
| DIP | 2 | On | On | **Off** | **Off** | On | On | **Off** | **Off** |
| S/W | 3 | On | On | On | on | **Off** | **Off** | **Off** | **Off** |

\* SELECT THE WHEEL TYPE (USER) OF SETUP MODE AND MOVE TO BELOW ITEMS USING THE SELECT
   BUTTON

### SETUP MODE   -> WHEEL TYPE [USER]

ONCE EACH ITEM IS CHANGED, AN AVERAGE TICKETS AWARDED AND THE NUMBER OF TICKETS
DISPENSED WILL BE CHANGED.

| LCD  DISPLAY | DESCRIPTION | RANGE | DEFAULT SETTING |
|---|---|---|---|
| Hole‑A01 | WHEEL HOLE NUMBER A01 SCORE SETTING | | 300 |
| Hole‑A02 | WHEEL HOLE NUMBER A02 SCORE SETTING | | 200 |
| Hole‑A03 | WHEEL HOLE NUMBER A03 SCORE SETTING | | 500 |
| Hole‑A04 | WHEEL HOLE NUMBER A04 SCORE SETTING | | 100 |
| Hole‑A05 | WHEEL HOLE NUMBER A05 SCORE SETTING | | 300 |
| Hole‑A06 | WHEEL HOLE NUMBER A06 SCORE SETTING | 100, | 200 |
| Hole‑A07 | WHEEL HOLE NUMBER A07 SCORE SETTING | 200, | ??? |
| Hole‑A08 | WHEEL HOLE NUMBER A08 SCORE SETTING | 300, | 100 |
| Hole‑A09 | WHEEL HOLE NUMBER A09 SCORE SETTING | 500, | 300 |
| Hole‑A10 | WHEEL HOLE NUMBER A10 SCORE SETTING | ??? (MYSTERY) | 200 |
| Hole‑A11 | WHEEL HOLE NUMBER A11 SCORE SETTING | | 500 |
| Hole‑A12 | WHEEL HOLE NUMBER A12 SCORE SETTING | | 100 |
| Hole‑A13 | WHEEL HOLE NUMBER A13 SCORE SETTING | | 300 |
| Hole‑A14 | WHEEL HOLE NUMBER A14 SCORE SETTING | | 200 |
| Hole‑A15 | WHEEL HOLE NUMBER A15 SCORE SETTING | | ??? |
| Hole‑A16 | WHEEL HOLE NUMBER A16 SCORE SETTING | | 100 |
| SAVE AND EXIT | SAVE AND EXIT | PRESS THE BUTTON TO ENTER THE SELECTION | |
| CANCEL AND EXIT | CANCEL AND EXIT | | |

### CLEAR MODE

| LCD DISPLAY | DESCRIPTION | |
|---|---|---|
| CLEAR TICKETS | CLEAR THE NUMBER OF TICKETS OWE | PRESS THE BUTTON TO ENTER THE SELECTION |
| CLEAR CREDITS | CLEAR ANY EXTRA CREDITS AND BALLS | |
| CLEAR GAMEDATA | CLEAR GAME DATA | |
| EXIT | EXIT | |

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| VIEW INT-DATA | |
|---|---|
| LCD DISPLAY | DESCRIPTION |
| GAMES | TOTAL NUMBER OF GAMES PLAYED |
| PAYOUT | TOTAL NUMBER OF TICKETS DISPENSED |
| AVG TOTAL | AN AVERAGE TICKETS PAID PER GAME |
| **** CREDITS IN **** | TOTAL NUMBER OF COINS PLAYED AND SERVICE COINS |
| **** TICKETS OUT *** | TOTAL NUMBER OF GAME DISPENSED AND JACKPOT AWARED |
| **GAMESCORE INFO*** | TOTAL NUMBER OF GAME DISPENSED AND JACKPOT AWARED |
| ** JP BONUS INFO *** | BONUS GAME SCORE AND |
| ***** VER INFO ***** | CURRENT INSTALLED VERSION NUMBER & OPERATION HOUR |
| CANCEL : PRESS THE CANCEL BUTTON TO EXIT | |

| FACTORY-SETTING |
|---|
| FACTORY SETTING (CLEARS ALL DATA AND SETS VALUES TO DEFAULT) |
| SELECT : PRESS THE CANCEL BUTTON TO INITIALIZE |

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## 7-3. TEST MODE

| TEST MODE | | |
|---|---|---|
| LCD  DISPLAY | DEFAULT SETTING | DESCRIPTION |
| INPUT TEST | [->] | ENTER THE INPUT MODE STATUS |
| LAMP | Off, On | CHECK LAMP Off, On(JACKPOT LAMP, BUTTON LAMP, TICKET LAMP) |
| FND & LED | 0 ~ 4 | CHECK FND & LED |
| WHEEL | Off, On | CHECK THE WHEEL |
| ELEVATOR | Off, On | CHECK THE BALL ELEVATOR |
| ROBOT | Status | CHECK THE ROBOT TEST (INITIALIZING COMMUNICATION) |
| COIN | Off, On | CHECK THE COIN SELECTOR |
| TICKET | Off, On | CHECK THE TICKET OPERATING (DISPENSING 5 TICKETS) |
| SOUND TEST | [->] | RETURN TO THE SSOUND TEST MPDE |
| GAME MODE | RETURN TO THE GAME MODE | |

| TEST MODE   ->  INPUT  TEST | |
|---|---|
| LCD  DISPLAY | DESCRIPTION |
| 0:0000,1:0000,7:0000 <br> UP        : 0, DOWN  : 0 <br> LEFT     : 0, RIGHT    : 0 <br> BUTTON : 0, SERVICE : 0 | UP : FORWARDING BUTTON(JOYSTICK) <br> DOWN : REWARDING BUTTON(JOYSTICK) <br> LEFT :  REVOLVING BUTTON(JOYSTICK) <br> RIGHT :  REVOLVING BUTTON(JOYSTICK) <br> BUTTON : TO HOLD AND RELEASE THE BALL <br> SERVICE : SERVICE BUTTON |

| TEST MODE   ->  SOUND  TEST | | |
|---|---|---|
| LCD  DISPLAY | DEFAULT SETTING | DESCRIPTION |
| SOUND           Stop/Play | 0 ~ 15 | CHECK THE SOUND PLAY (On, Off) |
| -EXIT- | RETURN TO THE TEST MODE | |

| GAME MODE | |
|---|---|
| RETURN TO THE GAME | PRESS THE SELECT BUTTON TO ENTER THE SELECTION |

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## 7-4. ERROR CODE

| Error Code | TIME Fnd Display | Error Type | DESCRIPTION | REMEDY |
|---|---|---|---|---|
| Er0-1 | Er0-1 | SETUP LCD | SETUP LCD NOT RESPONDING | CHECK THE SETUP LCD (THE PLAY WORKS NORMALLY) |
| Er0-2 | Er0-2 | SYSTEM | FAILED TO READ & WRITE MEMORY OF SETUP SAVE DATA | POWER OFF AND ON IF PROBLEM CONTINUES CHANGE THE MAIN BOARD |
| Er0-3 | Er0-3 | | FAILED TO SETUP SAVE DATA | |
| Er0-4 | Er0-4 | | FAILED TO READ & WRITE MENORY OF GAME SAVE DATA | POWER OFF AND ON IF PROBLEM CONTINUES REPLACE THE TOP CPU BOARD |
| Er1-1 | Er1-1 | COIN SELECTOR | COIN 1 SENSOR SIGNAL CONTINUES | CHECK THE COIN SELECTOR 1 (COIN SWITCH) |
| Er1-2 | Er1-2 | | COIN 2 SENSOR SIGNAL CONTINUES | CHECK THE COIN SELECTOR 2 (COIN SWITCH) |
| Er2-1 | Er2-1 | BILL ACCEPT | BILL ACCEPT SIGNAL CONTINUES | BILL ACCEPT SIGNAL LOW CHECK |
| Er4-1 | Er4-1 | ROBOT | RF COMMUNICATION MODULE DOES NOT WORK | CHECK THE BOARD OR RF COMMUNITION MODULE PCB |
| Er4-2 | Er4-2 | | NO COMMUNICATION WITH THE ROBOT | CHECK THE ROBOT COMMUNICATION |
| Er4-3 | Er4-3 | | ROBOT IS NOT CONNECTED TO THE ELECTRODE PLATE | CHECK THE ROBOT ELECTRODE PIN OR ELECTRODE PLATE |
| Er5-1 | Er5-1 | WHEEL | WHEEL HOME ENCODER SIGNAL NOT CHANGED | CHECK THE HOME ENCODER SENSOR |
| Er5-2 | Er5-2 | | WHEEL ENCODER SIGNAL NOT CHANGED | CHECK THE MOTOR FUNCTION OR ENCODE SENSOR |
| Er5-2 | Er5-2 | | WHEEL DOES NOT WORK | CHECK THE BALL STUCK OR WHEEL |
| Er6-1 | Er6-1 | ELEVATOR | BOTTOM ENCODER SIGNAL NOT CHANGED | CHECK THE MOTOR FUNCTION OR BOTTOM ENCODER SENSOR |
| Er6-2 | Er6-2 | | NO SIGNAL IN TOP SWITCH OF BALL | CHECK THE BALL OR TOP SWITCH |
| Er6-3 | Er6-3 | | TOP SWITCH OF BALL SIGNAL CONTINUES | CHECK THE TOP BALL SWITCH |
| Er8-1 | Er8-1 | GOAL IN SWITCH | HOLE 1(TOP) SWITCH SIGNAL CONTINUES | CHECK THE SWITCH OF GOLE IN 1(TOP HOLE IN 12 O'CLOCK) |
| Er8-2 | Er8-2 | | GOLE IN 2(BOTTOM) SWITCH SINGAL CONTIUNES | CHECK THE SWITCH OF GOLE IN 2 (BOTTOM HOLE IN 6 O'CLOCK) |
| Er8-3 | Er8-3 | | GOLE IN 3(LEFT) SWITCH SINGAL CONTINUES | CHECK THE SWITCH OF GOLE IN 3(LEFT HOLE IN 9 O'CLOCK) |
| Er8-4 | Er8-4 | | GOLE IN 4(RIGHT) SWITCH SINGAL CONTINUES | CHECK THE SWITCH OF GOLE IN 4(RIGHT HOLE IN 3 O'CLOCK) |
| Ert-1 | Ert-1 | TICKET ERROR | NO TICKETS | CHECK TICKET DISPENSER OR FUNCTION |
| Ert-2 | Ert-2 | | TICKET JAMMED | CHECK TICKET DISPENSER JAMMED OR DIP SWITCH |

