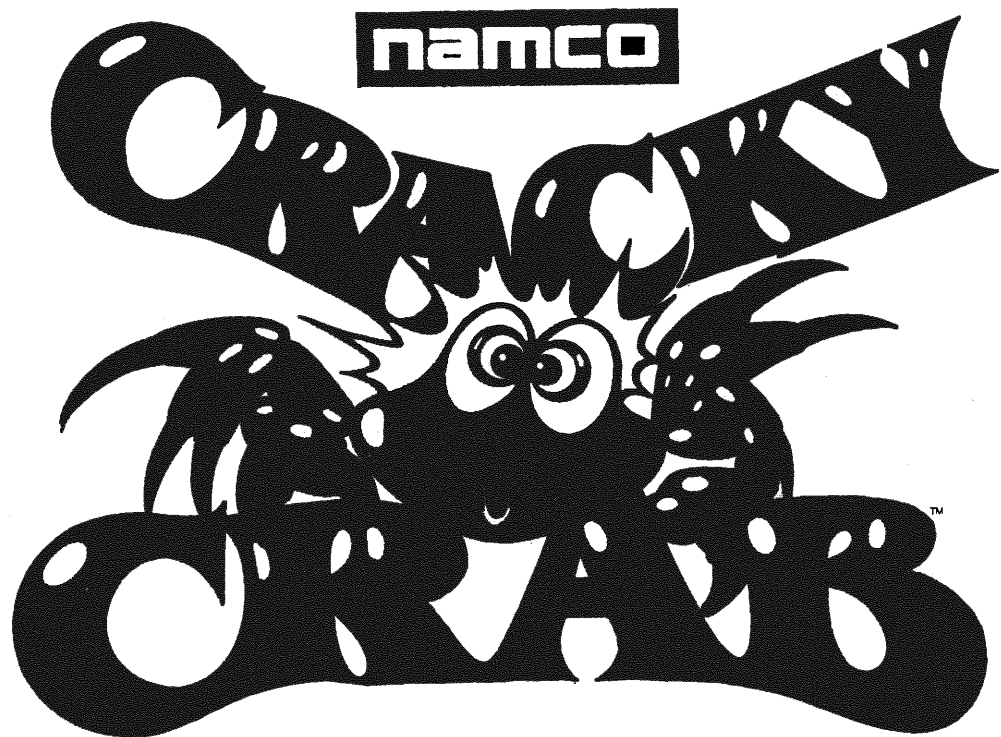


Namco-America, Inc.



Operators Manual

FCC 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 operated in a commercial environment. This equipment generates, 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.

CRACKY CRABTM Operators Manual

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Published by:
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Printed in the U.S.A.

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CRACKY CRAB™

1. SPECIFICATIONS

POWER SUPPLY:	UL Listed Custom 95W Power Supply		
POWER CONSUMPTION:	Total 95 W		
DIMENSIONS (assembled):	Width	Depth	Height
	45" (112.5 cm)	33" (82.5 cm)	67" (167.5 cm)
CRATED DIMENSIONS:	Width	Depth	Height
	46" (116.8 cm)	44 ¹ / ₂ " (113.0 cm)	43 ¹ / ₄ " (109.85 cm)
SHIPPING WEIGHT:	446 lbs. (202 kg.)		
ACCESSORIES:	Keys:		
	Coin Door		2
	Main/Marquee Cabinets (back door)		2
	Operator Convenience Pack:		
	Ticket Option Message Signs		8
	Hex Head Machine Screws with Washers		3
	1/4 20 Well Nuts		4
	Guard PCB Assembly		1
	Replacement Bulbs		4
	Replacement Fuses		4
	Replacement LED		1
	1/4 20 x 3" Bolts		4
	1/4 Fender Washers		4
	4mm Well Nuts		4
	2.5 mm Allen Wrench		1
	4 mm Allen Wrench		1
	1/8 inch Allen Wrench		1
	Instruction Manual		1

Note: Specifications may change without prior notice. Modification and/or alteration of the CRACKY CRAB™ game with kits or parts not supplied by NAMCO may void the warranty.

2. PRECAUTIONS

2-1 Installation Precautions

This game is designed for indoor use only. It should **NOT** be installed outdoors or under the following conditions:

- a. In areas directly exposed to sunlight, high humidity, direct water contact, dust, high heat or extreme cold.
- b. In locations that would present an obstacle in case of emergency, i.e. near fire equipment or emergency exits.

