

# Dunk Tank Prize



## Operation Manual



Design registration applied, utility model registration applied, and patent pending

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Be sure to read this Operation Manual and understand the contents thoroughly before operating in order use the product correctly.  
After reading the Operation Manual, keep it in a safe place near the product for easy access whenever needed.

# IMPORTANT

Read PRECAUTIONS and INSTALLATION  
Sections before operating game

## RF Notice


**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operating in a commercial environment. This equipment uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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# 1. Safety Precautions

Before operating the product, read the following safety precautions carefully and use the product correctly. Be sure to observe the following instructions since they are important for ensuring safety.

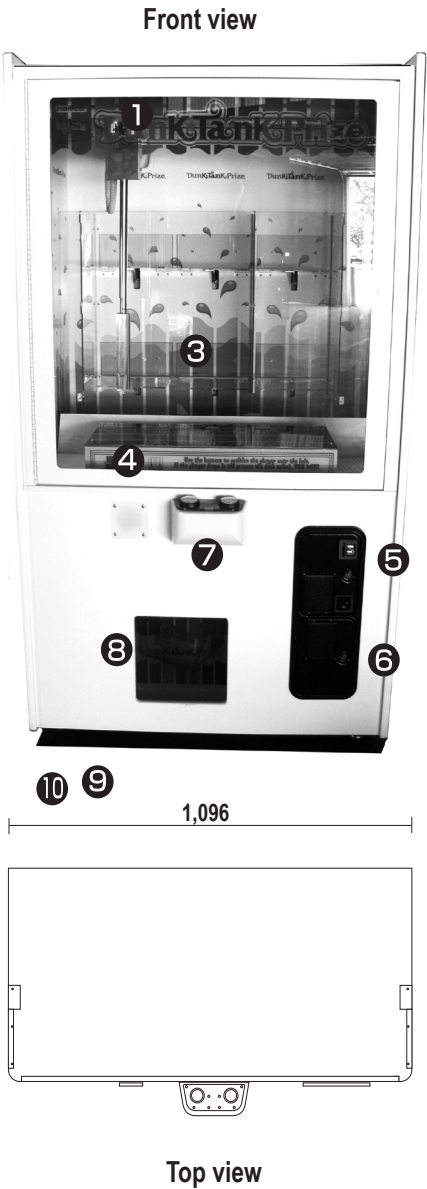
	<b>CAUTION</b>	<b>This indication is shown when failure to observe the instructions can result in personal injury or property damage.</b>
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## CAUTION

- When opening or closing the glass door, always hold the glass by hand and move the door gently. If the glass door is opened or closed carelessly, your hand or fingers may get pinched or the glass may break.
- When moving the machine, do not push the glass section. Tempered glass is used, but it can still break if pressed hard. If the glass breaks, personal injury can occur to the players or bystanders.
- Do not allow players to mishandle or abuse the machine, such as tilting/lifting and dropping the machine. Such action can cause the machine to tip over or the glass to break, and personal injury may occur to bystanders.
- During the installation, be sure to use the adjusters to ensure that the machine cannot be moved easily. If the adjusters are not used, the machine can move easily when people touch it lightly and personal injury may occur to bystanders.
- Carefully turn the adjusters to prevent your fingers from being pinched.  
The machine is very heavy. Do not place your hands under the machine.
- Never use the machine outdoors.  
Operating the machine in rain or dusty place can cause short-circuiting or electric shock.
- The power cord plug has a ground lead. Be sure to connect the ground lead to the specified grounding terminal on the power outlet. If the machine is not grounded, electric shock can occur in case of electrical leakage.
- Route the power cord so that it will not be stepped on by people or pressed on by another machine. If the power cord becomes damaged, short-circuiting or electric shock can occur.
- Do not pull the power cord to disconnect the power plug from the power outlet.  
Pulling the power cord can cause the internal wires to break, resulting in short-circuiting.
- Do not use the power cord if it becomes damaged. If the internal conductors become exposed, replace the power cord in order to prevent short-circuiting and electric shock.
- Observe the specified power supply voltage. If the power supply voltage is higher or lower, overheating can occur and may lead to a fire.
- In you touch metal parts during maintenance or cleaning, carefully touch the parts and avoid rubbing against them. Carelessly touching metal parts can cause personal injury such as cutting and poking.
- If you leave the machine unattended during maintenance, close the glass door, coin compartment door and rear panel. If they are left open, people nearby — particularly small children — can get injured by getting close to the machine or touching it.
- Never touch the machine while the slide unit or other drive systems are moving. Moving parts can cut or pinch your fingers.
- When removing the rear panel, carefully hold the panel with both hands. The rear panel is large and heavy, and it can cause injury if it is dropped on your feet.

## 2. Specifications and External Views

○ <b>Setting of game fee</b>	50¢, \$1.00, \$2.00, \$3.00 * Select by setting Switches No. 1 and No. 2 on the 4-way DIP switch 3.
○ <b>Setting of the number of game plays</b>	1 game
○ <b>Coin used</b>	25¢ coin
○ <b>External dimensions</b>	1,096 mm (Width) x 1,920 mm (Height) x 940 mm (Depth)
○ <b>Weight</b>	150 kg
○ <b>Power source</b>	Rated voltage: 120 VAC, rated frequency: 50/60 Hz, rated power consumption: 250 W, for indoor use



- ① Slide unit
- ② Push bar unit
- ③ Prize shelf unit
- ④ Game panel
- ⑤ Coin compartment — Serial No. indicated on the inside surface of the door.
- ⑥ Coin box — Coin meter located behind the coin compartment door.
- ⑦ Operation panel box — To be attached during machine installation.
- ⑧ Prize dispenser — Panel opening angle can be adjusted (in three steps) according to prize size.
- ⑨ Caster - not visible
- ⑩ Adjuster — Be sure to adjust during installation.

## 3. General Notes/Read This First

### Payout Management

DUNK TANK PRIZE is a managed payout machine. The operator of this game selects the prizes to install as well as the payout percentage. Please remember to check local regulations in your area to make sure you are operating this game in accordance with the law. Namco America, Inc will not be held responsible for any games being operated in violation of any laws.

When installing DUNK TANK PRIZE, make sure the payout settings are correct. Payout is adjusted on the Payout Management PCB located inside the coin compartment door. The 3 circular yellow rotary switches control payout. A very small flathead screwdriver is needed to adjust the rotary switches.

**See page 9 of the manual for setting values. By default, each machine is shipped out with the rotary switches set to "F". Please make sure you make the correct prize value adjustments.**

It is best take in to account your location, your other prize redemption games, your customers, and local regulations before choosing a prize value and payout setting.

For fine tuning of prize payout, note that the three rotary switches control three prize groups. Prize Zone A consists of the prize shelves on the left, Prize Zone B consists of the prize shelves in the middle, and Prize Zone C consists of the prize shelves on the right. **See page 7 of the manual for a picture of the prize groups.** If your prize mix has some \$80 prizes and some \$120 prizes, you have the option of setting the high value prizes to a lower payout percentage than the other prizes. Simply keep the high value prizes in one prize group, and adjust the rotary switch for that group to a lower payout.

### Calibration

Each game is calibrated on the assembly line during manufacturing. However, several factors including shipping the machine or how level it is may disrupt the calibration of the machine. To check calibration, turn the machine on and press the Test Switch located inside the coin door. The bar will then move to each hole, and press each button so that you can see where it is calibrated. **See page 14 and 15 of the manual for calibration instructions.** If the game is not calibrated correctly, prize payout can have problems. Recalibrate the machine if you have any doubts.

### Size of Prizes

The maximum prize dimensions for each individual shelf should not exceed 10" L x 10" W x 10" H. Prizes placed on the upper shelf in zone A, B, and C should not be taller than the "DUNK TANK PRIZE" logos on the back wall. The suggested maximum prize weight for each individual shelf is about 2 lbs. **(Note: When placing prizes on the shelf, set them as close as possible to the back wall to minimize stress on the shelf mechanism.)**

Prizes that exceed the maximum dimensions for a single shelf should use the “double-wing” setting (please refer to page 9 of the manual for DIP switch settings). The “double-wing” setting uses both zone A and zone B shelves to hold a single prize. The maximum prize dimensions for the “double-wing” setting should not exceed 10” L x 18” W x 10” H. The suggested maximum prize weight for the “double-wing” setting is about 4.5 lbs total. Prizes that are larger than the maximum dimensions for either setting are not recommended due to the possibility of the prizes getting stuck while dispensing.

A total of six prizes can be displayed using the individual shelf configuration. The “double-wing” setting can display a total of four prizes with one larger prize on the combined lower zone A and zone B shelves and one larger prize on the combined upper zone A and zone B shelves. Zone C will have one prize on the lower shelf and one prize on the upper shelf. When using the “double-wing” setting, prize hole B will be inactive, so please cover it up to prevent player confusion.

To reset the memory for coins/prizes on **Prize group A**, Hold down the Service Switch and press the Reset Switch.

To reset the memory for coins/prizes on **Prize group B**, Hold down the Left Button and press the Reset Switch.

To reset the memory for coins/prizes on **Prize group C**, Hold down the Right Button and press the Reset Switch.

A sound effect will confirm that the memory has been reset.

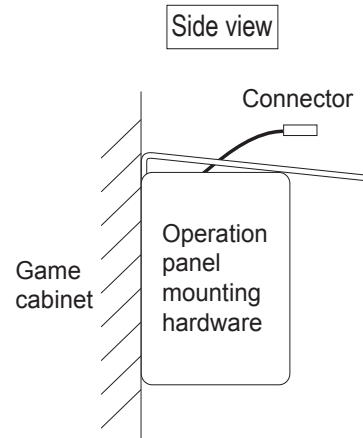
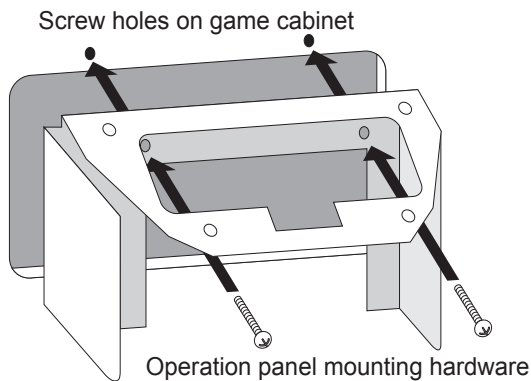
## **Volume Control**

There is a volume control located on the right side of the main controller board just below the heatsink, on the back side of the game (**See page 6**). The rear panel must be rotated down to access this control.