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# 8. HOW TO REPLACE MAJOR COMPONENTS

## 8-1. Replacing MAIN PCB & COIN SELECTOR
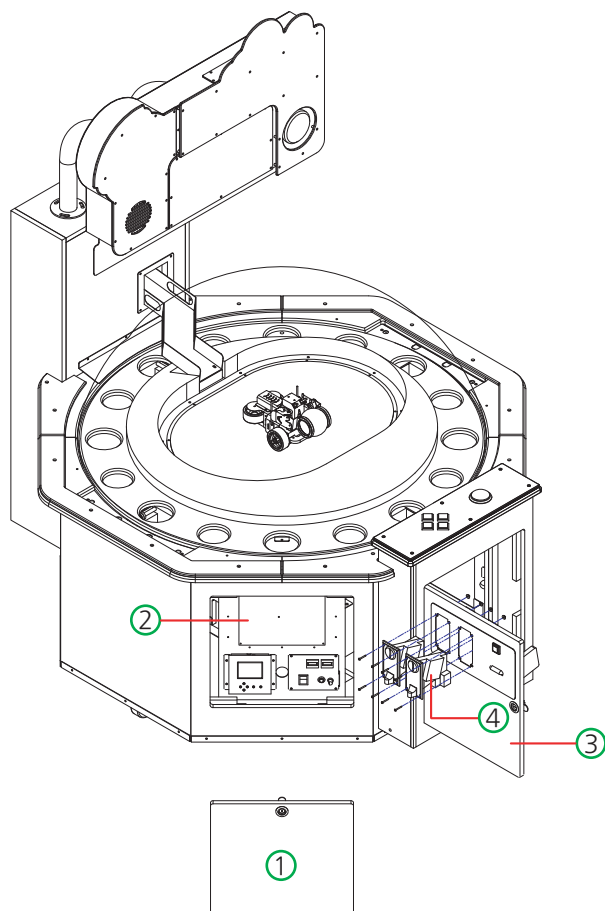
### * MAIN PCB ASS'Y

(1) ①Open a Left Side Door, There is a MAIN PCB.
    After separate a connected connector, replace a PCB.
(2) After separating ②BILLBOARD LED PCB ASS'Y and a connected
    connector, and then Replace a PCB [Each M3 bolts, 5 points]

### * COIN SELECTOR

(1) ③Open a Front Side Door, Separate a connected connector with
    COIN SELECTOR, And then ④Separate a COIN SELECTOR.
    [Each M4 bolts, 4points]
(2) After separating, replace a COIN SELECTOR.

| NO. | PART NAME | SPEC. | CODE NO. |
|-----|-----------|-------|----------|
| ② | MAIN PCB ASS'Y | - | AICU0PCB011 |
| ④ | COIN SELECTOR | TW-130B | MZZZ0COS032 |

## 8-2. Replacing FILED LED PCB ASS'Y
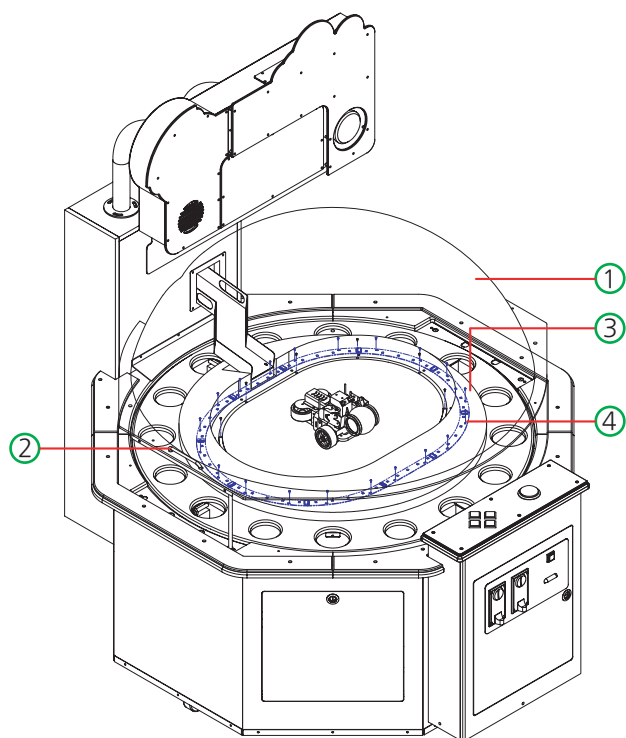
### * FILED LED PCB

(1) ①After disconnecting a DOME MOLDING PART,
    [M6 bolts, 4 places] ②Pull up ROUND BAR HANDLE
    to open the DOME.
(2) ③After disconnecting a FIELD COVER MOLDING,
    [M4 bolts, 10 places]
(3) ④After separating connectors connected to FIELD LED PCB ASS'Y
    PCB, Replace a PCB.

| NO. | PART NAME | SPEC. | CODE NO. |
|-----|-----------|-------|----------|
| ② | ROUND BAR HANDLE | - | - |
| ④ | FIELD LED PCB ASS'Y-A,B,C | - | ALOB0PCB002~007 |

* See details of PCB on P31.

## 8-3. Replacing WHEEL MOTOR



(1) ①Open a Left Side Door, There is a ②③WHEEL MOTOR.

(2) After separating ④WHEEL MOTOR BKT [Each M6 bolts, 4 points] and then Replace a MOTOR ASS'Y
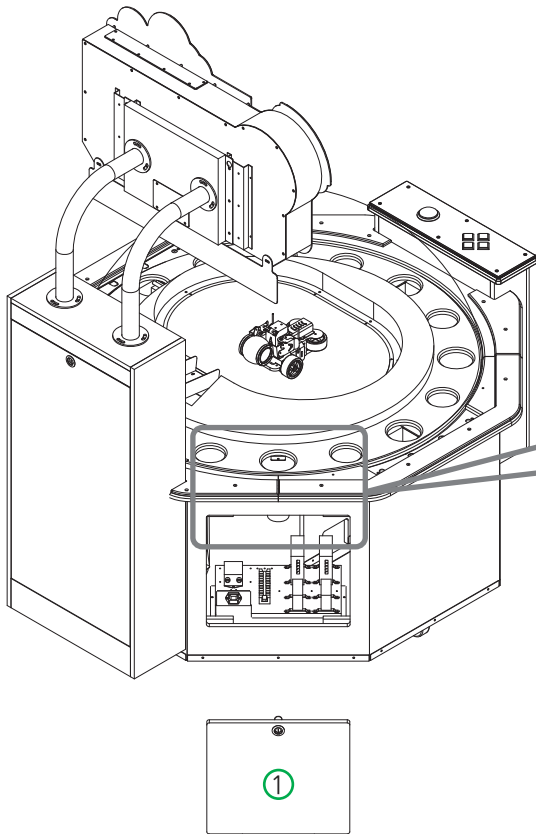
| NO. | PART NAME | SPEC. | CODE NO. |
|-----|-----------|-------|----------|
| ② | DC MOTOR | K6D-12V-15W | MZZZ0MOT032 |
| ③ | GEAR HEAD | K6G-250C 250:1 | MZZZ0GEA001 |



## 8-4. Replacing ELEVATOR MOTOR
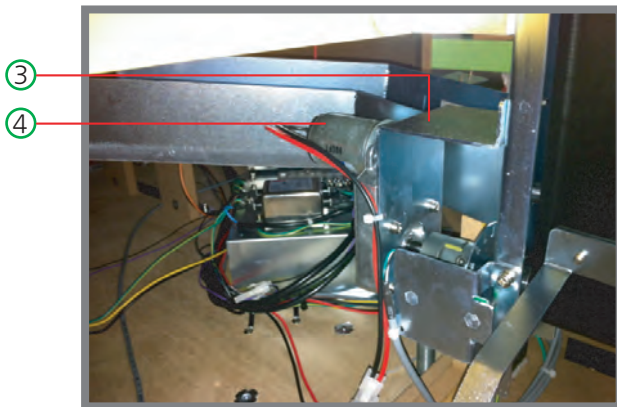


(1) ①Open a Rear Door, There is a, ②ELEVATOR ASS'Y.
(2) After separating ③ELEVATOR MOTOR BKT.
   [Each M4 bolts, 4 points]
(3) After separating, replace a ④MOTOR.
   [Each M4 bolts,
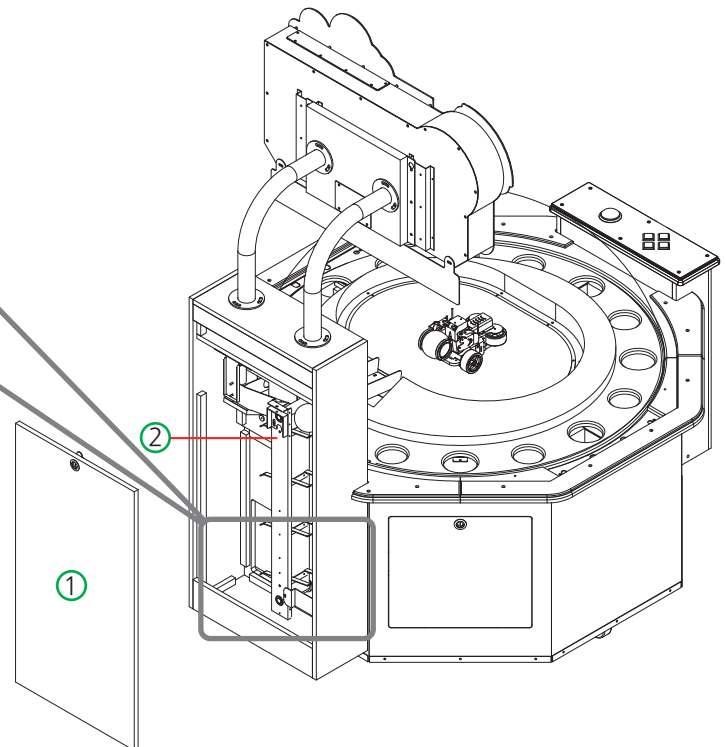
| NO. | PART NAME | SPEC. | CODE NO. |
|-----|-----------|-------|----------|
| ④ | DC MOTOR | KGE-3448-050-12V _1/204 F-TYPE | MZZZ0MOT072 |

* Reassemble them in reverse order and check performance of the game.