- c. On an unstable surface or floor subject to vibration.
- d. Against a wall that would restrict air circulation.

2-2 Handling Precautions

- a. Do not subject game to physical shock when transporting or moving it.
- b. The cabinet should be grounded with a securely connected ground line.
- c. The game includes areas of high-voltage. Care should be taken at all times to avoid electrical shock whenever inspecting or adjusting it.
- d. Power must always be turned off before replacing any parts.
- e. When unplugging the game from an electrical outlet, always grasp the plug, not the cord.
- f. DO NOT attempt to repair the Printed Circuit Board (PCB) on site. It contains sensitive integrated circuit chips that could easily be damaged by even the small internal voltage of a multi-meter. Always return the PCB to your distributor for any repairs.
- g. Exercise caution to prevent damaging crab figures or track mechanism.

3. UNPACKING

CRACKY CRAB™ is shipped in a single carton, with the Main Cabinet (base) on a floor tray, and the Marquee Cabinet in a separate box in front of it. To unpack:

- 1. Remove Marquee Cabinet box from shipping container and set it aside.
- 2. Roll the Main (base) Cabinet off the shipping carton base on its casters.

4. INSPECTION

After the two CRACKY CRAB™ assemblies are removed from their shipping boxes, carefully inspect them to insure that the game is complete and was delivered in good condition by doing the following:

- 1. Examine the main cabinet exterior for dents, cracks, or broken parts.
- 2. Inspect the marquee cabinet for dents, cracks, or broken parts – particularly the acrylic display panel.
- 3. Open the rear doors of both cabinets and;
 - a. Verify that all plug-in connectors (on the cabinet harness) are firmly plugged in. DO NOT force connectors together. The connectors are labeled to assure the proper orientation. A reversed edge connector can damage a PCB and will void your warranty.
 - b. Inspect the power cord to insure that there are no insulation cuts or dents.
 - c. Inspect the power supply connectors.
 - d. Inspect all other major sub-assemblies, to make sure that they are mounted securely and that all ground wires are firmly connected.

5. INSTALLATION

Allow yourself about twenty (20) minutes for proper assembly of CRACKY CRAB™.

5-1 Preparation

Follow these steps in order to complete assembly:

1. Remove and read operator's manual.
2. Remove tape from coin slots, and remove keys
3. Open coin box door and remove power cord from cash box.
4. Locate Operator Convenience Pack in cash box. It includes:
 - a. Ticket option message signs (8)
 - b. Hex head machine screws with washers (3)
 - c. 1/4 20 well nuts (4)
 - d. Guard PCB assembly (1)
 - e. Replacement LED (1)
 - f. 1/4 20 x 3" bolts (4)
 - g. 1/4 fender washers (4)
 - h. 4 mm well nuts (4)
 - i. 2.5 mm allen wrench (1)
 - j. 4 mm allen wrench (1)
 - k. 1/8 inch allen wrench
 - l. Replacement bulbs - GTE Sylvania type 161, 14 volts (4)
 - m. Replacement fuses - 3 amp. slow blow (1), 3 amp. fast blow (1), 5 amp. fast blow (1), 8 amp. fast blow (1)