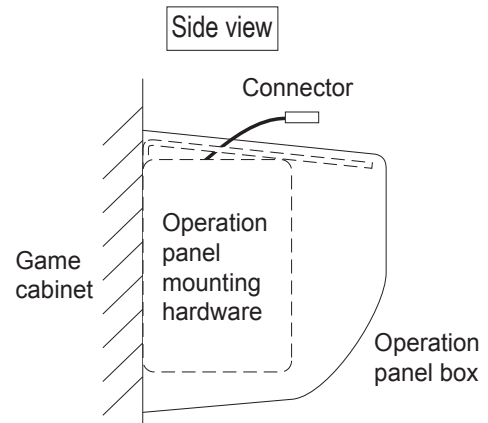
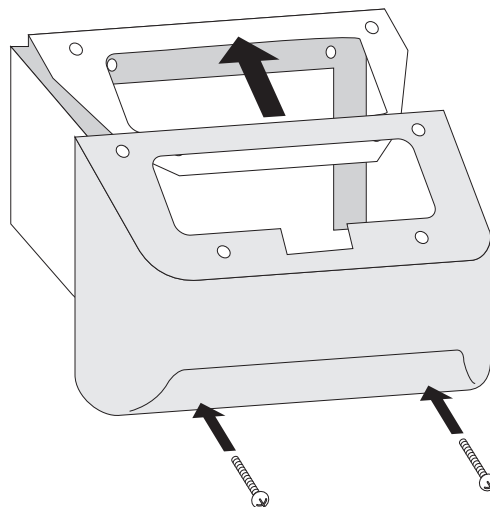
## 4. Installation of Operation Panels

- 1) Mount the two operation panels on the operation panel mounting sections on the front side of the game cabinet by using the operation panel mounting hardware and screws (4 x 20).  
In this step, put the three connector through the hole in the mounting hardware in advance to make the subsequent installation work easier.

\* Left = White connector (for Left button)  
Middle = Long connector (for 7-SEG)  
Right = Red connector (for Right button)



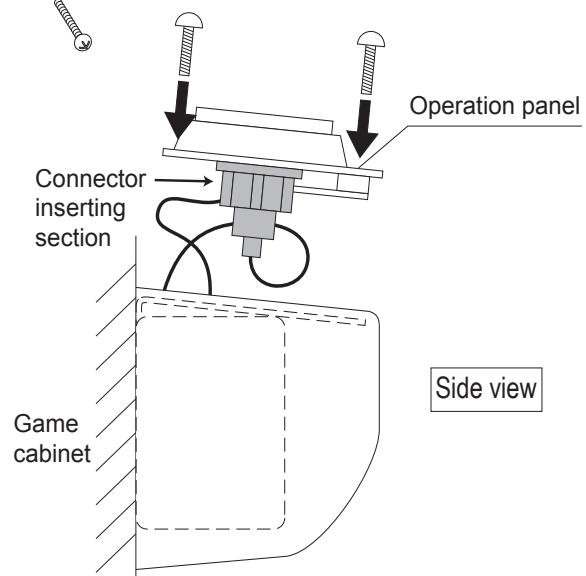
- 2) Install each operation panel box by tightening two screws (4 x 20) into the screw holes in the game cabinet.



### ⚠ CAUTION

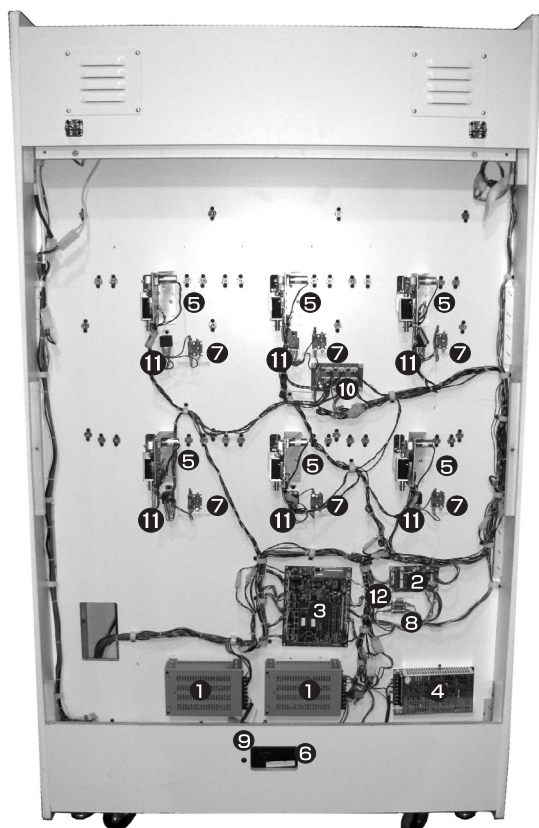
- Touch sheet-metal parts gently to prevent injury such as cutting and poking of fingers.

- 3) Connect the connectors, then secure the mounting hardware, operation panel box and operation panel using four hexagon-head screws (4 x 12) on each side.





## 5. Electric Parts and Components on Rear Panel



- ❶ 24-VDC power supply
- ❷ Motor Drive PCB
- ❸ Main PCB
- ❹ 12-VDC power supply
- ❺ Prize shelf unit
- ❻ Line Fuse 5-A SB
- ❼ 4-A SB fuse Max.
- ❽ 2-A SB fuse
- ❾ Noise filter/Line cord receptacle
- ❿ Solenoid PCB
- ⓫ Relay +24VDC
- ⓬ 3-A SB fuse

### ⚠ CAUTION

- Be careful not to drop the rear door onto your feet when opening or closing it.
- Tighten the screws on the 12V Power supply terminal board once a year. If those screws are loose, overheating can occur and may lead to a dangerous condition.
- Do not leave the backdoor open unattended. There are exposed surfaces that contain high voltages that should only be attended by a technician.

### ■ Accessories and parts provided with the game machine ■

1. Operation Manual   2. Cushioning mat set   3. Two keys   4. Operation panel set



# 6. Parts Installed near Coin Compartment Door

[Inside the door]  
[Counters and button switches]

1. Test switch \*

2. Service switch\*

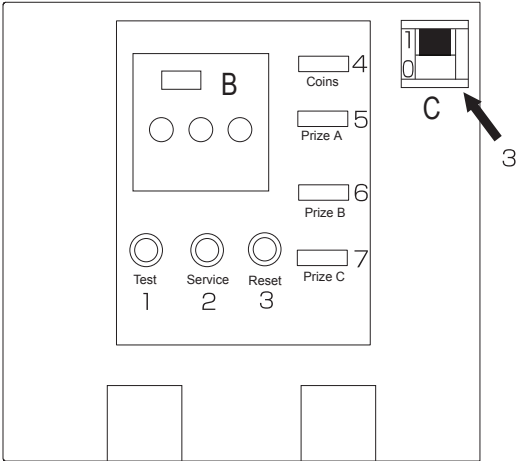
3. Reset switch

4. Coin counter

5. Prize A counter

6. Prize B counter

7. Prize C counter



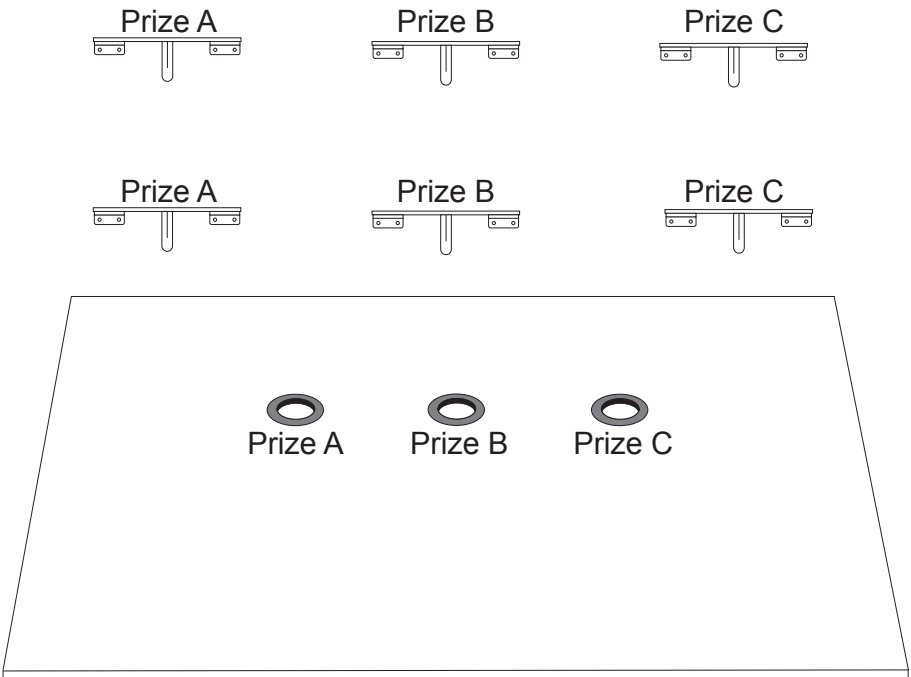
- \*1 Executes the Skip function for the confirmation of set positions.
- \*2 Serves both reset and memory functions.
- \*3 The machine does not operate for 10 seconds after power ON. Wait until the machine starts up.

- A. Main PCB  
(Refer to page 6 for the layout of main parts.)

B. Payout Management PCB  
(Refer to page 12 for the diagram and explanation of functions.)

C. Power switch \*3

< Holes on the game panel and prize positions >

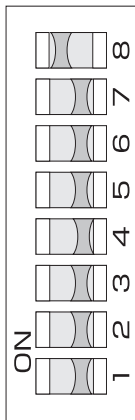


## 7. DIP Switch Settings

**[Main PCB DIP switch setting table]** The settings indicated in bold are factory settings.

The Main PCB is located on the back wall that you will see when you open the rear compartment door (page 6).

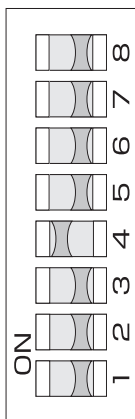
### (8-way) DIP switch 1



(Specified position)	(Normal)	( A )	( B )	( C )	* Keep these switches OFF unless holes are specified.
SW1-1	<b>OFF</b>	ON	OFF	ON	
SW1-2	<b>OFF</b>	OFF	ON	ON	
SW1-3	<b>OFF</b>	Enables the Automatic Position Correction function.			ON Disables Automatic Position Correction function.
SW1-4	<b>OFF</b>	Game Fee setting A See page 9 SW3 -1-2 (Default)			ON Game Fee setting B See page 9 SW3 -1-2 (Optional)
SW1-5	<b>OFF</b>				ON
SW1-6	<b>OFF</b>				ON Uses debug information.
SW1-7	<b>OFF</b>				ON
SW1-8	OFF	Free play			<b>ON</b> Managed play

### (8-way) DIP switch 2

When using debug information, set Switches No. 6 and No. 8 on the 8-way DIP switch 1 to ON, and use Switches No. 1 through No. 3 on the 8-way DIP switch 1 to select the positions.



SW2-1	OFF			
(Debug)	(No. of game plays)	(No. of prizes)		(Payout setting)
SW2-2	ON	OFF		ON
SW2-3	OFF	ON		ON
SW2-4	OFF Disables Tilt function.		ON Enables Tilt function.	
SW2-5	OFF			
SW2-6	OFF			
(Bar descending distance setting)	High	Medium	Low	Low
SW2-7	OFF	ON	OFF	ON
SW2-8	OFF	OFF	ON	ON

\* Keep Switches No. 2 and No. 3 on the DIP switch 2 in the OFF position.