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# 9. TROUBLESHOOTING

## 9-1. IN CASE OF POWER FAILURE

*Common: Check the input voltage, check wiring

POWER — Abnormal →

1. Connection & A measure
2. Displacement NOISE FILTER

[CHECK]
1. AC CORD
2. FUSE(250V)
3. AC S/W
4. AC Connector
5. INPUT VOLTAGE TESTER
   : AC110V or 220V

normal

SMPS Change

## 9-2. JACKPOT LED PCB & BILLBOARD LED PCB ASS'Y ERROR

*Common: Check the input voltage, check wiring

JACKPOT LED PCB &
BILLBOARD LED PCB — Abnormal →

JACKPOT LED PCB &
BILLBOARD LED PCB Change

[CHECK]
1. Assemble appearance of
   JACKPOT LED PCB & BILLBOARD LED PCB
2. Wiring connection
3. Power operation LED (Blinking)
4. Service VOLTAGE : 12V, 5V

normal

MAIN PCB ASS'Y Change

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## 9-3. BALL OUT LED PCB & FILED LED PCB ASS'Y ERROR

*Common: Check the input voltage, check wiring

BALL OUT LED PCB &
FILED LED PCB

— Abnormal → BALL OUT LED PCB &
FILED LED PCB Change

[CHECK]
1. Assemble appearance of
   BALL OUT LED PCB & FILED LED PCB
2. Wiring connection
3. Power operation LED (Blinking)
4. Service VOLTAGE : 12V, 5V

normal

MAIN PCB ASS'Y Change

**21**
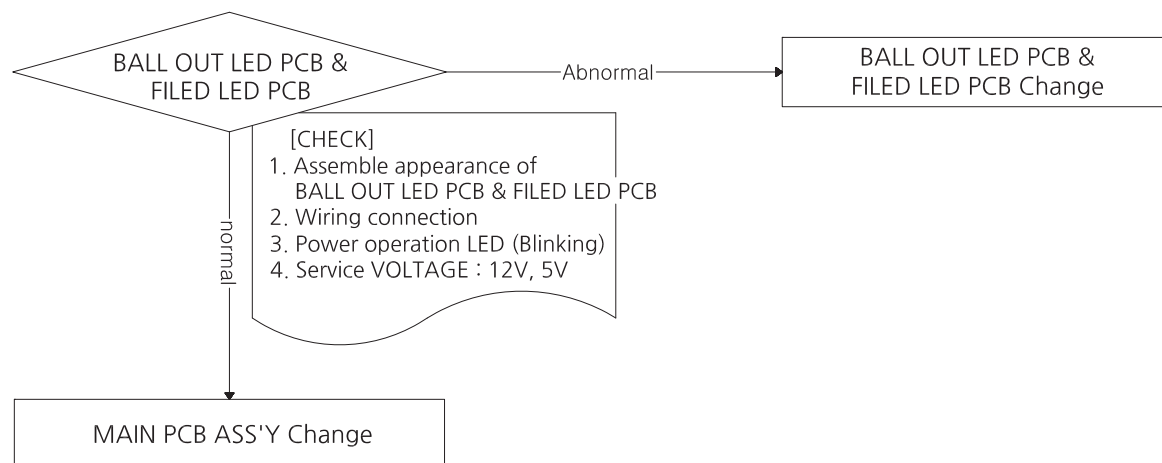
# 9-4. SOUND ERROR

*Common: Check the input voltage, check wiring

VOLUME PCB ASS'Y — Abnormal → VOLUME PCB ASS'Y Change

[CHECK]
1. Assemble appearance of VOLUME
2. VOLUME Control
3. VOLUME value measurement
   tester (resistance)
   VOLUME - 10K

normal

MAIN PCB ASS'Y — Abnormal → MAIN PCB ASS'Y Change

[CHECK]
1. AUDIO Wiring connection & Change
2. AC CONNECTOR

normal

SPEAKER — Abnormal → SPAEKER Change

[CHECK]
1. Assemble appearance of SPEAKER
2. SPEAKER Wiring

**22**
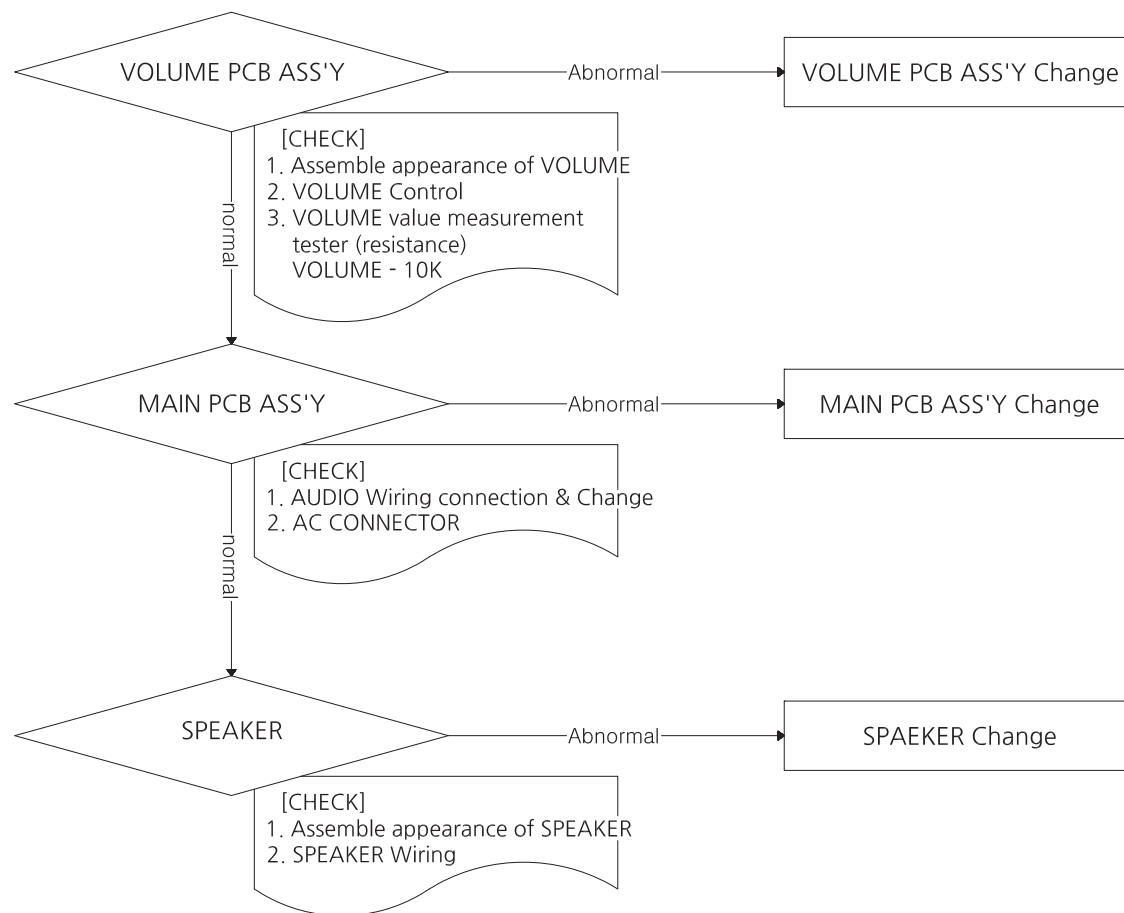
## 9-5. COIN SELECTOR ERROR

*Common: Check the input voltage, check wiring

COIN SELECTOR ASS'Y —Abnormal→ COIN SELECTOR Change

[CHECK]
1. Assemble appearance of COIN SELECTOR
2. Wiring connection
3. Service VOLTAGE : 12V
4. COIN SIGNAL ON/OFF

normal

MAIN PCB ASS'Y Change
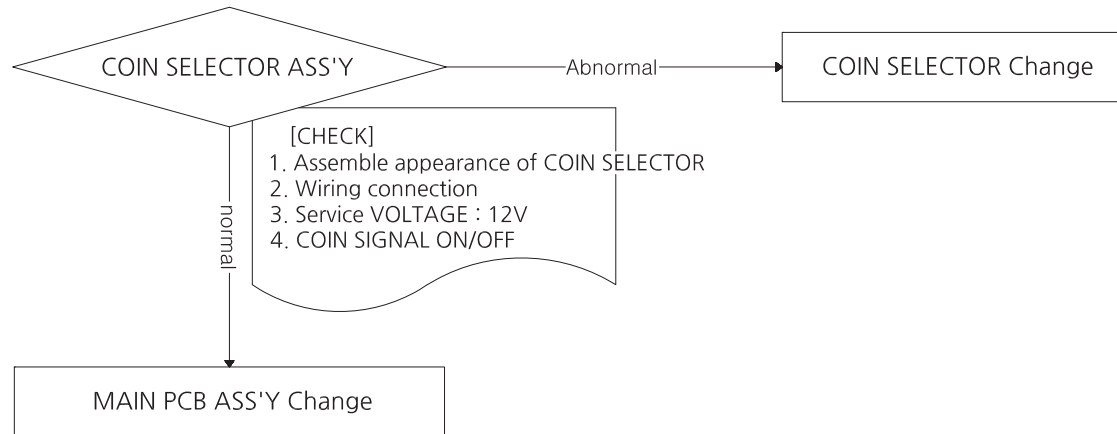
## 9-6. TICKET DISPENSER OPERATING

*Common: Check the input voltage, check wiring

TICKET DISPENSER ASS'Y —Abnormal→ TICKET DISPENSER Change

[CHECK]
1. Wiring connection
2. Service VOLTAGE : 12V
3. TICKET JAM

normal

MAIN PCB ASS'Y Change
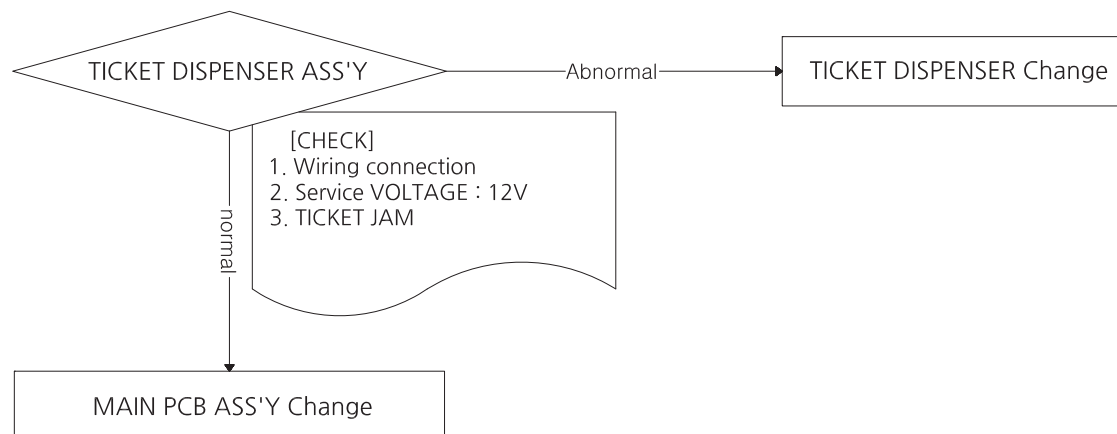
# 9-7. BUTTON & COUNTER ERROR

*Common: Check the input voltage, check wiring

SET UP
(BUTTON, COUNTER)

BUTTON
(START, SERVICE)

COUNTER

Abnormal

Abnormal

[CHECK]
1. Assemble appearance of BUTTON
2. Wiring PIN
3. SW ON/OFF Check (TESTER)

[CHECK]
1. Assemble appearance of COUNTER
2. Wiring PIN
3. When two wires are short-circuited,
   the signal is on.