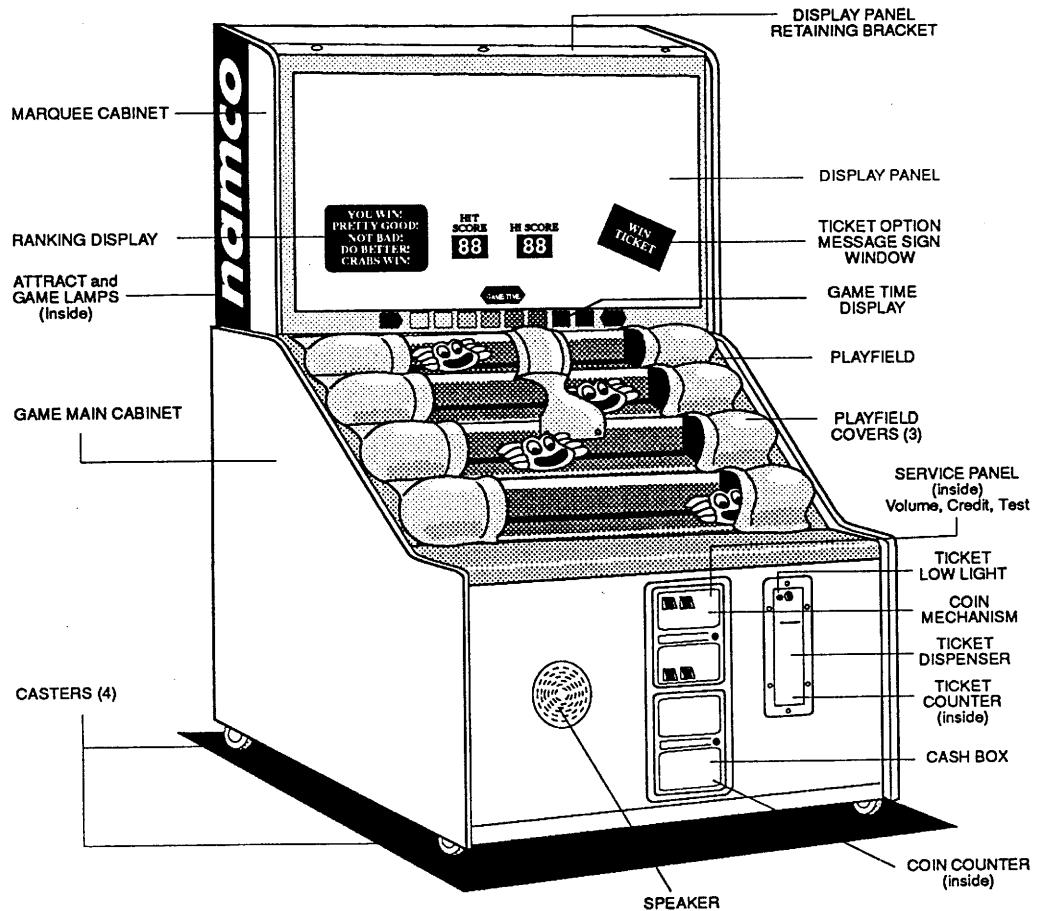


Illustration 5-1, 3/4 FRONT VIEW

5-2 Installing Marquee Cabinet

CAUTION, THE MARQUEE CABINET IS HEAVY AND REQUIRES A MINIMUM OF TWO PEOPLE TO SAFELY INSTALL.

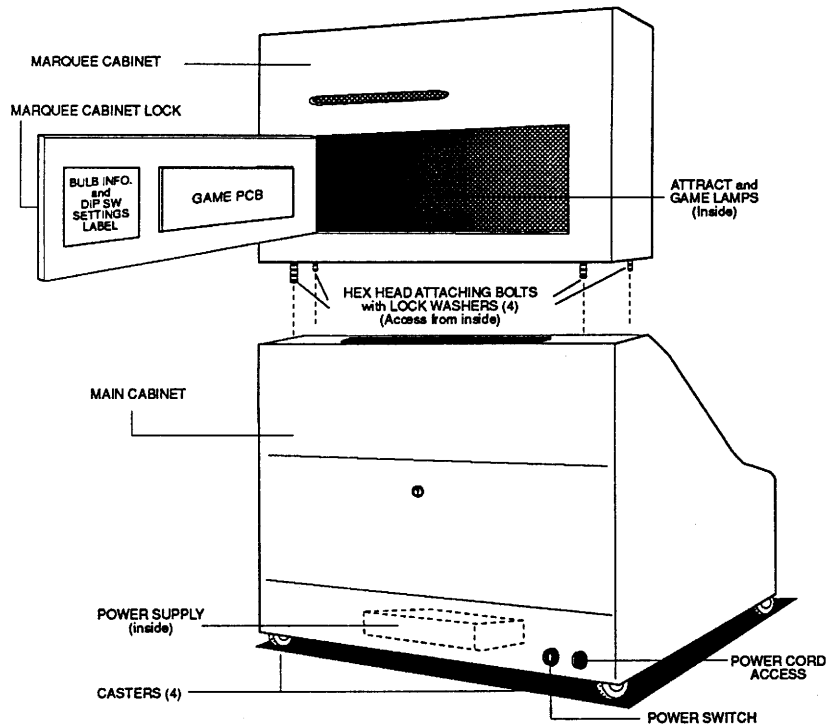


Illustration 5-2, 3/4 BACK VIEW

1. With the help of another person, carefully lift the Marquee Cabinet up and set it on top of the Main Game Cabinet.
2. While supporting the marquee, open the back door of the Marquee Cabinet, and locate the four (4) holes in its base.
3. Insert four (4) hex head bolts (provided in cash box) down through these holes until they engage into the weld nuts attached to the bracket within the Main Cabinet.
4. Open the backdoor to the Main Game Cabinet and insert the connecting harness up through the top opening into the Marquee Cabinet. Connect the harnesses in the Marquee Cabinet to the matching harness connectors from the Main Game Cabinet.