### [Debug]

- No. of game plays** The number of games played in the set number of game plays  
(This will be cleared to 0 when the set number of game plays is reached.)
- No. of prizes** The number of prizes dispensed at the time when the set number of game plays is reached  
This indicates whether the number of prizes dispensed is appropriate in relation to the number of games played.  
Note that (−1) and (0) indicate normal, while (1) means that prizes are dispensed excessively.
- Payout setting** This indicates the number of games to be played before the payout management is set to disengage.

### [Tilt function] (tamper prevention)

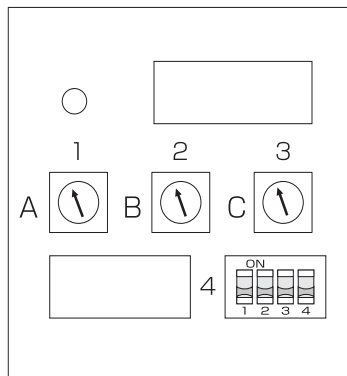
When the Tilt function is set to ON, the machine displays “E5” and stops operation if it detects a certain amount of vibration.

To cancel, press the Reset switch. The machine also automatically returns to normal condition after 30 seconds.

## 8. Dispensing Mechanism

**[Payout Management PCB]** (Located behind the coin compartment door on the right side of the coin chute)

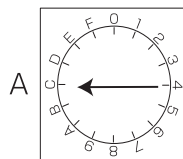
\* If the management function is not used, set Switch No. 8 on the DIP switch 1 to OFF.



1. Rotary switch A → Manages the payout of prize A.
2. Rotary switch B → Manages the payout of prize B.
3. Rotary switch C → Manages the payout of prize C.
4. 4-way DIP switch

\* Enter the setting of the number of games to be played before prize dispense for each type of prizes A, B and C. Using a slotted screwdriver, turn each rotary switch (dial). Then, press the Reset switch. Pressing the Reset switch registers the setting value in the memory. The Reset switch is located at "9" in the diagram shown in the section "Counters and button switches."

\* The factory payout settings are as follows:  
Prize A = Dial F (999 games)  
Prize B = Dial F (999 games)  
Prize C = Dial F (999 games)



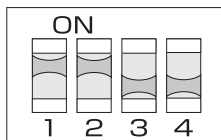
**Example: Setting for prize A (dial setting)**  
To dispense one prize item per 400 games, set the arrow to the position C by using a small slotted screwdriver. Then, press the Reset switch.

\* Regarding the setting range, refer to the section "Payout Management PCB - Rotary switch settings, 16 steps."

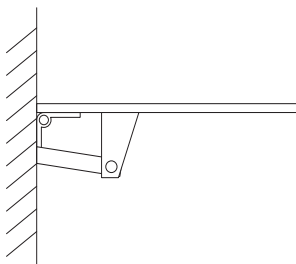
**[Payout Management PCB DIP switch setting table]** The settings indicated in bold are factory settings.

**(4-way) DIP switch 3 (Game fee setting and demo management)**

Game fee setting  
See page 8  
SW1-4



A setting	1 coin	2 coins	3 coins	4 coins
B setting	2 coins	4 coins	8 coins	12 coins
SW3-1	OFF	ON	OFF	<b>ON</b>
SW3-2	OFF	OFF	ON	<b>ON</b>
SW3-3	<b>OFF</b> Normal wing movement		ON Double-wing fold simultaneously	
SW3-4	<b>OFF</b> No demo		ON Demo	



### ● Double-wing setting (2-in-1 specification)

When Switch No. 3 on the 4-way DIP switch on the Sub-PCB is set to ON, the prize shelves for prizes A and B fold simultaneously. This setting is useful for wide prize items.

\* The lower prize shelves fold first.

For tall prize items, fold the upper prize shelves to provide more room above the prize items.

\* Be sure to place the "Do Not Enter" cards on the prize B holes to prohibit their use.

\* When the double-wing setting is enabled, place prize items by taking heed of weight balance.

**[Payout Management PCB - Rotary switch settings, 16 steps]**

Switch scale	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
No. of game plays	20	30	40	60	80	100	120	160	200	250	300	350	400	600	800	999

For example, when the rotary switch dial is set to "4," the Payout Management function stops temporarily when the number of games played reaches 80, and the game condition is set so that the result is 100% dependent on the player's skill. This condition remains until the player obtains a prize item.

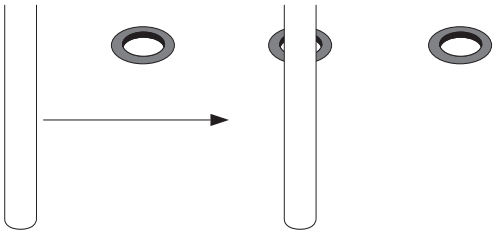
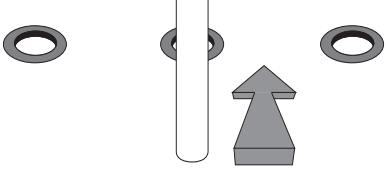
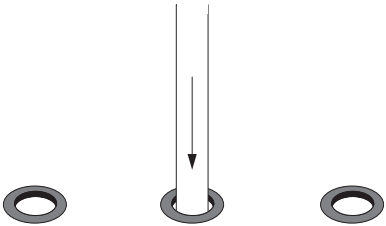
\* The number of game plays can be confirmed by "payout setting" of the debug information.

This is for checking whether each set number of game plays corresponds with the number of game plays indicated on the switch scale.

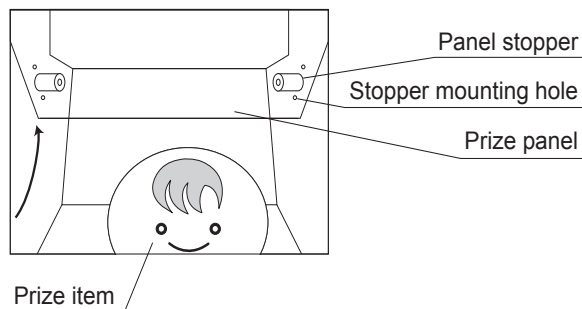
\* Overpay may result even within the set price range, due to swinging of the bar or other reasons.

Use the above setting values as a guideline and allow a sufficient margin in settings.

## [How to play the game]

	<ul style="list-style-type: none"> <li>● Press the Left button on the operation panel to move the clear bar toward the right. Stop the bar when the center of the clear bar aligns with the hole for the target prize.</li> </ul>
	<ul style="list-style-type: none"> <li>● Press the Right button to move the clear bar toward the back.</li> </ul>
	<ul style="list-style-type: none"> <li>● Release the Right button at the moment when the clear bar reaches the position immediately above the target hole. When the Right button is released, the clear bar starts to descend.</li> <li>● If the bar enters the hole, a prize item will drop and be dispensed to the player.</li> </ul>

## [Prize dispenser outlet]

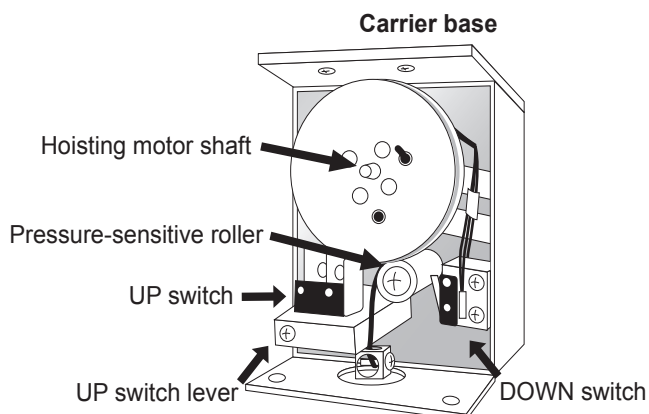


- The opening angle of the panel at the prize dispenser outlet can be adjusted in three steps according to the size of prize items.
- \* After removing the panel, move the stoppers to the appropriate positions. (The panel can be dismantled after the four bolts are removed.)

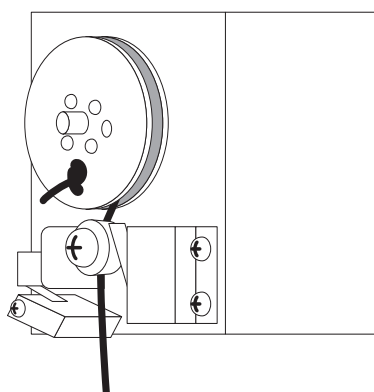
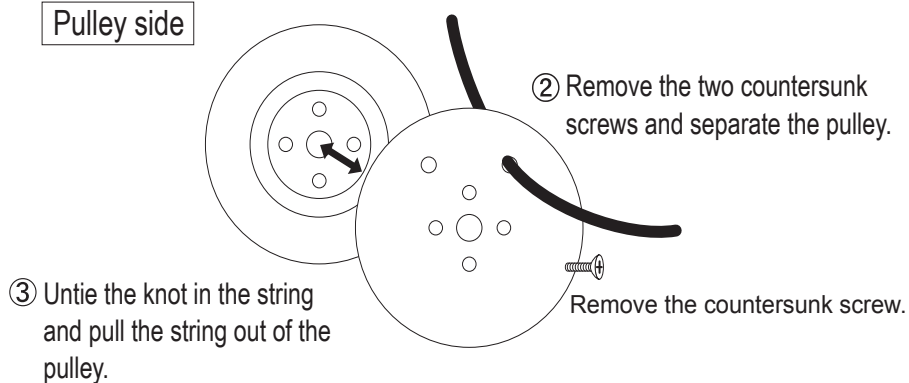
## 9. Push bar Unit

### [How to replace the string]

- ① Remove the four screws and dismount the carrier cover.



Pulley side

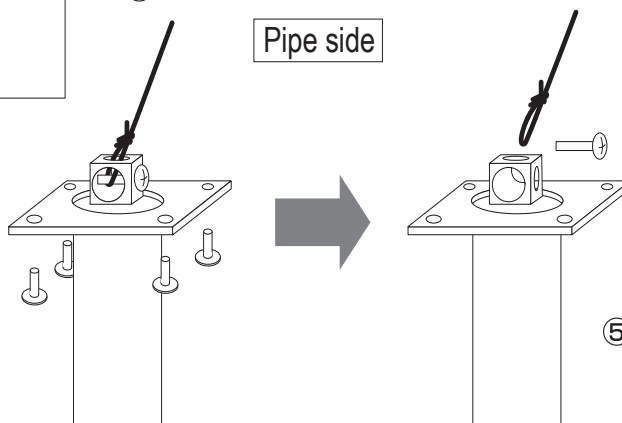


### ⚠ CAUTION

- Be careful of sharp edges when touching sheet-metal parts in order to prevent injury such as cutting and poking of hands or fingers.

- ④ Remove the four screws and dismount the Z-axis pipe.