BUTTON Change

COUNTER Change

normal

MAIN PCB ASS'Y Change

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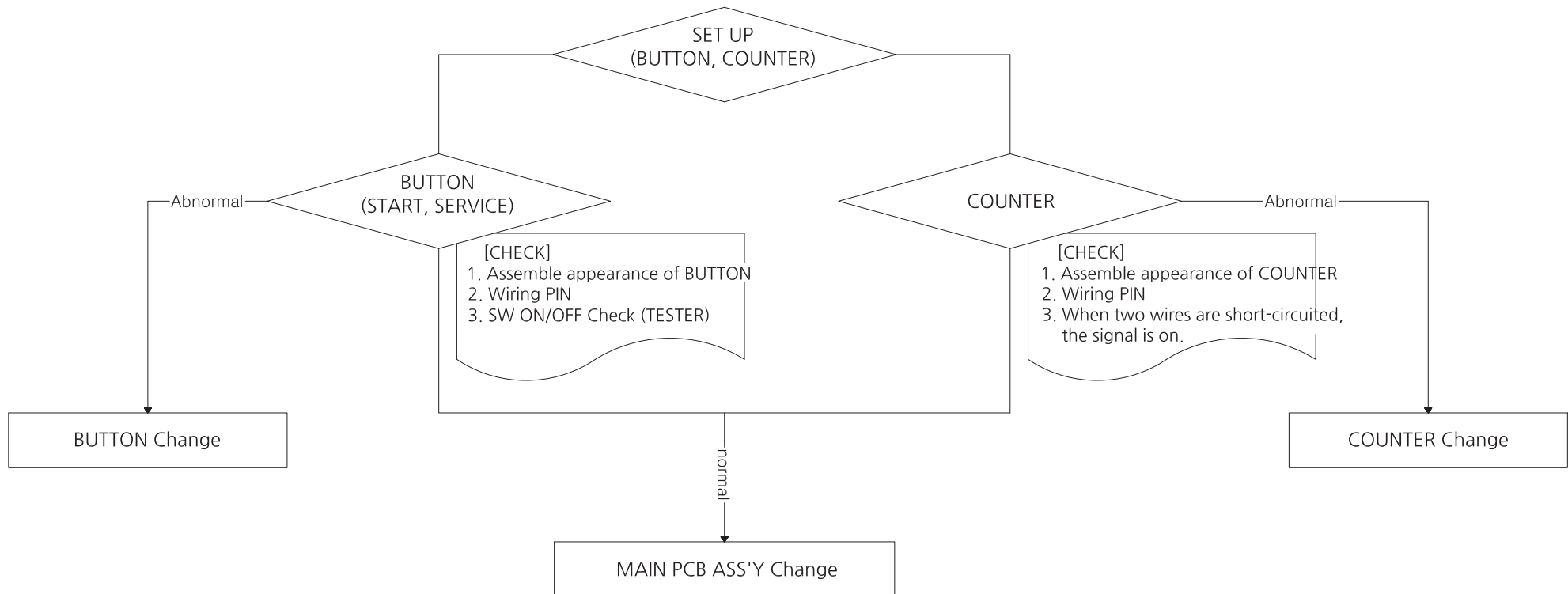
## 9-8. WHEN A ROBOT DOESN'T WORK

*Common: Check the input voltage, check wiring

ROBOT ASS'Y

[CHECK]
1. Assemble appearance of ROBOT ASS'Y
2. Wiring connection
3. Electrode plate
4. Service VOLTAGE : 12V
5. Power operation LED (Blinking) : RED

normal

ROBOT TEST

[CHECK]
1. TEST on TEST MODE_ROBOT mode.
   [Check with Up and down, left and right
    buttons and START button]
   _ ARM Up and down,
   left and right/wheel movement

Abnormal

Abnormal

SERVOR MOTOR
(LEFT, RIGHT, UP/DOWM)

Abnormal

[CHECK]
1. Assemble appearance of SERVOR MOTOR
2. Wiring connection
3. Power status LED : GREEN

WHEEL MOTOR
(LEFT, RIGHT)

Abnormal

[CHECK]
1. Assemble appearance of WHEEL MOTOR
2. Wiring connection
3. Power operation LED (Blinking)

SERVOR MOTOR Change

WHEEL MOTOR Change

normal

I/O PCB ASS'Y Change

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## 9-9. WHEN A ROBOT CAUSED A COMMUNICATION PROBLEM

*Common: Check the input voltage, check wiring

RF MODULE PCB ASS'Y

Abnormal → RF MODULE PCB ASS'Y Change

[CHECK]
1. Assemble appearance of RF MODULE PCB ASS'Y
2. Wiring connection
3. Power status LED_LIGHTS : RED

normal

MAIN PCB ASS'Y Change

**26**
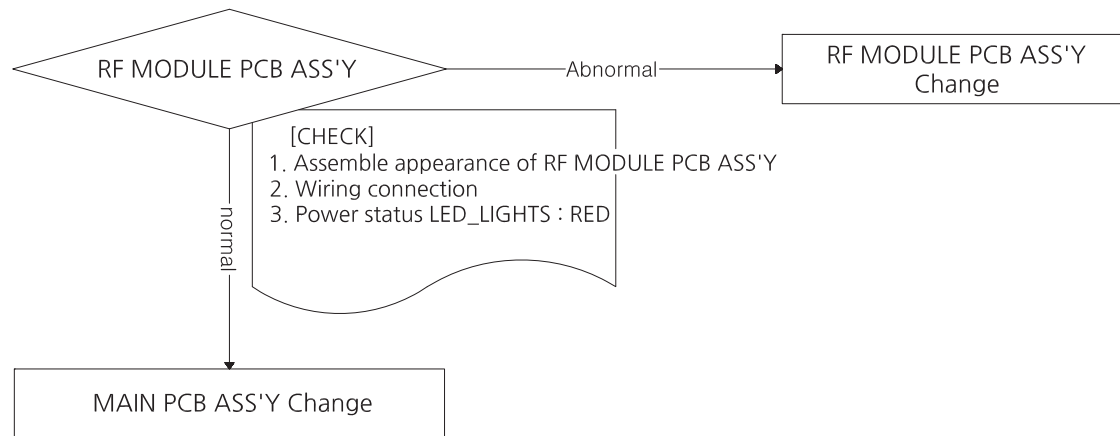
# 10. EXPLODED VIEW

## 10-1. MAIN CABINET
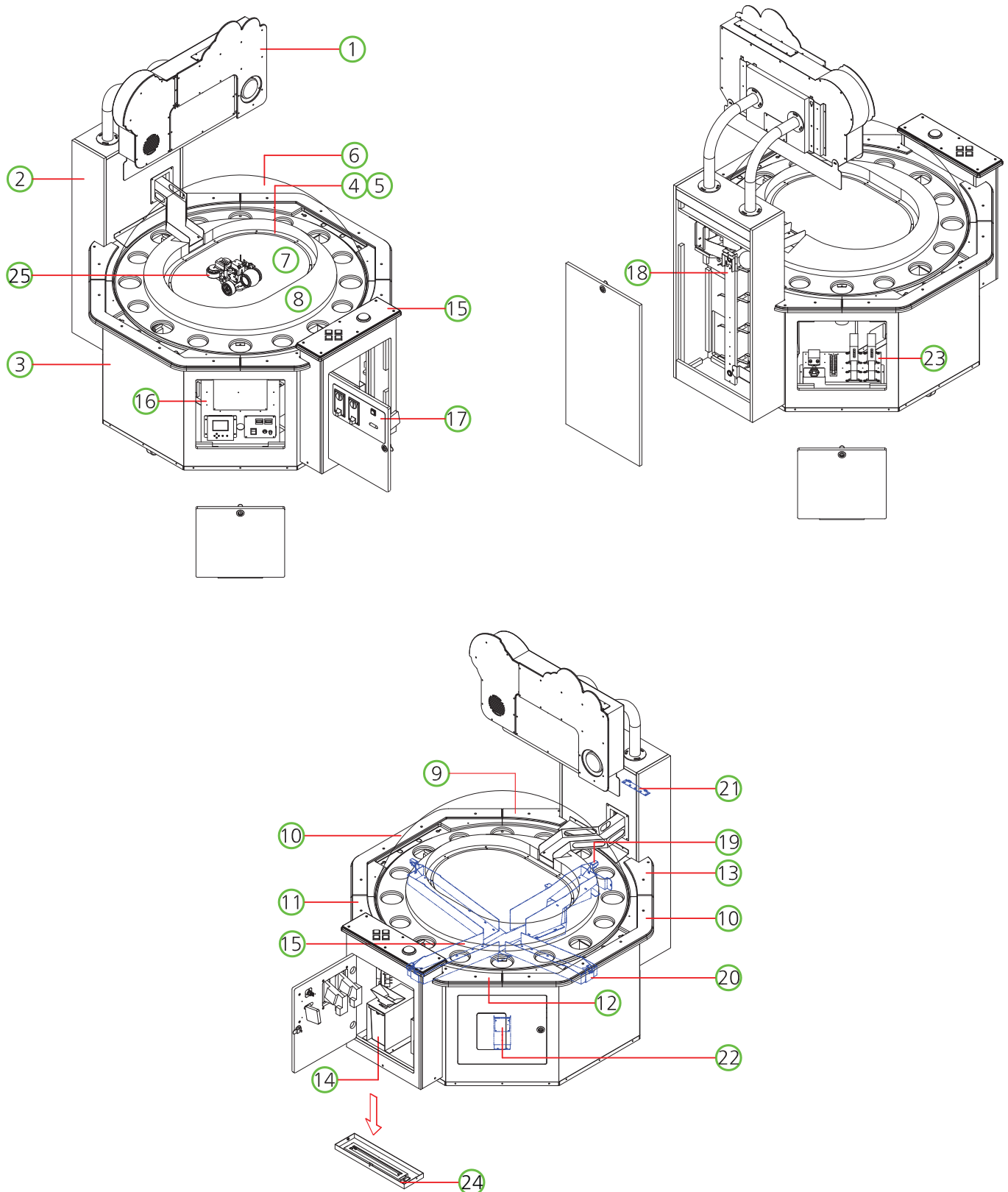
| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | BILLBOARD ASS'Y | - | 1 | - |
| 2 | REAR BODY ASS'Y | - | 1 | - |
| 3 | MAIN CABINET ASS'Y | - | 1 | - |
| 4 | BASE PANEL ASS'Y | - | 1 | - |
| 5 | FIELD PANEL ASS'Y | - | 1 | - |
| 6 | DOME MOLDING ASS'Y | - | 1 | - |
| 7 | ELECTRODE PLATE | - | 1 | - |
| 8 | FIELD COVER | - | 1 | - |
| 9 | TABLE ACRYL-D | ACRYL-8.0t | 1 | MLOBACR004 |
| 10 | TABLE ACRYL-C | ACRYL-8.0t | 2 | MLOBACR003 |
| 11 | TABLE ACRYL-A | ACRYL-8.0t | 1 | MLOBACR001 |
| 12 | TABLE ACRYL-B | - | 1 | - |
| 13 | TABLE ACRYL-E | - | 1 | - |
| 14 | COIN BOX ASS'Y | - | 1 | - |
| 15 | BUTTON PANEL ASS'Y | - | 1 | - |
| 16 | MAIN BOARD ASS'Y | - | 1 | - |
| 17 | COIN SELECTOR ASS'Y | - | 1 | - |
| 18 | ELEVATOR ASS'Y | - | 1 | - |
| 19 | BALL GUIDE BKT-C ASS'Y | - | 1 | - |
| 20 | BALL GUIDE BKT-A ASS'Y | - | 1 | - |
| 21 | TOP CORNER LED PCB ASS'Y | - | 1 | AFP20PCB004 |
| 22 | RF MODULE PCB ASS'Y | - | 1 | - |
| 23 | SMPS ASS'Y | - | 1 | - |
| 24 | FRONT LOWER LIGHT ASS'Y | - | 1 | - |
| 25 | ROBOT ASS'Y | - | 1 | - |