CAUTION: Be certain that the harnesses connecting the base unit to the marquee do not hang down into the base cabinet where the top crab drive assembly may catch on them while in motion.

DO NOT attempt to tilt or support the assembled game by pulling, pushing or applying lifting straps to the marquee cabinet, as it could be torn loose from the base.

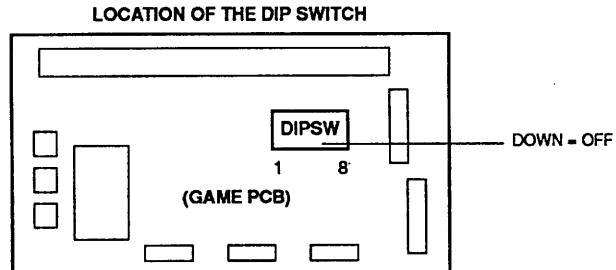
5-3 Power On

Connect the power cord to an AC outlet and turn the power on with the switch located next to it.

5-4 DIP Switch Settings

5-4-1 Game Pricing, Attract Sound and Ticket Level Settings

These options can be changed by setting the DIP Switches on the Game PCB located inside the back door of the Marquee Cabinet. Refer to the table below showing DIP Switch settings for different combinations of options.



ITEM	CONTENT	STATUS OF THE DIP SWITCH							
		1	2	3	4	5	6	7	8
GAME FEES	1 COIN 1 GAME	ON	ON	ON					
	1 COIN 2 GAMES	OFF	ON	ON					
	1 COIN 3 GAMES	ON	OFF	ON					
	2 COINS 1 GAME *	OFF*	OFF*	ON*					
	2 COINS 3 GAMES	ON	ON	OFF					
	3 COINS 1 GAME	OFF	ON	OFF					
	3 COINS 2 GAMES	ON	OFF	OFF					
	FREE PLAY	OFF	OFF	OFF					
ATTRACT SOUND	YES *				ON*				
	NO				OFF				
SETTING OF TICKET POINTS	NO TICKETS/ PRIZES					ON	ON	ON	
	2 POINTS, 1 TICKET					OFF	ON	ON	
	4 POINTS, 1 TICKET *					ON*	OFF*	ON*	
	6 POINTS, 1 TICKET					OFF	OFF	ON	
	8 POINTS, 1 TICKET					ON	ON	OFF	
	10 POINTS, 1 TICKET					OFF	ON	OFF	
	15 POINTS, 1 TICKET					ON	OFF	OFF	
	20 POINTS, 1 TICKET					OFF	OFF	OFF	
SWITCHING TICKET	TICKET *								ON*
	PRIZE								OFF

* INDICATES FACTORY SETTINGS OF DIP SWITCH.

Table 5-1, DIP SWITCH SETTINGS

TICKET PERCENTAGE THROW SETTINGS *							
If your price per play is...		50 CENTS			ONE QUARTER		
And your ticket value is...		\$0.005	\$0.01	\$0.02	\$0.005	\$0.01	\$0.02
Setting the "point per ticket" value at these settings (2... 10) will yield the pay-back percentages shown.	2	21.5%	43.0%		43.0%		
	4	10.7%	21.5%	43.0%	21.5%	43.0%	
	6	7.1%	14.3%	28.6%	14.3%	28.6%	43.0%
	8	5.4%	10.7%	21.5%	10.7%	21.5%	28.6%
	10		8.6%	17.2%	8.6%	17.2%	21.5%

* Based on NAMCO test results of an average of 43 points per game.

Table 5-2, TICKET PERCENTAGE THROW SETTINGS

5-4-2 Difficulty Setting

There are no DIP Switch settings for difficulty as CRACKY CRAB™ has a unique **Automatic Difficulty Selection** feature built-in. As the game is played, it senses the elapsed time it takes a player to hit each crab, and adjusts the frequency and speed at which the next crab makes its “run”.