Pipe side

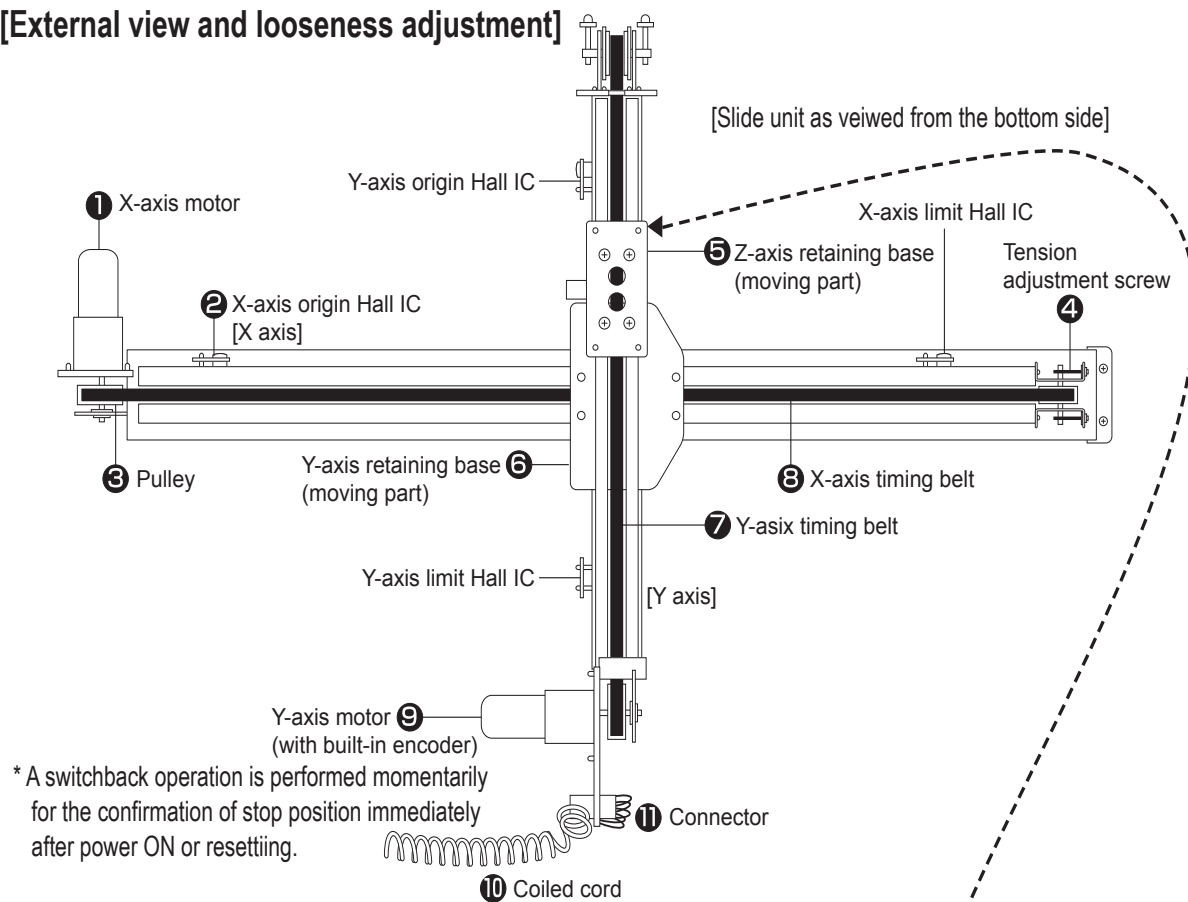


- ⑤ Loosen the screw and detach the string.

- ⑥ After replacing the string, follow the above procedures in reverse to reinstall the parts.

## 10. Slide Unit (Crisscross Type)

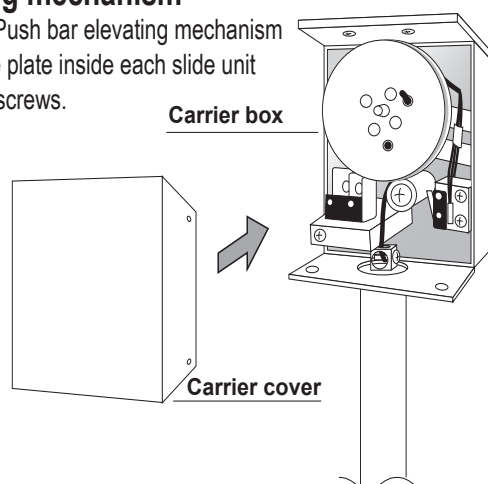
[External view and looseness adjustment]



\* A switchback operation is performed momentarily for the confirmation of stop position immediately after power ON or resetting.

### ■ How to install the Push bar elevating mechanism

Install the Push bar elevating mechanism to the base plate inside each slide unit using four screws.



### ⚠ CAUTION

- Never touch the slide units while they are in operation. Touching a slide unit in operation can cause personal injury by catching your arm or hand between the base plate and Y-axis mechanism or pinching your fingers between the belt and pulley.

# 11. Cautions

## **[Payout management] (The Payout Management function can be disabled by DIP switch setting.)**

When enabling the Payout Management function, take note of the following:

- When the machine is installed or relocated, be sure to conduct the position confirmation. If necessary, conduct position adjustments.
- After operating any of the rotary switches on the Payout Management PCB, be sure to press the Reset switch or turn off the Power switch and restart the machine.
- To check whether the position settings are appropriate, conduct the position confirmation process at least once a week (everyday if possible) by pressing the Test switch and activating the Position Confirmation mode.

The Payout Management function operates more accurately and effectively when the above instructions are observed closely.

## **[Troubleshooting for malfunction of Payout Management function]**

### **■ 1: Investigation of cause based on DIP switches and debug information**

First, check to make sure that Switch No. 8 on the DIP switch 1 is set to ON.

If the above switch is ON, check the overpay count in the Debug mode.

\* Note that clearing the number of game plays also clears the overpay count, thus disallowing the use of data for troubleshooting.

When the overpay count is "0" or "-1," the Payout Management function is operating properly.

### **■ 2: Position Confirmation Skip**

Execute the Position Confirmation Skip. If the clear bar descends at a location away from the target hole, the cause of overpay is most likely due to a faulty position adjustment. In that case, conduct the position adjustment process to rectify the overpay condition.

< If the position is still displaced after position adjustments >

If the position is still displaced when the Position Confirmation Skip is executed even though position adjustments have been completed, check the following:

- If there is a deviation between the clear bar inclination at the time of position adjustment and the current clear inclination, the clear bar descending location will change even if the position adjustment is not altered. Note that accidentally pressing the clear bar during the replacement of prize items can cause the bar to bend or change the tilting angle.
- If the machine is relocated, the clear bar inclination may change due to the horizontal level of the machine. After the machine is moved, be sure to conduct the position confirmation process, and readjust the positions if necessary.



# 12. Position Adjustment

## [Position adjustment procedure]

To ensure accurate payout management, it is necessary to conduct the position adjustment process.

### ■ 1: Activate the Position Adjustment mode from the normal mode.

Make sure that Switches No. 1 through No. 5 on the DIP switch 1 are set to OFF. Then, while holding the Test switch pressed, push the Reset switch. This activates the Position Adjustment mode (the machine is ready for position adjustments) from the normal mode.

\* Regarding the positions of switches, refer to page 5.

### ■ 2: Operate the clear bar to the adjustment position for the target hole.

To operate the clear bar, use the Service switch, Test switch, and the Right and Left buttons on the operation panel.

[X-axis movement = Right/left movement]

When the Service switch is pressed in the Position Adjustment mode, the 7-SEG unit displays “— —”.

In this condition, pressing the Right button on the operation panel moves the clear bar toward the right, and pressing the Left button moves the clear bar toward the left.

[Y-axis movement = Forward/backward movement]

When the Test switch is pressed in the Position Adjustment mode, the 7-SEG unit displays “| |”.

In this condition, pressing the Right button on the operation panel moves the clear bar toward the back, and pressing the Left button moves the clear bar toward the front.

\* Switch the clear bar operation between the X-axis movement (Service switch + Right/left button) and Y-axis movement (Test switch + Right/left button) a number of times until the clear bar is positioned immediately above the target hole.

\* Note that the motor operates at slower speed than normal during position adjustment. The machine is programmed to operate the motor slowly for easier adjustment, and it does not denote a malfunction.

■ **3: Press the Reset switch to lower the clear bar.**

When the clear bar is positioned above the target hole, press the Reset switch.

The clear bar will start descending.

After the clear bar descends and enters the hole, it returns to the origin and stores the position data in the memory.

If the clear bar does not enter the hole, it returns to the position prior to the operation of the Z axis for lowering the clear bar. Move the X and Y axes again so that the clear bar is positioned immediately above the hole.

■ **4: Repeat the procedures described in ■ 2 and ■ 3 for all holes.**

■ **5: Turn off the Power switch on the machine, then restart it.**

When the procedures from ■ 1 to ■ 4 are finished, position adjustments have been completed.

When the machine is turned off and turned on again, the machine will exit the Position Adjustment mode and return to the normal mode.

■ **6: Execute the Position Confirmation Skip.**

After returning to the normal mode (game mode), press the Test switch and use the Position Confirmation Skip function to make sure that the position adjustments have been completed successfully.

\* The machine automatically checks the set positions starting from the leftmost hole.

Confirm that the clear bar enters each hole.

## 13. Automatic Position Correction Function

The Automatic Position Correction function automatically rewrites position information if a prize item is dispensed when the prize dispensing condition is not met.

This function stores the data of coordinates at which a prize item was dispensed.

\* Note \*

If you dispense a prize item by lowering the bar at a random location (coordinates) and pressing the prize dispense button in order to check the folding of prize shelves during game, the Automatic Position Correction function may store those coordinates in the memory.

To disable this function, set Switch No. 3 on the DIP switch 1 to ON.

# 14. Troubleshooting

## [Troubleshooting based on error indication]

### When E1/E2 error is displayed

The E1 error is generated when the X axis (right/left movement) does not operate properly, while the E2 error occurs when the Y axis (forward/backward movement) does not function properly. These errors generally occur when any of the following symptoms is generated.

- **When error occurs during origin return operation**

When an origin return operation is performed during the initial movement or for another reason, this error can occur if the Hall IC at the origin is skipped.

When the X and Y axes return to their respective origins, check to make sure that they have stopped at the Hall IC positions. If the Hall IC has been skipped, bend the metal part attached with a magnet slightly toward the Hall IC so that the magnet is closer to the Hall IC. The distance between the Hall IC and magnet should be 1 to 2 mm.

- **When motor is spinning freely**

The setscrews on the timing pulleys with the belt may be loose, allowing the motor to spin freely.

If this is the cause of the problem, you can hear the motor operating sound. Listen carefully to see if the motor is operating.

If the motor is operating, tighten the setscrew on each pulley using a hexagon wrench.

If the motor is not operating, refer to the following section.

- **When motor or Slide Mechanism PCB is faulty**

If the motor does not operate, switch the Slide Mechanism PCBs between the right and left sides to see if the same symptom appears. If the opposite side does not operate properly after switching the PCBs, one of the Slide Mechanism PCBs is faulty. If the same side continues to malfunction, the motor is suspected to be faulty.