## 10-2. BILLBOARD
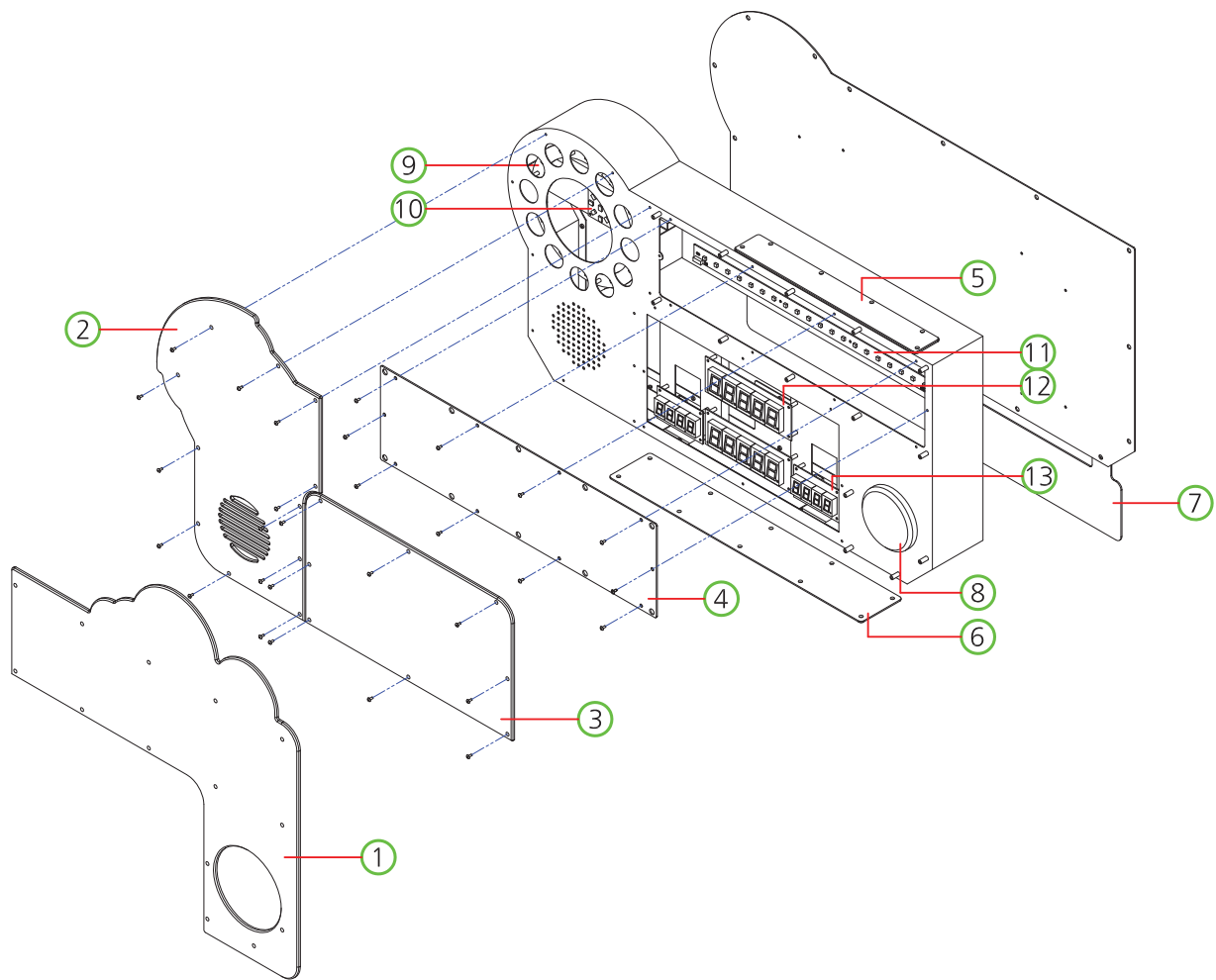


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | BILLBOARD ACRYL | ACRYL-5.0t | 1 | MLOB0ACR008 |
| 2 | BILLBOARD JACKPOT GAME ACRYL | ACRYL-5.0t | 1 | MLOB0ACR007 |
| 3 | BILLBOARD FND ACRYL | ACRYL-5.0t | 1 | MLOB0ACR006 |
| 4 | BILLBOARD INNER ACRYL | PET-2.0t | 1 | MLOB0ACR014 |
| 5 | BILLBOARD TOP LIGHT ACRYL | ACRYL-3.0t | 1 | MLOB0ACR009 |
| 6 | BILLBOARD BOTTOM LIGHT ACRYL | ACRYL-3.0t | 1 | MLOB0ACR010 |
| 7 | HOW TO PLAY ACRYL | PET-2.0t | 1 | MLOB0ACR013 |
| 8 | SPEAKER | MID4.5"+TW1/2" 8Ω | 2 | MZZZ0SPE021 |
| 9 | JACKPOT GAME LED PCB ASS'Y | - | 2 | ALOB0PCB004 |
| 10 | SPEAKER LAMP PCB ASS'Y | BLUE | 1 | APUF0PCB001 |
| 11 | BILLBOARD LED PCB ASS'Y | WHITE TYPE | 2 | ASUP0PCB001 |
| 12 | JACKPOT FND PCB ASS'Y | - | 2 | ADOS0PCB005 |
| 13 | FND PCB ASS'Y | - | 2 | AWID0PCB004 |

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## 10-3. BASE PANEL
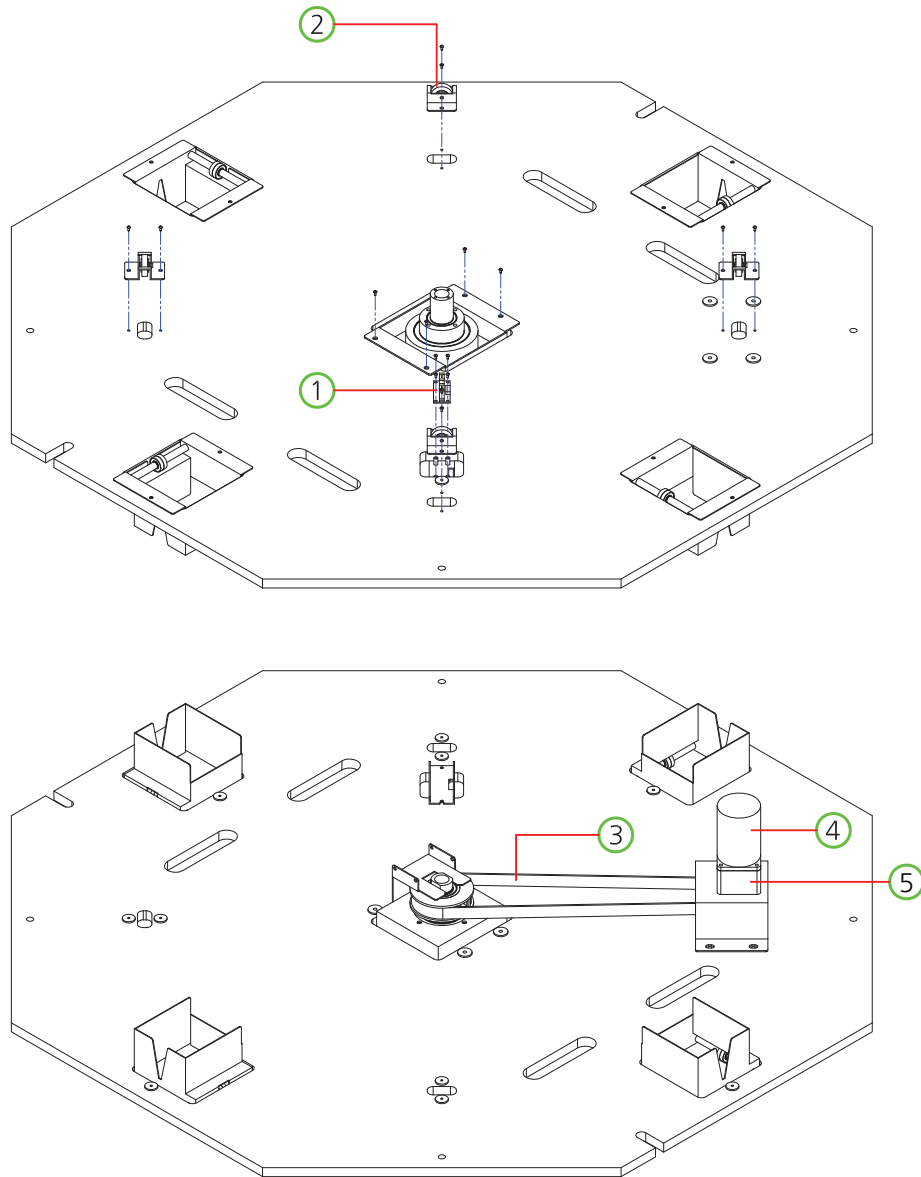