5-5 Changing Ticket Option Message Sign

1. Look at the message in the “Win Ticket” window on the acrylic display panel.

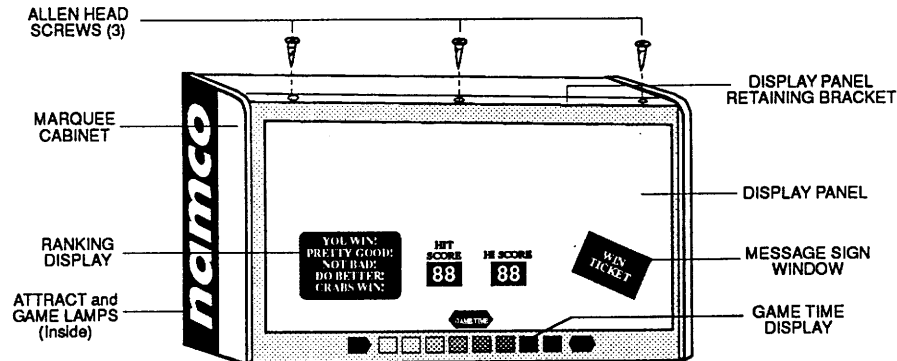


Illustration 5-3, DISPLAY PANEL

2. If you desire to change this window's message, please see the eight (8) optional signs in the convenience pack. You can replace the message sign with the one of your choice to suit your desired operation by doing the following:
 - a. Open the door on the back of the marquee cabinet.
 - b. Remove the two (2) phillips head screws securing the square wooden “plug” located on the back of the display panel on the lower left side.
 - c. Remove the plug, and stick the sign of your choice over the front surface. The signs have a special adhesive that allows easy removal if you wish to change signs later.
 - d. Return the “plug” to the window hole and replace the two screws.

5-6 Checking Coin Operation

1. Open Coin Door and check coin setting. Factory setting is 2 (coins) x 25¢ equals one game.
2. This setting is changeable by changing the dip switch located on the Game PC Board attached to the inside of the Marquee Cabinet back door, referring to either the label attached to the door (see Section 5-4), or this manual.

5-7 Checking Ticket Dispenser

1. Open ticket door and check for damage.
2. The ticket dispenser is a Deltronics Model DL-4-P-S. Included on the ticket door are a low ticket level indicator lamp, a ticket counter, and an adjustable low level switch on the ticket tray.

6. TESTING

6-1 Power Switch

Be sure to connect the power cord to an AC outlet and turn the power on. The power switch is located in the rear lower left side of the main cabinet.

6-2 Adjustment Switches

Open the upper coin door to gain access to the service panel.

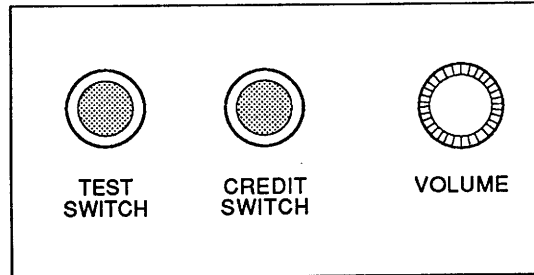


Illustration 6-1, SERVICE PANEL

Credit switch

This switch is used to increase the number of credits without activating the coin counter.

Test switch

Pressing this switch puts the game into the test mode, and also advances through the test mode functions. The test mode allows you to check that all game elements are functioning properly.

Volume control

Rotate the volume control to adjust speaker sound level for your location.

6-3 Test Mode

The test mode is started by pressing the test switch on the service panel. By subsequent pressing of the test switch, the various tests described below are performed:

6-3-1 Hit/Hi Score Light Emitting Diode Displays (1st press of the Test Switch)

This tests the LED lighting and sequencing of the two score displays. The LEDs in each of the two windows will continue to cycle until the Test Switch is pressed again.

- a. **HIT SCORE** – the number of times a valid hit on one of the crabs is recorded. When struck with the mallet, each crab will register only one hit per “run down the track” no matter how many times it is struck.
- b. **HI SCORE** – the highest score (crab hits) registered by any player since the last time power was turned on. Maximum is 99.

6-3-2 Game Time and Ranking (2nd press of Test Switch)

This test indexes through the timing lights from “start” to “end”, and the ranking lights from top to bottom.