### When E3 error is displayed

The E3 error is generated when the Z axis does not operate properly.

To examine the detail of the malfunctioning condition, perform the following check.

- ① Remove the cover from the carrier box.
- ② Lower (or raise) the clear bar to a position that is not the upper-limit or lower-limit position.
  - \* In this step, do not pull the clear bar, but rotate the pulley to move the clear bar. If the clear bar cannot be moved manually, the hoisting motor may be faulty. In that case, replace the motor.
  - \* If the pulley can be rotated without exerting any force, the hoisting motor may be spinning freely. Tighten the setscrew on the pulley (at two locations) using a hexagon wrench. If the string is wrapped around the pulley, the setscrew may not be visible. In that case, unwind the string in order to tighten the setscrew. (See page 9.)
- ③ Turn off the Power switch, then restart the machine.
- ④ Check the timing of error generation.
  - The error is generated without machine operation.
  - The error is generated after the clear bar reaches the upper-limit position and stops moving
  - The error is generated after the clear bar descends.

**< The following shows the error generating timings and countermeasures >**

- **When the error is generated without machine operation**

The problem may be caused by a faulty hoisting motor or Slide Unit PCB. Turn the pulley by hand. If the pulley cannot be moved by hand, the motor may be faulty. If it can be rotated by hand, the Slide Unit PCB may be faulty. If the Slide Unit PCB is suspected to be the cause of the problem, switch the right and left PCBs to see if the problem will be corrected.

- **When the error is generated after the clear bar reaches the upper-limit position and stops moving**

The UP switch that detects the clear bar reaching the upper-limit position may be defective. Open the carrier box cover and check the UP switch. Also, check to make sure that the clear bar presses the UP switch lever completely.

- **When the error is generated after the clear bar descends**

Check to see if the DOWN switch for detecting the clear bar reaching the lower-limit position operates reliably. The DOWN switch is operated by the pressure-sensitive roller. Check to make sure that the pressure-sensitive roller presses the DOWN switch firmly and the switch is released completely when the string slackens. Also, check to see if the string is wound in the wrong direction on the pulley. In that case, wind the string in the correct direction by hand. When the string is wound on the correct direction, the pulley rotates in the counterclockwise direction when the clear bar rises.

### **When E4 error is displayed**

The E4 error is generated when there is an abnormality in the position data. If there is no position information on which control operations are based, this error is generated when a coin is inserted or the Service switch is pressed. This error is sometimes caused by the effect of uneven electric current generated when the power is shut off.

**The above condition can be rectified by conducting the position adjustment process again.**

### **When E5 error is displayed**

The E5 error is generated when the Tilt function is activated.

When the Tilt function is enabled by setting Switch No. 4 on the DIP switch 2 to ON, it will be activated when a certain amount of vibration is detected.

To cancel this error, press the Reset switch. The machine also returns to normal operating condition after 30 seconds.

## [Malfunctions without error indication]

If the machine does not operate properly but no error indication appears, check the following.

**The Payout Management function does not operate accurately.**

### < Check the position adjustment data >

First, make sure that position adjustments have been completed correctly by executing the Position Confirmation Skip.

#### • About Position Confirmation Skip

The Position Confirmation Skip function confirms position adjustments.

To execute the Position Confirmation Skip, press the Test switch when the machine is in normal mode.

When this function is executed, the clear bar moves to the adjusted position for each hole. Make sure that the clear bar moves to the correct positions.

### < Positions are adjusted correctly but overpay occurs >

If the positions are adjusted correctly, then check the following.

#### < Sub-PCB for difficulty-level management >

When the management function fails to operate properly after a certain number (20 times) of game plays even if the positions are adjusted correctly, the Sub-PCB for difficult-level management may be defective. In the Debug mode, check to make sure that the number of game plays are set properly on the dial. Also, check to make sure that the harness is firmly connected to the Sub-PCB.

#### < Position confirmation not possible >

**(The arriving positions during the Position Confirmation Skip operation are not consistent and the clear bar sometimes travels all the way to the end.)**

Position data may be lost.

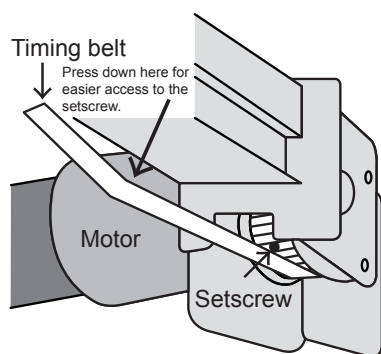
Refer to the troubleshooting procedure for "When E4 error is displayed" in the section, "Troubleshooting based on error indication."

## X-/Y-axis related errors

If the X-/Y-axis does not operate properly, malfunctions and inaccurate payment management may occur.

Faulty X-/Y-axis operation that does display any error indication can be caused by free spinning of motor due to a loose setscrew.

If the arriving positions during the Position Confirmation Skip operation are not consistent, suspect the above condition as a possible cause.



#### < Confirmation method >

Grasp the belt for the X axis or Y axis and pull it in the direction opposite to normal traveling direction. If the belt slips by more than 2 or 3 mm, the pulley may be loose.

#### < Correction method >

- (1) By operating the button, move the slide unit to a location where it is easily accessible.
- (2) Disconnect the power supply cord from the PCB or turn off the power to the machine.
- (3) By pulling the belt, position the setscrew to a location where it is easily accessible.  
(Remove the black connector is removed from the back side of the motor, and then pull the motor. This reduces the motor resistance and allows easier movement of the belt.)
- (4) Tighten the setscrew using a 2-mm hexagon wrench. It is also necessary to check that the setscrew is aligned with the indentation on the shaft and that the setscrew is not in contact with any other section. If the setscrew is resting on an incorrect location, the end of the setscrew can protrude above the pulley surface. Be sure to tighten the setscrew at the correction location.

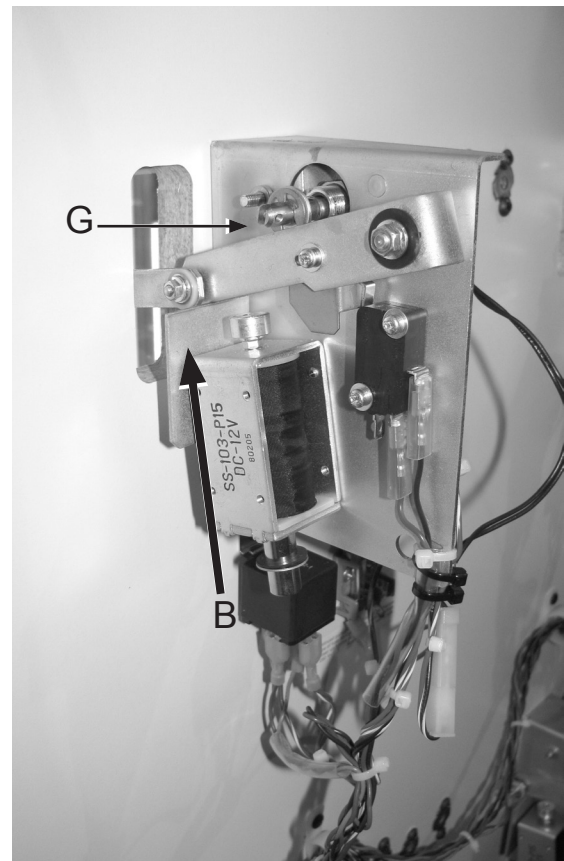
## Adjusting the Prize Shelf Solenoid Assembly

Should the shelf bracket assembly need replacing or reinstallation after repair, the following procedure should be followed:

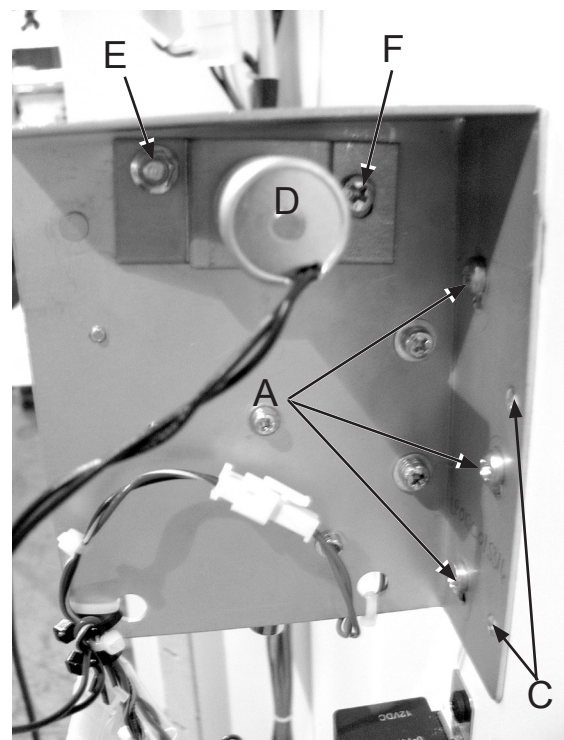
The 3 screws (A) mounting the assembly to the wood are elongated so the unit can slide up and down. The assembly should be positioned using these 3 screws so that when a 2 lb. prize is placed on the shelf, the upward force (B) from the trip solenoid is sufficient to move the lever arm enough to release the prize. When the unit operates with consistency, screws can be added to position (C) to lock the unit in place.

In addition to the trip solenoid, there is a locking solenoid (D) that disengages when the trip solenoid is fired. This locking solenoid is provided as a safety backup to prevent the shelf from accidentally releasing due to someone violently shaking the machine.

This is adjusted by loosening the Pivot nut (E) and the adjustment screw (F) and rotating the locking solenoid so the gap (G) between the lever arm and the locking plunger is as close as possible without making contact. Once completed, the adjustment screw (F) and the pivot nut (E) should be tightened to prevent further movement.