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | SENSOR PCB-2 ASS'Y | - | 1 | - |
| 2 | WHEEL SUPPORT ROLLER ASS'Y | - | 4 | - |
| 3 | TIMMING BELT | 400H-075 | 1 | MZZZ0BEL015 |
| 4 | DC MOTOR | K6D-12V-15W | 1 | MZZZ0MOT032 |
| 5 | GEAR HEAD | K6G-250C 250:1 | 1 | MZZZ0GEA001 |

## 10-4. FIELD PANEL
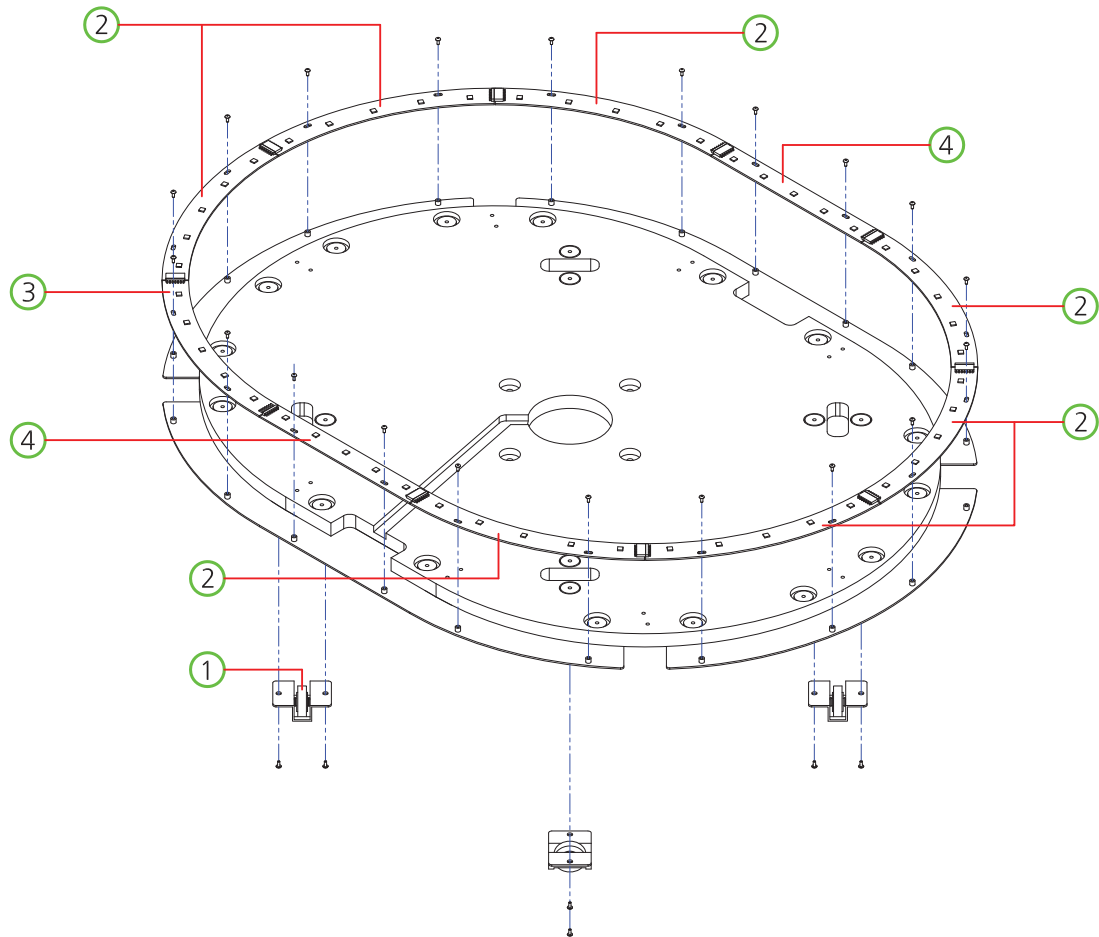


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | WHEEL SUPPORT ROLLER ASS'Y | - | 4 | - |
| 2 | FIELD LED PCB ASS'Y-B | - | 7 | ALOB0PCB003 |
| 3 | FIELD LED PCB ASS'Y-C | - | 1 | ALOB0PCB007 |
| 4 | FIELD LED PCB ASS'Y-A | - | 2 | ALOB0PCB002 |

## 10-5. BUTTON PANEL_BUTTON TYPE
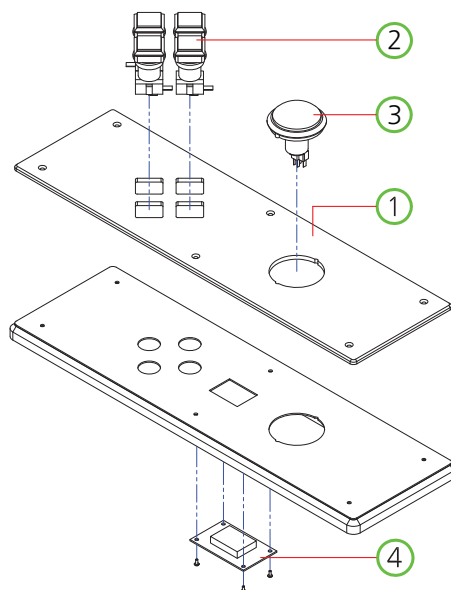


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | BUTTON PANEL ACRYL_BUTTON TYPE | ACRYL-5.0t | 1 | MLOB0ACR017 |
| 2 | BUTTON | AM1PB-26SH R12D | 1 | MMUM0BUT002 |
| 3 | BUTTON SWITCH | BLC-BL-Φ63-BLUE | 1 | MZZZ0BUT090 |
| 4 | FND PCB ASS'Y | - | 1 | AWID0PCB004 |

## [ OPTION ]_JOYSTICK TYPE
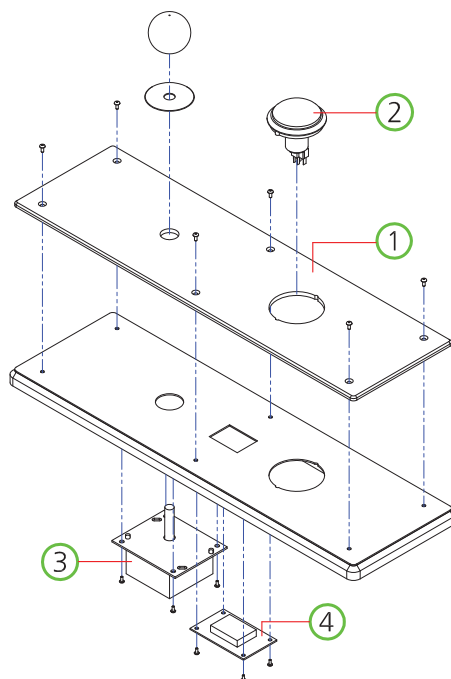


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | BUTTON PANEL ACRYL_JOYSTICK TYPE | ACRYL-5.0t | 1 | MLOB0ACR011 |
| 2 | BUTTON SWITCH | BLC-BL-Φ63-BLUE | 1 | MZZZ0BUT090 |
| 3 | JOYSTICK | - | 1 | MZZZ0JOY011 |
| 4 | FND PCB ASS'Y | - | 1 | AWID0PCB004 |

## 10-7. MAIN BOARD BKT
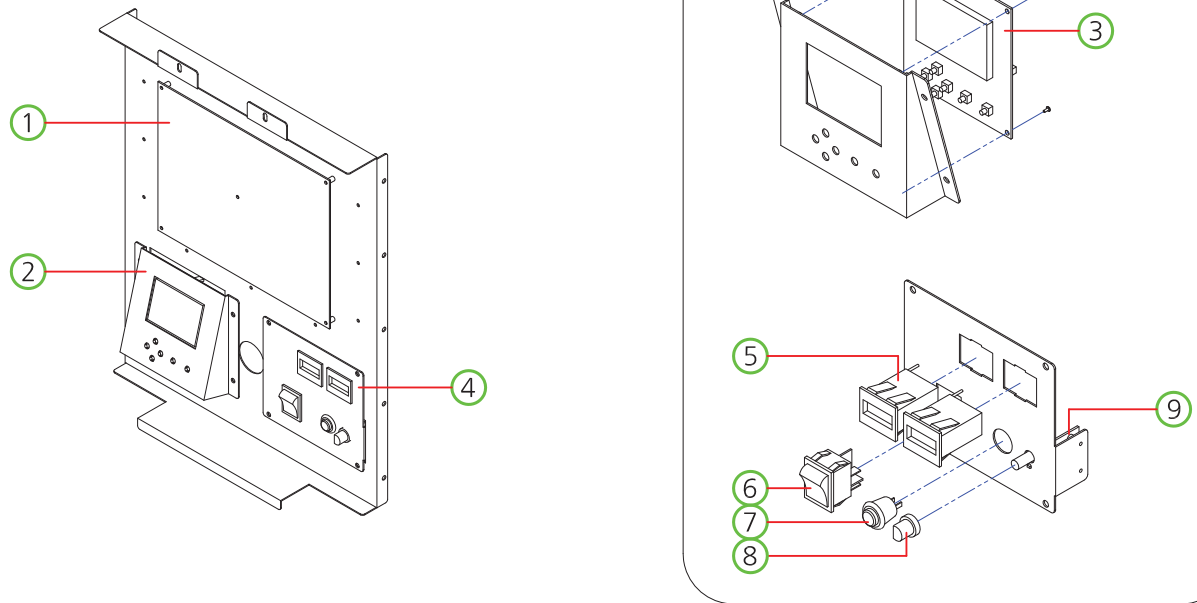
| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | MAIN BOARD PCB ASS'Y | - | 1 | AICU0PCB001 |
| 2 | [ SETUP LCD BKT PART ] | | 1 | - |
| 3 | SETUP LCD PCB ASS'Y | - | 1 | AZZZ0PCB113 |
| 4 | [ COUNTER BKT PART ] | | 2 | - |
| 5 | COUNTER | AMMC-712(OA127CL) | 1 | MZZZ0COU002 |
| 6 | ROCKER SWITCH | T-125 4P | 1 | MELE0SWI004 |
| 7 | PUSH BUTTON SWITCH | DS-412R | 1 | MELE0PUS006 |
| 8 | VOLUME KONB | - | 1 | MELE0VOL007 |
| 9 | VOLUME PCB ASS'Y | - | 1 | AHM20PCB016 |