- a. **GAME TIME** – a moving lighted display indicating relative time elapsed and remaining in game. Game time is set at the factory, and is not adjustable.
- b. **RANKING** – indicates the level of a player's success compared to a preset number of hits per rank level. The display should sequentially light each of the ranking messages from the top to the bottom...i.e. **YOU WIN!, PRETTY GOOD!, NOT BAD!, DO BETTER!, and CRABS WIN!**

NOTE: If any of the 14 volt lamps fail to light, check for and replace defective bulbs with new ones from the Operator Convenience Pack. 14 volt lamp and flourescent lamp replacement is described in Section 8-1.

6-3-3 Crab Drive Mechanism (3rd press of the Test Switch)

- a. **CRAB MOVEMENT** – checks that each of the four crabs makes a smooth and continuous run along its track from one “cave” to the other, and that each moves independently of the others. Crabs move from left to right or right to left, and photo cells show on timing board.
- b. **OPTICAL SENSOR OPERATION** – is checked by observing the Game Time display as each crab makes its run across its track. The start, midway and end lights will activate related to the crab's location on the track.
- c. **GRABBED CRAB ALARM** – is tested by grabbing a moving crab to attempt to stop its progress along the game play field track. This simulates what would happen if someone interferes with normal game operation. If functioning properly, the slip clutch of the drive mechanism will disengage, the crab character will stop, and a loud alarm will sound. When this happens, the game must be shut down and restarted by the operator to return it to ready-to-play status.

6-3-4 LED Test Mode (4th press of the Test Switch)

With this fourth press of the Test Switch, a red LED “2” appears in the Hit Score window and a red LED “1” appears in the Hi Score window.

6-3-5 Audio Test Game Play (5th press of the Test Switch)

This tests that the game play sound is functioning properly and at the desired volume.

6-3-6 Release Crab Locks (6th press of Test Switch)

This will release the crabs from the track while in the “home” position.

This is used when replacing damaged crabs as described in section 8-3.

6-3-7 Return to Play (7th and 8th presses of Test Switch)

Return to the play mode by pressing the Test Switch two more times.

7. HOW TO PLAY

- CRACKY CRAB™ is a single player, ticket dispensing game that allows players of all ages to hit as many crabs as possible within a given amount of time.
- After inserting the proper coin(s), the game will automatically start the introduction music.
- Once the music pauses, the crabs will emerge one by one from their caves and “run” across the playfield for the safety of the cave at the opposite end. The object of the game is for the player to hit each crab with the mallet before it gets to the other cave.
- When a crab is hit, a crab response is heard, and the HIT SCORE is increased. Each pass of a crab allows the player **only one** hit. Any additional hits are **not** counted and **will not** advance the player's score.
- Each hit registered causes the crabs to come out faster and more frequently. The game's **Automatic Difficulty Selection** feature reacts to the length of time between the crab emerging and when it is hit. This adjustment speeds up the crab's “running” speed to adjust to the player's skill level.
- During the game, tickets will be dispensed (operator adjustable) according to the number of crabs the player hits.
- The game play time is constant. The time remaining is displayed by lighted boxes in the Game Time display area. If a player hits forty (40) or more crabs within the given time, they receive a bonus round of game play.
- Once the game is over, the player's score will be rated as either CRABS WIN! (0-19 points), DO BETTER! (20-39), NOT BAD! (40-59), PRETTY GOOD! (60-79), or YOU WIN! (80-99).
- Whenever a player's HIT SCORE beats the existing HI SCORE, the new score will be displayed in the HI SCORE window and remain there until exceeded or the power is turned off.

8. MAINTENANCE/ TROUBLESHOOTING

BE SURE TO TURN THE POWER OFF BEFORE CONDUCTING ANY MAINTENANCE PROCEDURES.

8-1 Marquee 14 Volt Bulbs and Fluorescent Lamp Replacement

- 1) 14 Volt Bulbs
 - a) Replace 14 volt bulbs by opening the rear door of the Marquee Cabinet.
- 2) Fluorescent Lamps
 - a) Using the hex head wrench provided, remove the three (3) allen head screws holding the top bracket on the Marquee Cabinet in place. See Illustration 5-3.
 - b) Remove the marquee acrylic by sliding up.
 - c) Replace the fluorescent tubes.
 - d) Reverse these steps to reassemble.

8-2 Error Indication and Troubleshooting

- 1) When a crab shows an unusual movement, the machine automatically gives an error indication by displaying a blinking 2 digit number in the display windows of "HIT SCORE" and "HI SCORE" (same number for both windows). At the same time an alarm sounds for one minute. When the crab's movement is corrected, the machine resets and returns to the "power on" state.
- 2) The same error indication and alarm are activated in the event that the Coin Switch remains pressed down. See table below for error indications, their symptoms and suggested corrections.