FRONT SIDE VIEW

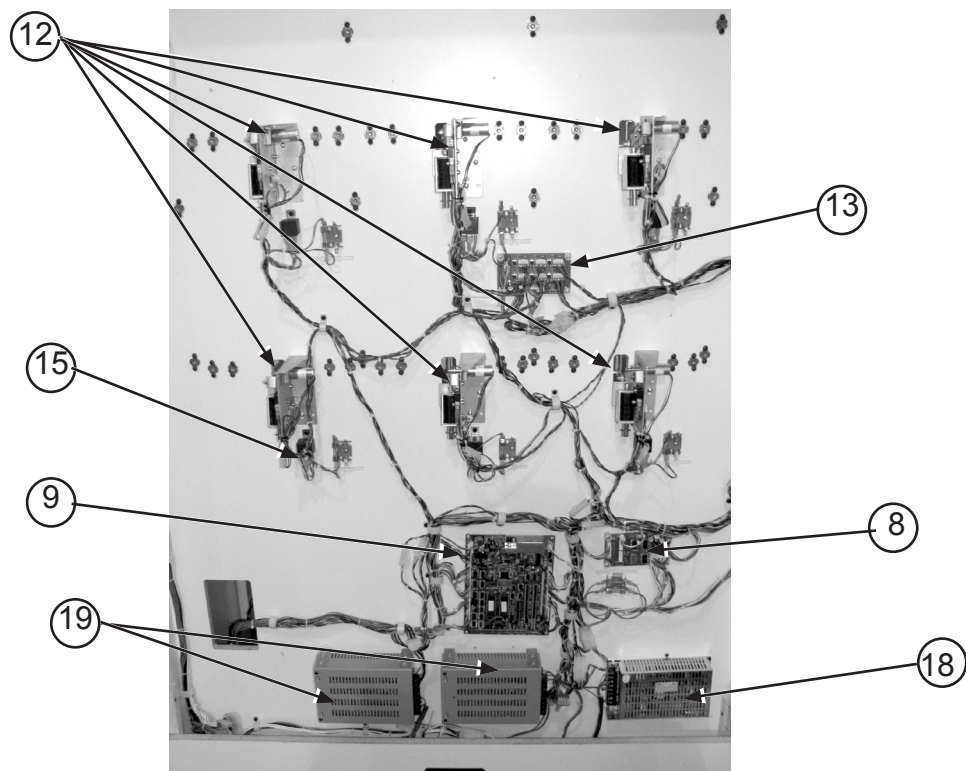
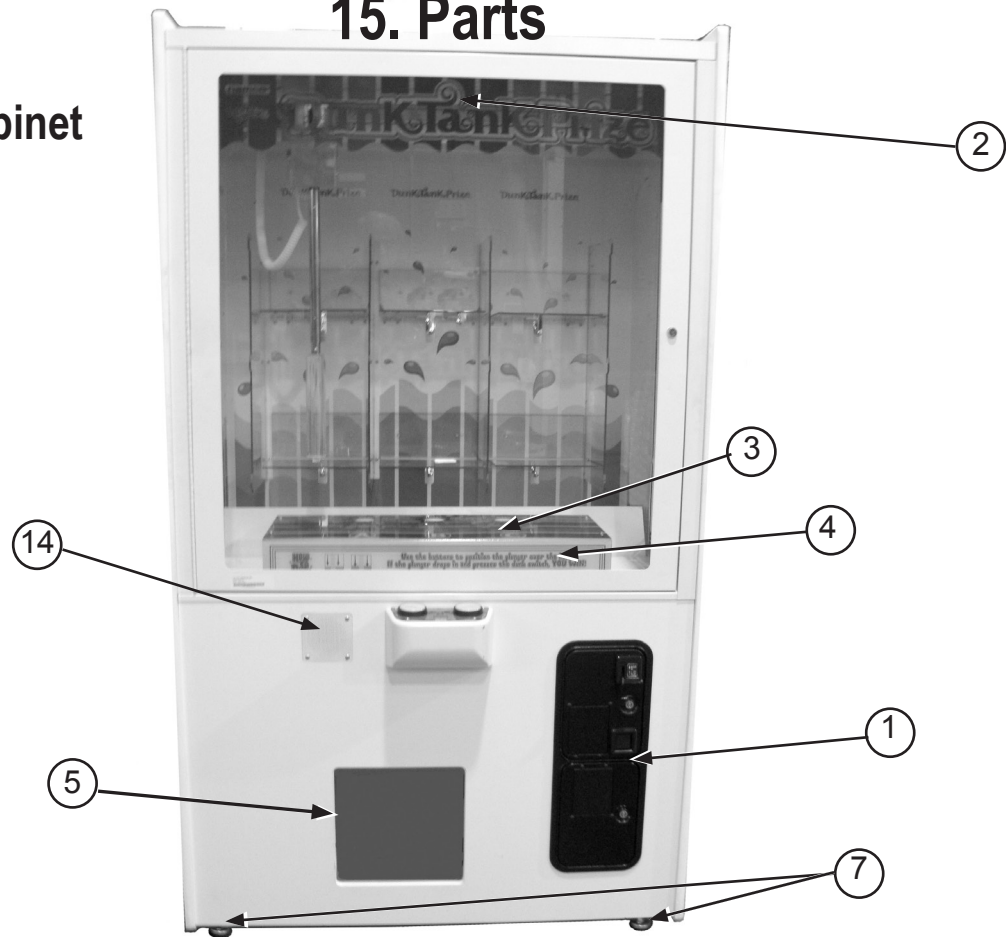


BACK SIDE VIEW



# 15. Parts

## 15-1 Cabinet





## Cabinet Parts List

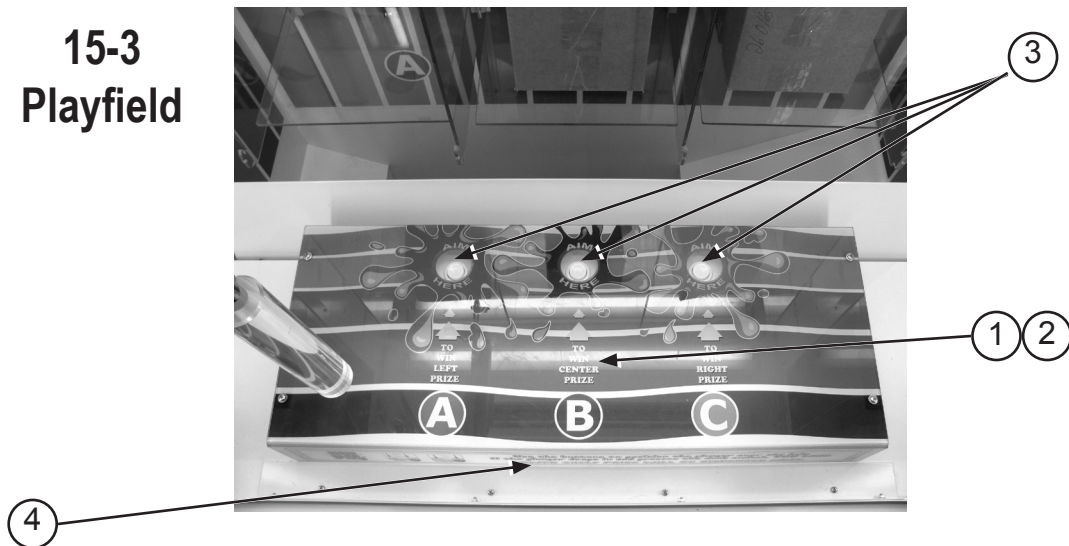
Item	Description	Part No.
1	Coin Door Assembly	VG83-13011-00
2	Front Glass Decal	TD40-13847-00
3	Playfield Decal	TD40-13851-00
4	Instructions Decal	TD40-13852-00
5	Prize door	TD95-13855-00
6	Swivel Caster (not shown)	
7	Leg Levelor (4)	
8	Motor Drive PCB	BL03-12300-96
9	Main PCB Dunk Tank Prize	TD03-13821-99
10	7 Segment Display PCB (Not Shown)	BL03-12300-97
11	Payout Control PCB (Not Shown)	BL03-12300-98
12	Prize Tray Solenoid Assembly (6)	TD03-13821-92
13	Solenoid Driver PCB	TD03-13821-95
14	Speaker 4" 4 Ohm	VG54-12904-00
15	Relay 12VDC SPST(6) - located below Prize Tray Assys.	TD85-13869-00
16	ON-OFF Power Switch (Not Shown)	VG10-13829-00
17	Filter,10 AMP,Corcom 10EJT (Not Shown)	VG78-12947-00
18	Switching Power Supply 12VDC	VG88-10064-00
19	Switching Power Supply,150W,24VDC (2)	VG88-11114-00
20	Fluorescent fixture & lamp Assy. T5 36" (2) (Vertical mtg.)	VG57-13868-00
21	Fluorescent fixture 30 Watt. (2) (by X-Y mechanism)	VG57-02028-00

## 15-2 Front Door



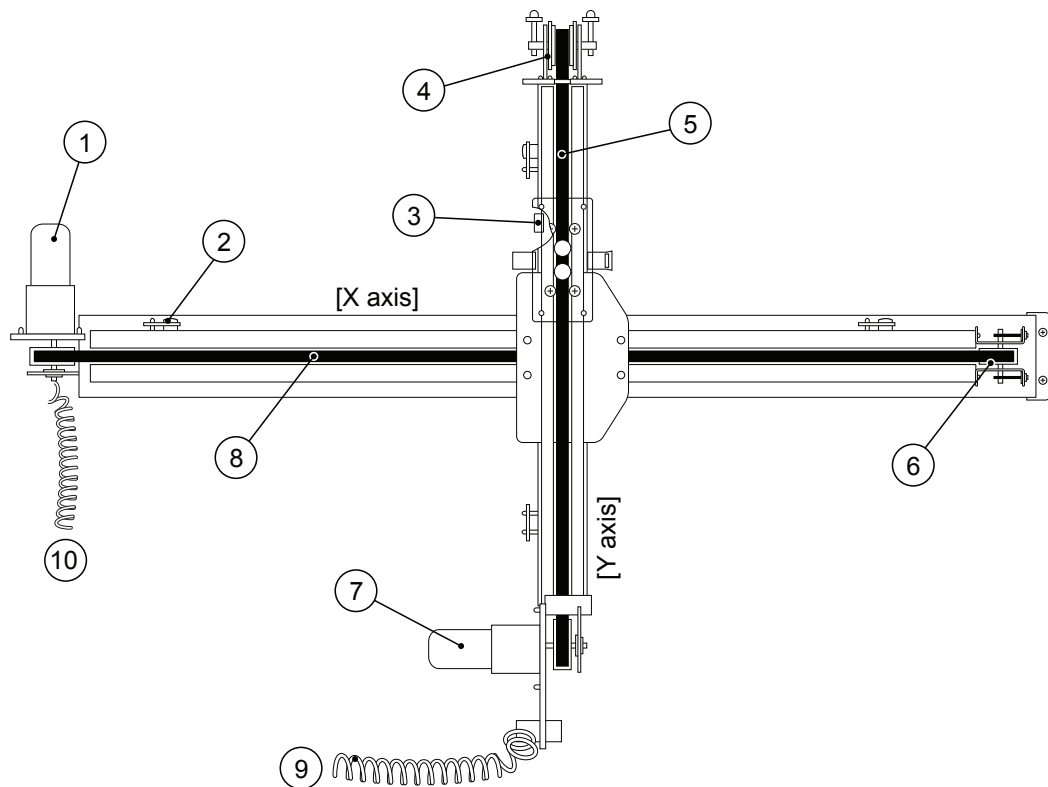
Item	Description	Part No.
1	Front Door Glass (Tempered)	TD99-13856-00
2	Lock 7/8 Tub K. A W/1-1/4~ STR CAM (No Key)	VG26-13822-00
3	Key for Lock 7/8 TUB K.A 15103 (not visable)	VG26-13823-00
4	Cam (R) 3 PNT. Ver.2	VG10-13824-00
5	Rod 3 PNT. Lock TVZN (2)	TD10-13877-00
6	Decal Art Front Door	TD40-13847-00