## 10-8. COIN SELECTOR
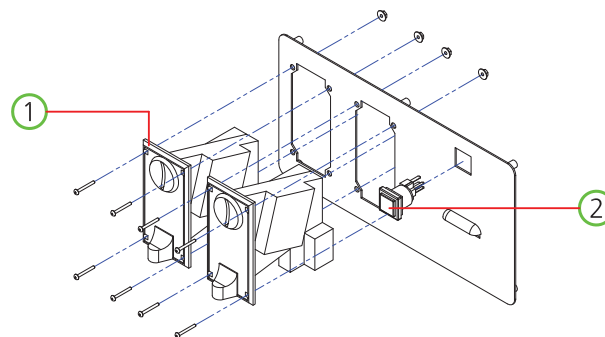
| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | COIN SELECTOR | TW-130B | 2 | MZZZ0COS032 |
| 2 | BUTTON SWITCH | - | 1 | MZZZ0BUT090 |

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## 10-9. ELEVATOR
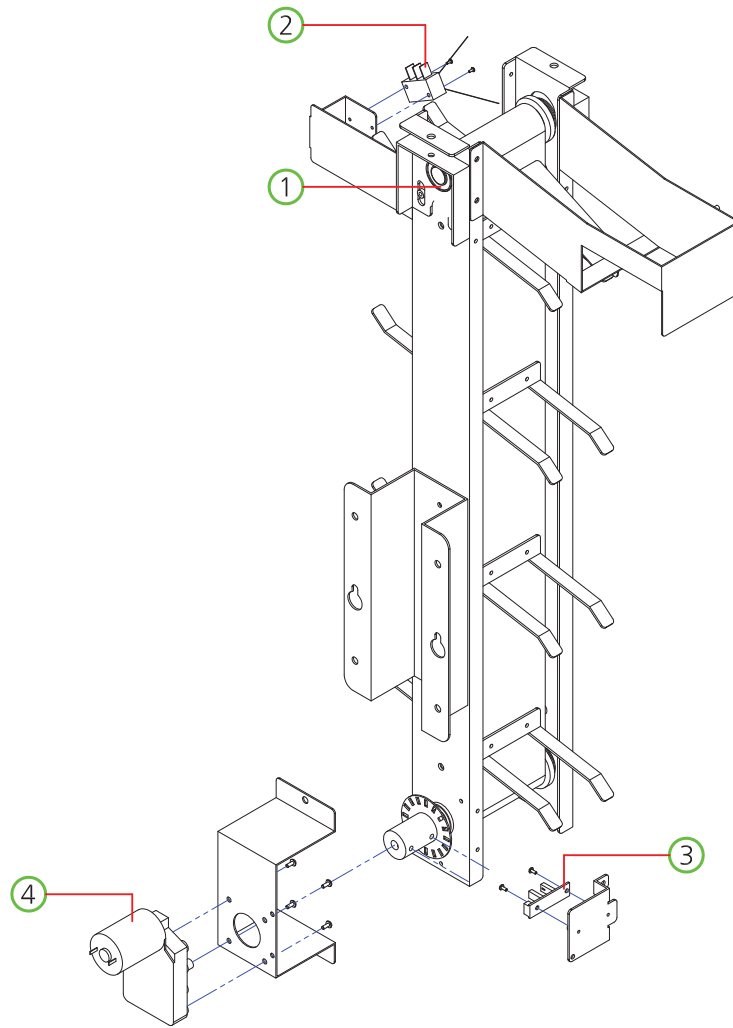


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | BEARING | 6902NR | 4 | MZZZ0BEA080 |
| 2 | MICRO SWITCH | CNR-05H-03 | 1 | MELE0MIC002 |
| 3 | PHOTO INT-1 PCB ASS'Y | - | 1 | ACIR0PCB011 |
| 4 | DC MOTOR | KGE-3448-050-12V _1/204  F-TYPE | 1 | MZZZ0MOT072 |

## 10-10. BALL GUIDE BKT-C
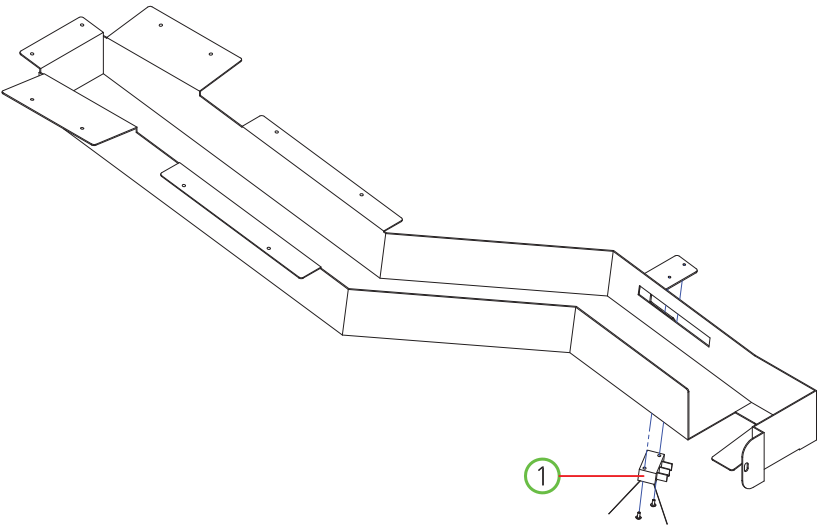


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | MICRO SWITCH | CNR−05H−03 | 1 | MELE0MIC002 |

## 10-11. BALL GUIDE BKT-A
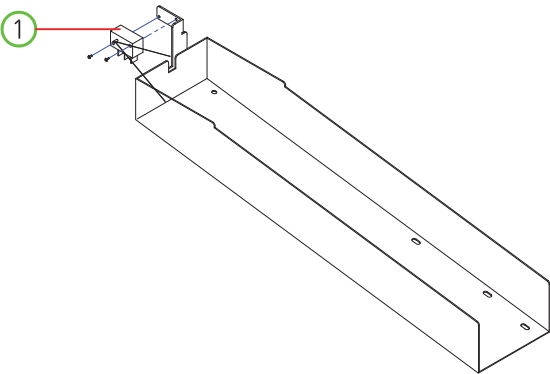


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | MICRO SWITCH | CNR−05H−03 | 1 | MELE0MIC002 |

## 10-12. RF MODULE PCB
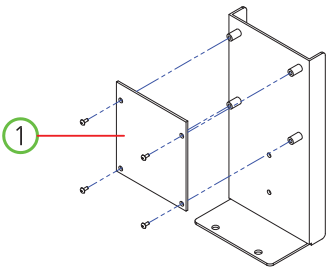


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | RF MODULE PCB ASS'Y | - | 1 | - |

## 10-13. SMPS BKT
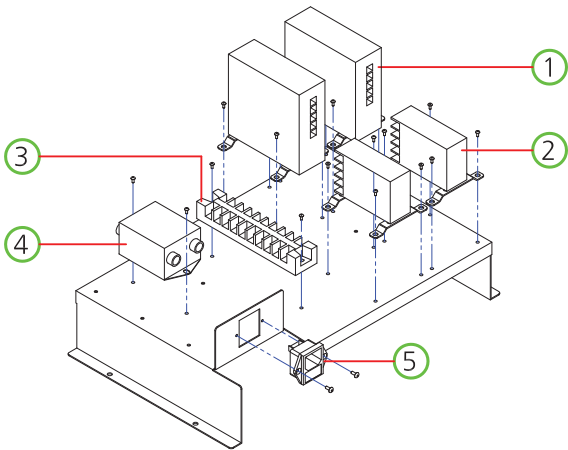


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | POWER SMPS | RS50−12V | 2 | MELE0SMP055 |
| 2 | POWER SMPS | RS25−5V | 2 | MELE0SMP056 |
| 3 | TERMINAL BLOCK | 250V 10P | 1 | MELE0TEB003 |
| 4 | NOISE FILTER | ES1−F10 | 1 | MELE0NOI006 |
| 5 | AC INPUT | DAC−13H | 1 | MELE0SWI015 |

## 10-14. COIN BOX
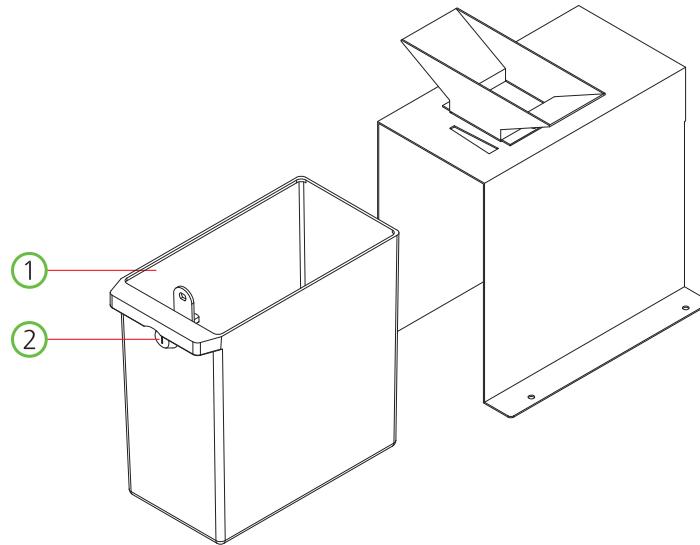


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | COIN BOX | - | 1 | MDRE0PLA007 |
| 2 | KEY ASS'Y | 6001 | 1 | MZZZ0KEY075 |

## 10-15. FRONT LOWER LIGHT
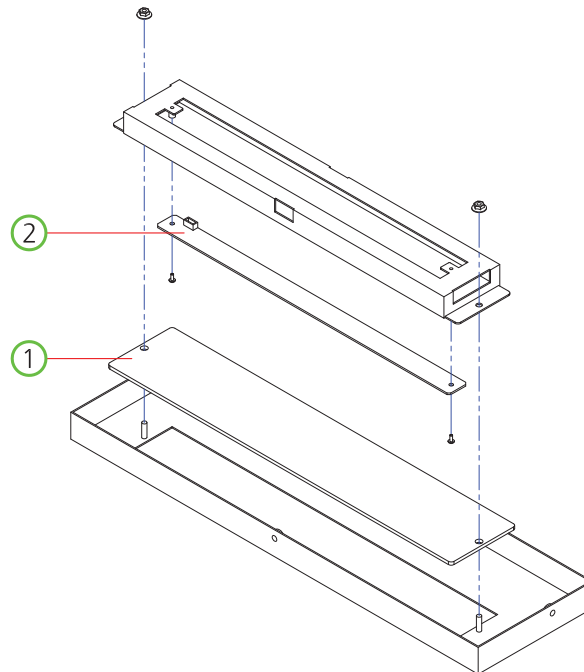


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|---|---|---|---|---|
| 1 | FRONT LOWER LIGHT ACRYL | - | 4 | - |
| 2 | MIDDLE DOOR LED PCB ASS'Y | - | 1 | - |