ERROR INDICATION	DESCRIPTION of FAILURE	TROUBLESHOOTING
00	Coin Switch remains pressed down.	1. Remove the cause of being pressed down. 2. Adjustment and replacement.
1□*	With power supply on, crabs cannot move/return or cannot be detected as returned.	1. Remove the cause preventing crab movement. 2. Adjust or replace sensor and/or motor. 3. Adjust or replace Crab Locks.
2□*	During a game or in a testing mode, crabs cannot move or cannot be detected as returned.	
<p>* The squares in the table represent the number of the crab in trouble... i.e. 1, 2, 3, 4 from the top. In case multiple crabs are in trouble, the machine gives error indication one by one.</p>		

Table 8-1, ERROR INDICATION

8-3 Guard PCB Assembly Replacement

BE SURE TO TURN THE POWER OFF BEFORE CONNECTING GUARD ASSEMBLY

If one of the four drive assemblies is out of order, the game can be made operational with the remaining playfields available by using the Guard PCB Assembly provided in the Convenience Pack. Install the PCB Guard Assembly as follows:

- 1) Insure that the game power is off.
- 2) Open the back door of the Main Cabinet and check the non functioning drive assembly for any disconnections, looseness, or mechanical failure.
- 3) If no obvious trouble is detected, remove the connector from the non functioning drive assembly and connect the Guard Assembly in its place. Refer to table below for proper connections.

BAD DRIVE ASSEMBLY	CONNECTOR to be REMOVED	CONNECTOR to be CONNECTED to GUARD ASSY.
Drive Assy. A	4P/6P/9P Connectors (J12/J13/J14)	4P/9P Connectors (J17/J18)
Drive Assy. B	4P/6P/9P Connectors (J16/J17/J18)	4P/9P Connectors (J18/J14)
Drive Assy. C	4P/6P/9P Connectors (J20/J21/J22)	4P/9P Connectors (J25/J26)
Drive Assy. D	4P/6P/9P Connectors (J24/J25/J26)	4P/9P Connectors (J25/J26)

See Table 8-3 regarding the J numbers of the connectors to be removed.

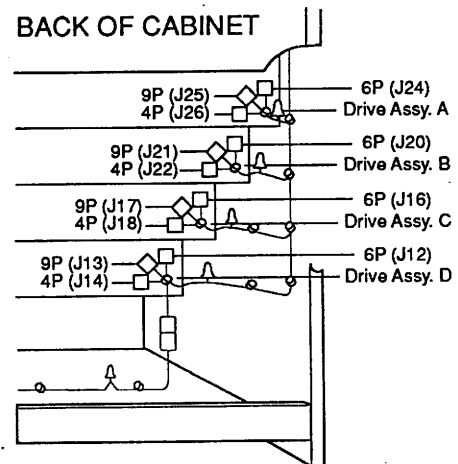


Table 8-2, DRIVE ASSEMBLY CONNECTIONS

- 4) Turn power back on.
 - a) If **no error indication** (Section 8-2) is given when power is turned back on, the game is ready for continued play with the remaining drive assemblies.
 - b) If **error indication** is still given after properly connecting the Guard Assembly, contact your distributor, or Namco Technical Service.

NOTE: In the case of a non functioning Drive Assembly to which a Guard Assembly has been attached, the Hit Sensor, Right Limit, Left Limit and Center Sensor all remain active. Accordingly, during game play, a hitting sound is generated even if crabs are not hit, and points are scored.

- 5) Since the Guard Assembly is for temporary use only as an alternative to a non functioning drive, you should have the "bad" drive repaired or replaced as soon as possible for restoration of normal game play.
- 6) Keep the Guard Assembly connected and remove and return the non functioning Drive Assembly to your distributor for repair or replacement. See section 8-4 (following) for Drive Assembly removal procedure.

8-4 Drive Assembly Replacement

BE SURE TO TURN THE POWER OFF BEFORE REMOVING DRIVE ASSEMBLY

To remove a Drive Assembly, follow this procedure:

- 1) Insure that the game power is off.
- 2) Open the back door of the main cabinet. Referring to Illustration 8-1, disconnect connectors 4P, 6P, and 9P, and one screw from the Drive Assembly to be removed, and remove the harness from the two (2) couching clips.