## 15-3 Playfield



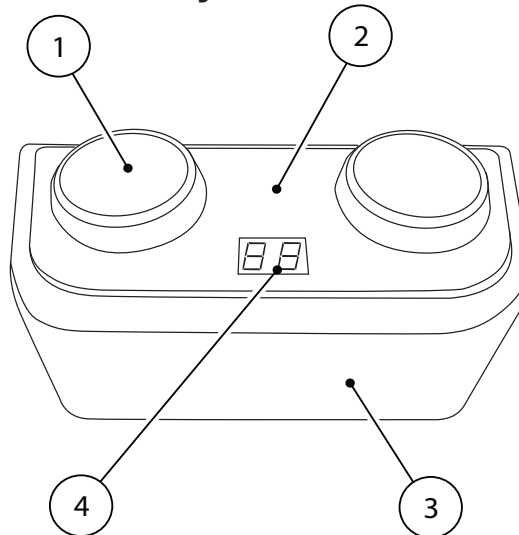
Item	Description	Part No.
1	Playfield Art Decal	TD95-13851-00
2	Fluorescent Lamp Assy. 24" (not shown)	VG57-02028-00
3	PushButton White Switch Assembly (3)	VG53-13827-00
4	Instruction Decal (not visible)	TD95-13852-00
5	Playfield with 3 Holes (plexiglass)	TD95-13858-00

## 15-4 Carriage



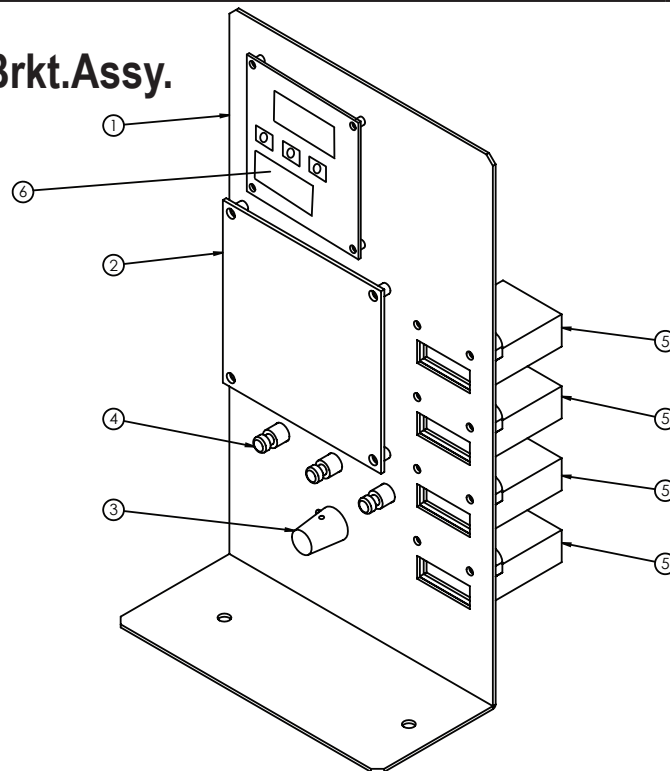
Item	Description	Part No.
1	Linear Motion Motor-X Axis	BL03-12367-00
2	Linear Motion Sensor PCB	BL03-12358-00
3	Linear Motion Bearing	BL05-12331-00
4	Linear Motion Pulley-Y Axis	BL09-12329-00
5	Linear Motion Timing Belt - Y Axis	BL06-12341-01
6	Linear Motion Pulley - X Axis	BL09-12329-00
7	Linear Motion Motor-Y Axis	BL58-12363-00
8	Linear Motion Timing Belt - X Axis	BL06-12341-00
9	Curley Cable - Linear Motor Assy. "Y" (Long)	BL50-12336-00
10	Curley Cable - Hit Assy. "X" (Short)	BL50-12335-00

## 15-5 Switch Panel Assembly



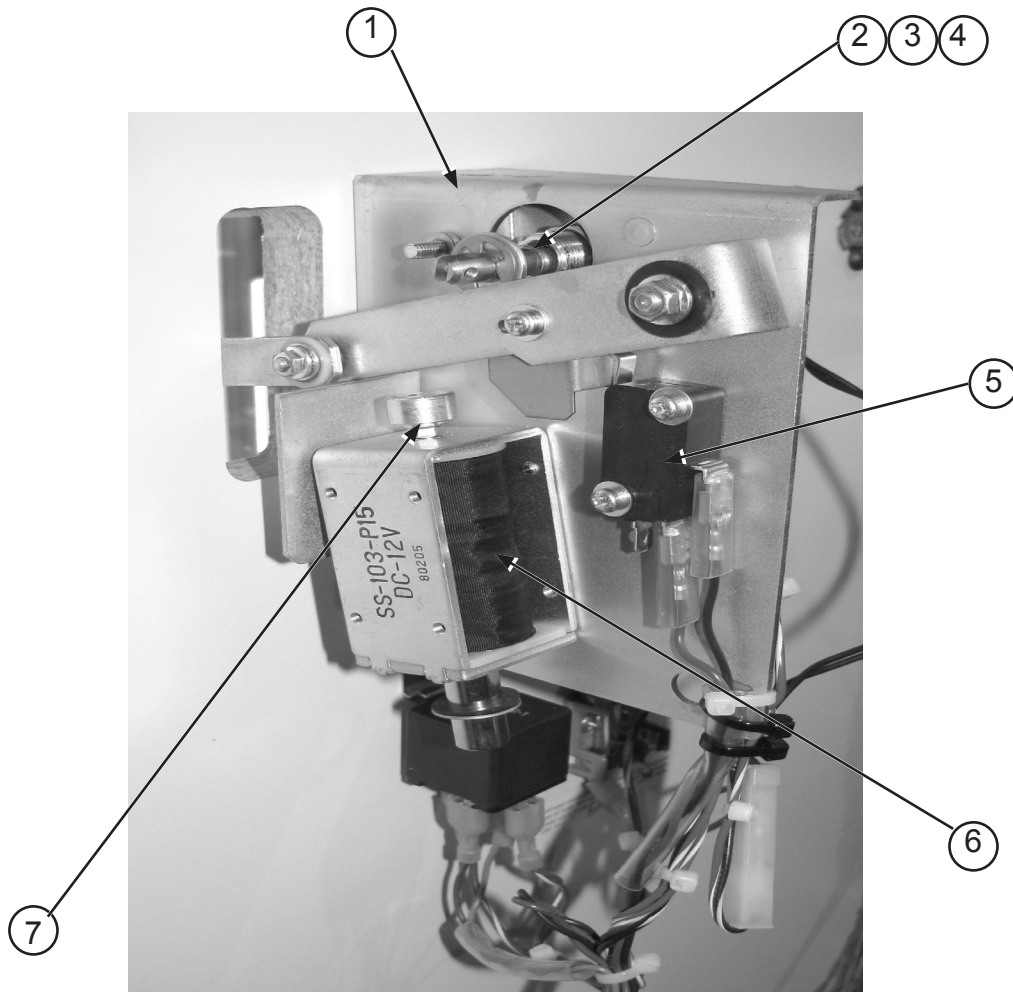
Item	Description	Part No.
1	Switch Panel Pushbutton	VG53-13754-05
2	Switch Panel Acrylic	TD40-13853-00
3	Switch Panel Vacu-form	BL90-12313-00
4	7-Segment Display PCB	TD03-13821-97

## 15-6 Service Brkt.Assy.



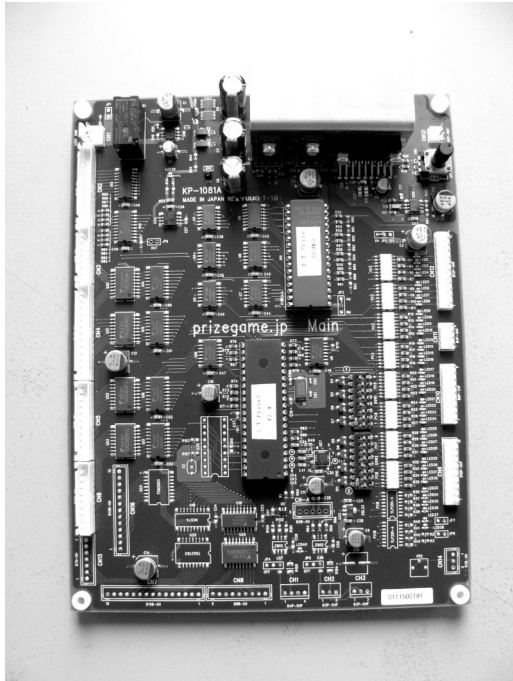
Item	Description	Part No.
1	Bracket (Service & Alarm PCB)	TD10-13835-00
2	Alarm Prize PCB (Optional)	TD15-13870-00
3a	Potentiometer - 100 Ohm 12.5 Watts	VA75-00103-00
3b	Volume Knob	VA64-00104-00
4	Test Switch (3)	
5	Panel Meters (4)	VG83-13196-00
6	Payout Control PCB	BL03-12300-98

## 15-7a Prize Shelf Assy. TD03-13821-92

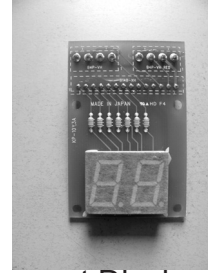


Item	Description	Part No.
1	Shelf Solenoid Bracket Assembly (Mod.)	TD10-13990-00
2	Locking Solenoid	TD36-13991-00
3	Locking Solenoid Plunger	TD59-13992-00
4	Locking Solenoid Spring	VG22-13993-00
5	Micro Switch	TD53-13994-00
6	Trip Solenoid	TD36-13995-00
7	Trip Solenoid Plunger	TD59-13996-00

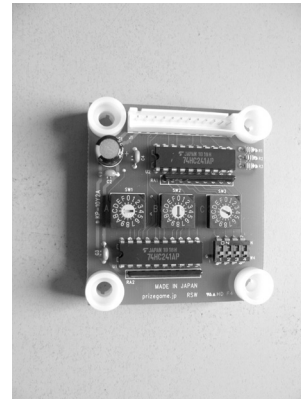
## 15-6 PC Boards



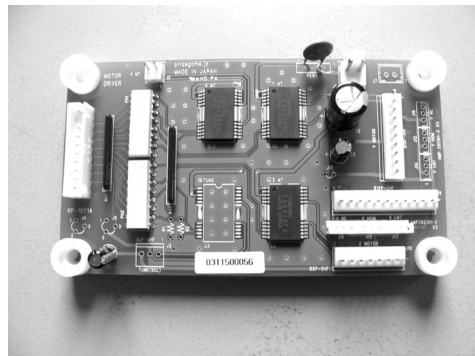
Main PCB Dunk Tank Prize  
TD15-13821-99