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## 10-15. ROBOT
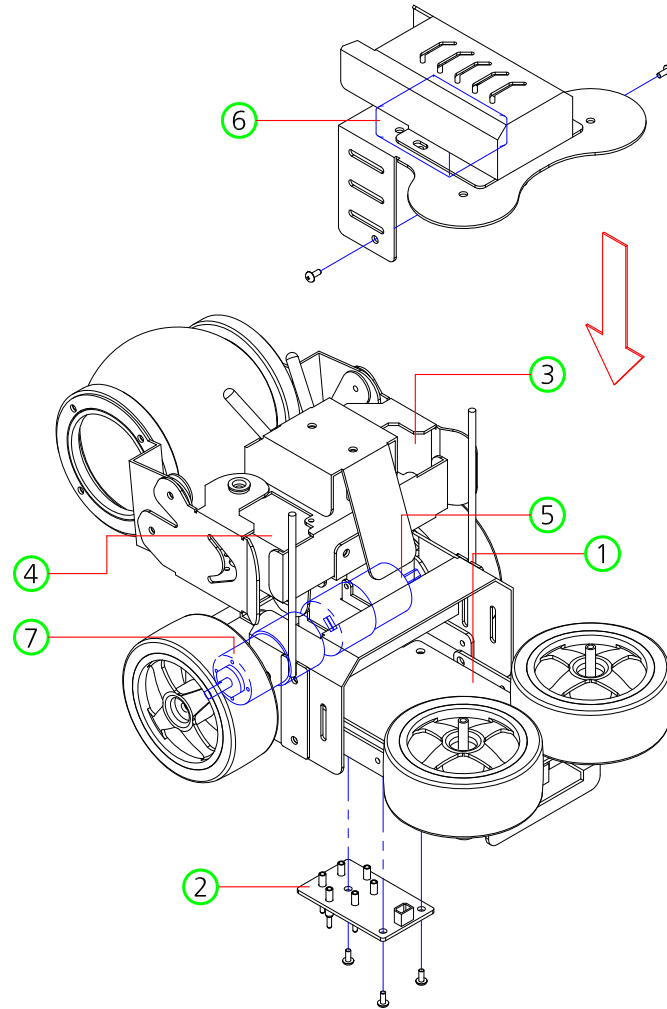


| NO. | PART NAME | SPEC. | QUANTITY | CODE NO. |
|-----|-----------|-------|----------|----------|
| 1 | ROBOT I/O PCB ASS'Y | - | 1 | ALOB0PCB001 |
| 2 | POWER PIN PCB ASS'Y | - | 1 | ALOB0PCB006 |
| 3 | SERVO MOTOR | DRS-0101 A | 1 | MZZZ0MOT074 |
| 4 | SERVO MOTOR | DRS-0101 B | 1 | MZZZ0MOT074 |
| 5 | SERVO MOTOR | DRS-0101 C | 1 | MZZZ0MOT074 |
| 6 | BATTARY | 3.7V X 2-lithium ion-1030 mA | 1 | MLOB0ELE004 |
| 7 | DC MOTOR | K22-0053-NB2419D1 | 2 | MZZZ0MOT073 |

| | A | B | C | D |
|---|---|---|---|---|

| MARK | DATE | REVISION | DRAWN BY | CHECKED BY | APPROVED BY |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

19-3

JACKPOT
LED
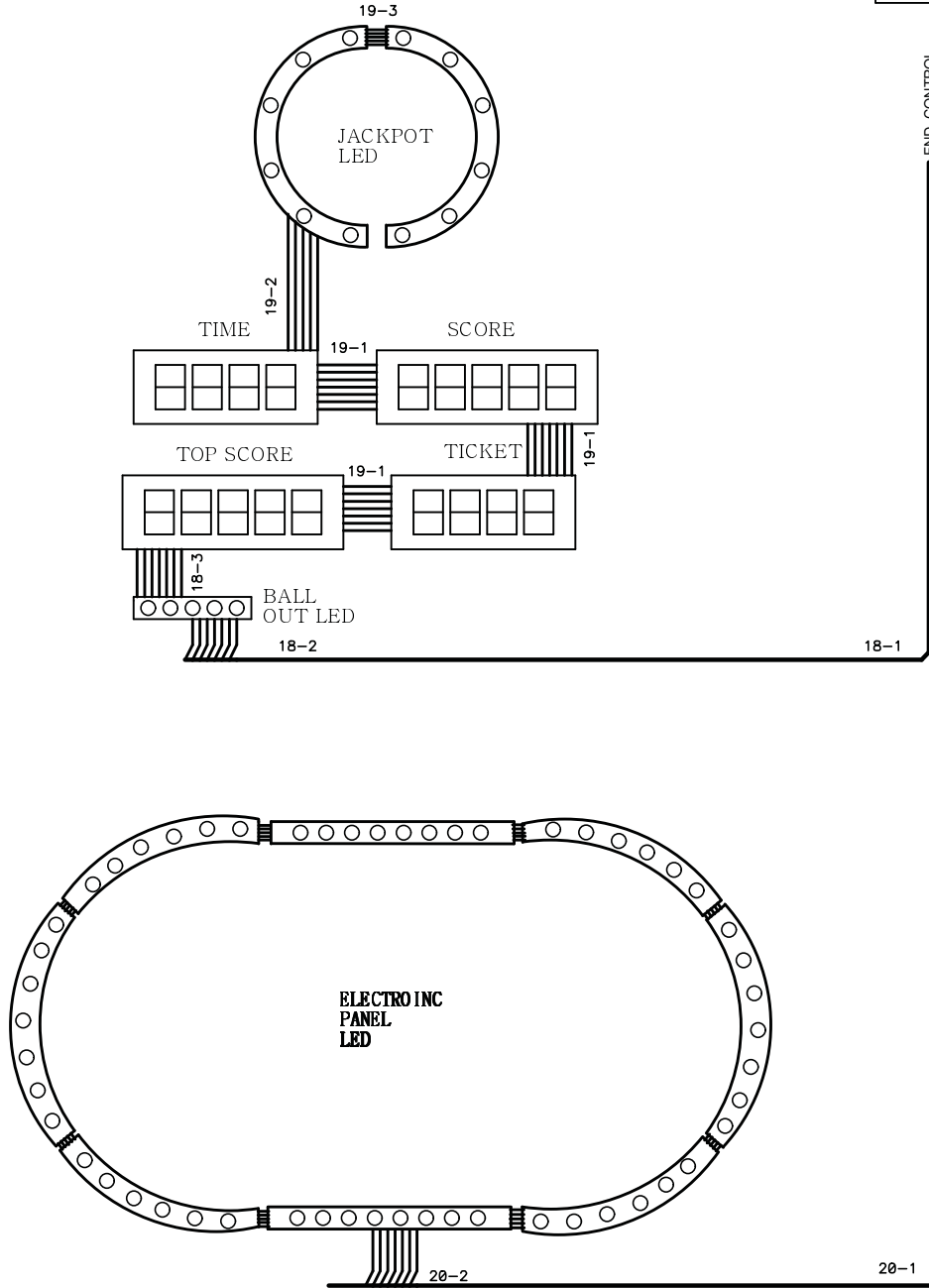
FND_CONTROL

LED_CONTROL

12V OUT
BILLBOARD
LED &
ELETRONIC
PANEL

19-2

TIME        SCORE

19-1

TOP SCORE    TICKET

19-1        19-1

18-3

BALL
OUT LED

18-2        18-1

4-1    5-2

5-3

5-3

BILLBOARD
LED

4-2

ELECTRO INC
PANEL
LED

ELECTRO INC
PANEL

20-2        20-1
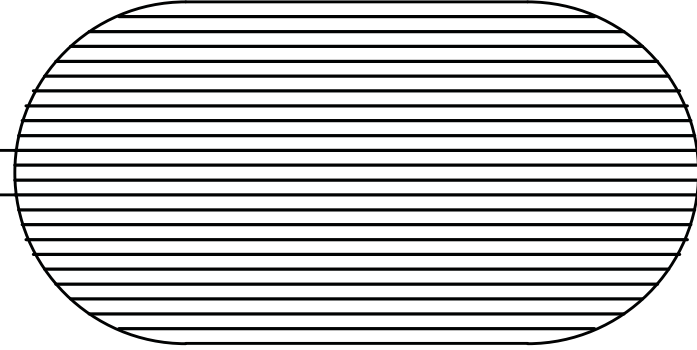
| DRAWN BY | CHECKED BY | APPROVED BY | ITEM | 130218 |
|---|---|---|---|---|
| 조윤영 | | | NAME | LOBSBOT_HOLIC |
| | | | DWG. NO. | DRIVE |
| | | | CODE. NO. | |
| | | | DATE | |

ANDAMIRO

ID3

ID2

ID1

LEFT ARM
SERVER MOTOR

RIGHT ARM
SERVER MOTOR

UP/DOWN
SERVER MOTOR

SERVER
MOTOR
[CON3]

| | TxD |
|---|---|
| 1 | TxD |
| 2 | RxD |
| 3 | VCC |
| 4 | GND |

POWER
[CON9]

| 1 | 12V |
|---|---|
| 2 | |
| 3 | GND |

VDD | 1
GND | 2

POWER INPUT PCB

LOBSTER
ROBOT
I/O
PCB

MOTOR_L
[JP1]

| GND | 1 |
|---|---|
| 12V | 2 |
| | 3 |
| MOTOR_L | 4 |
| M_CON | 5 |

LEFT
WHEEL
MOTOR

MOTOR_R
[JP2]

| GND | 1 |
|---|---|
| 12V | 2 |
| | 3 |
| MOTOR_R | 4 |
| M_CON | 5 |

RIGHT
WHEEL
MOTOR

BLDC MOTOR

BATTERY
POWER
[JP5]

| VDD | 1 |
|---|---|
| GND | 2 |

2 Cell Battery

3.7V * 2
1030 mA

| Title | Lobster Robot | |
|---|---|---|
| Size A2 | Number | Rev |
| Date | 2013.08.23 | Drawn by |
| Filename | | Sheet 1 of 1 |

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