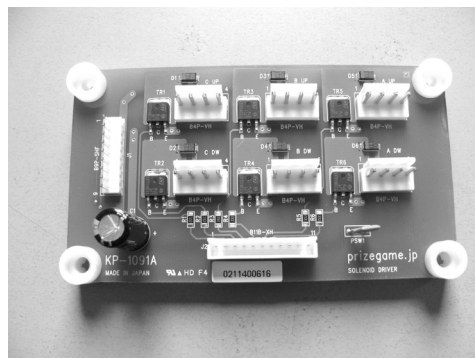
7 Segment Display PCB  
BL03-12300-97



Payout Control PCB  
BL03-12300-98



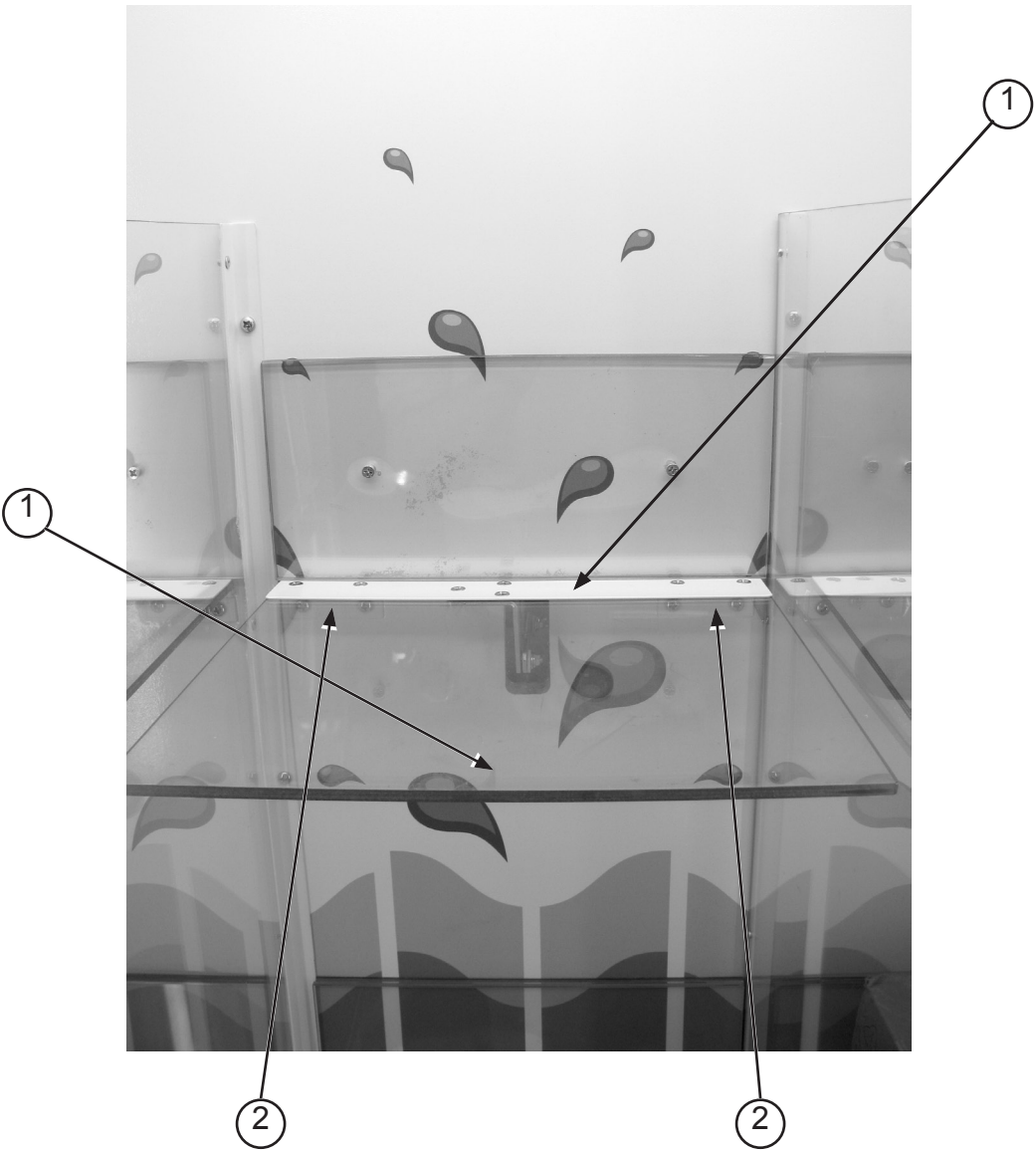
Motor Drive PCB  
BL03-12300-96



Solenoid Driver PCB  
TD03-13821-95



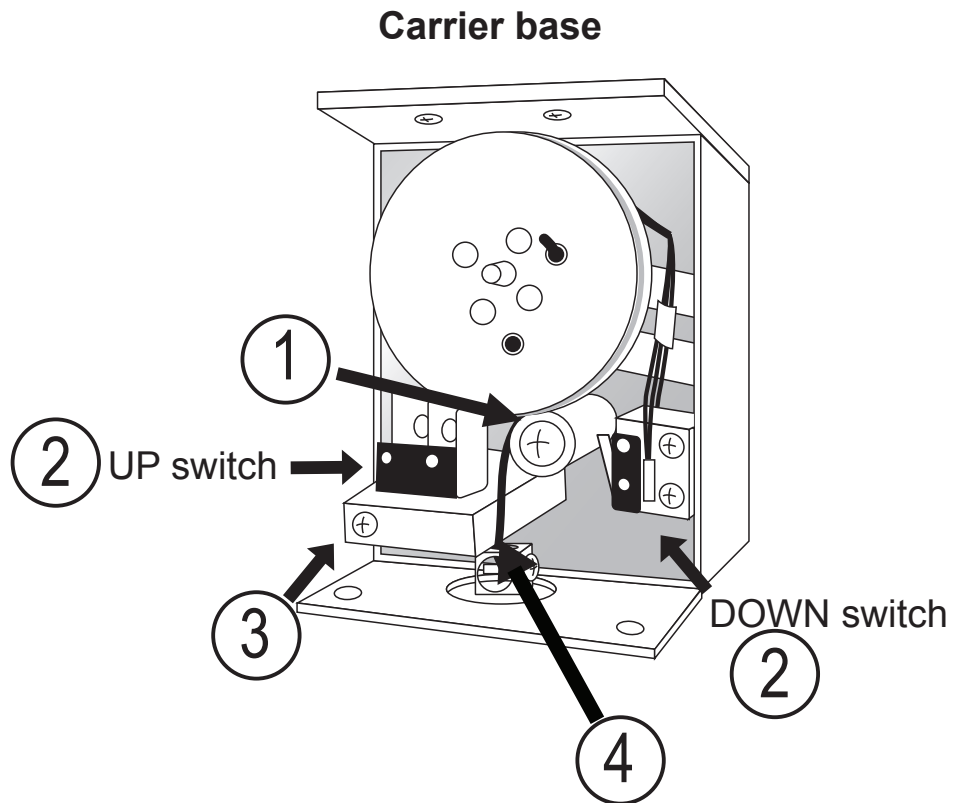
15-7 Shelf Front



Item	Description	Part No.
1	Retainer Plate (White powdercoat)	TD10-13833-00
2	Hinge (White powdercoat) (2 per shelf)	TD10-13834-00
3	Acrylic Shelf	TD95-13854-00

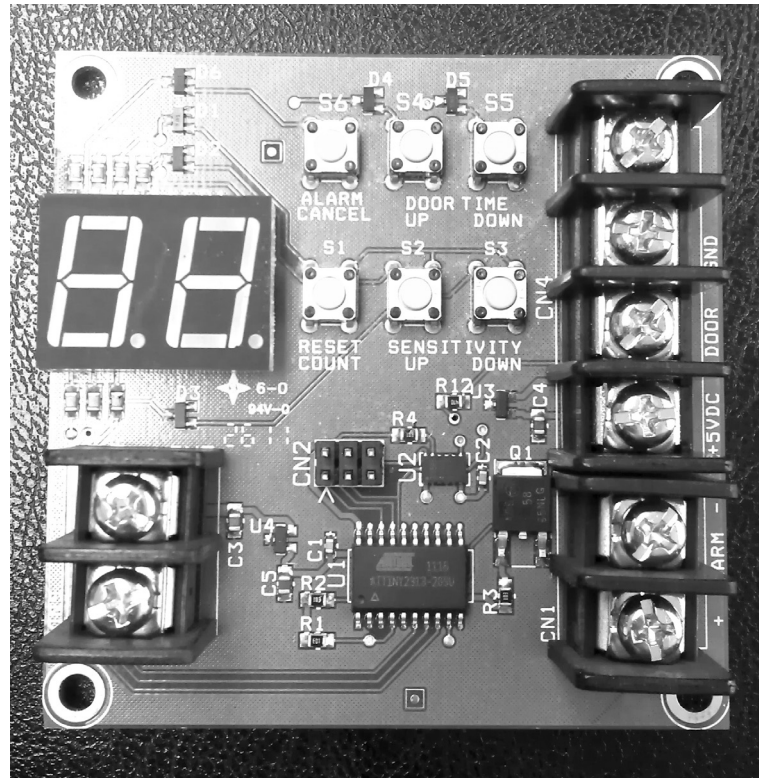


## 15-8 Push Bar Unit TD03-13821-94



Item	Description	Part No.
1	Pressure-Sensitive Roller (1)	TD95-13885-00
2	Up&Down Switch (2)	TD57-13886-00
3	Up Switch Lever	TD95-13887-00
4	String	TD68-13888-00
5	Acrylic Rod (Not Shown)	TD95-13889-00

## Optional Alarm Circuit



The tilt sensor shows “CA” on the display as it starts up. This means that it’s calibrating. Whatever orientation it’s in during this phase, is the orientation it wants to stay in. Once it’s running, the alarm will trip if it moves too far off this orientation.

After it’s done calibrating, it waits about five seconds before it can trip the tilt alarm. This is to let everything to settle, so you don’t get false triggers on boot.

When nothing is happening, the display will show the current alarm trip count. Both door and tilt events add to this count.

To see the sensitivity setting, press the sensitivity up or down buttons. This will display a number from 1 (least sensitive) to 9 (most sensitive). Press these buttons again to adjust the value. Less sensitive means, the board needs to be tilted farther and for longer to trip the tilt alarm.

The door timer settings work the same way -- press door timer up or down to see the value, then press again to adjust. The possible values are 15, 30, 45, or 60 seconds. If the door is open for this long, the alarm will trip and the alarm count will increment. Closing the door will silence the alarm.

Press the reset count button to clear the alarm count.

When the alarm trips, it will continue for 30 seconds. Press the alarm cancel button to cancel the alarm early. However, if the event is still pending (e.g., the board is still tipped past center) the alarm will immediately retrigger.

## 1







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Seller warrants that its printed circuit boards and parts thereon are free from defects in materials and workmanship under normal use and service for a period of ninety (90) days from the date of shipment. Seller warrants that its video displays (in games supplied with video displays) are free from defects in material and workmanship under normal use and service for a period of thirty (30) days from the date of shipment. None of the Seller's other products or parts thereof are warranted. Seller's sole liability shall be, at its option, to repair, replace, or credit Buyer's account for such products which are returned to Seller during said warranty period, provided:

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- b) Such products are returned prepaid to Seller's plant; and
- c) Seller's examination of said products discloses to Seller's satisfaction that such alleged defects existed and were not caused by accident, misuse, neglect, alteration, improper repair, improper installation, or improper testing.

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