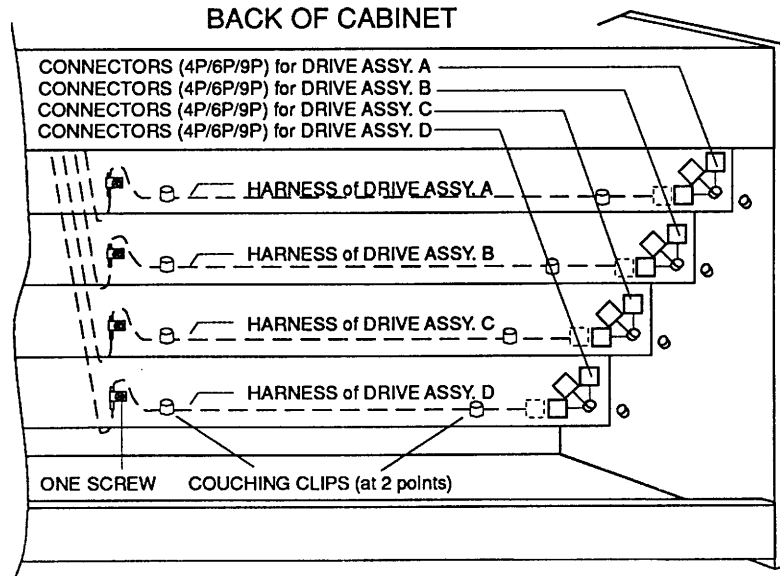


Illustration 8-1, DRIVE ASSEMBLY HARNESS

- 3) With the 1/8" allen wrench provided, remove the eighteen (18) screws holding the two side covers and one center cover. (See Illustration 8-2)

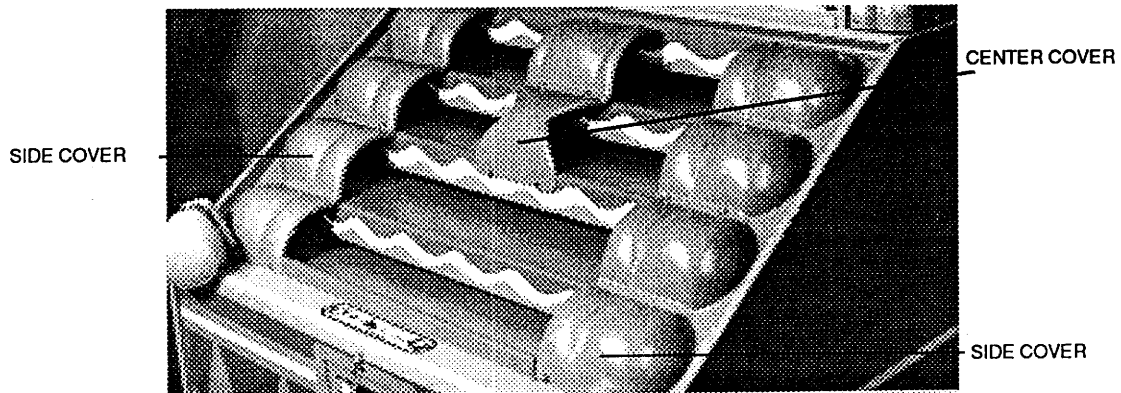


Illustration 8-2, GAME PLAYFIELD COVERS

- 4) Move Crab Character Assembly of the Drive Assembly to be removed to either the right or left end of the Drive Assembly. Remove the eight (8) hex bolts (M6 x 40) securing the appropriate two fields (bottom and back) indicated. To remove Drive Assembly 1 (on the bottom), remove only one field (D). See Table 8-3, and Illustrations 8-3, 8-4, and 8-5.

DRIVE ASSY. to be REMOVED	FRONT of CABINET	BACK of CABINET
Drive Assy. A	Remove Fields (A) and (B)	Remove Connectors (4P/6P/9P) and one screw.
Drive Assy. B	Remove Fields (B) and (C)	Remove Connectors (4P/6P/9P) and one screw.
Drive Assy. C	Remove Fields (C) and (D)	Remove Connectors (4P/6P/9P) and one screw.
Drive Assy. D	Remove Fields (D) and Cushion Base (L)	Remove Connectors (4P/6P/9P) and one screw.

See Table 8-2 regarding which Connectors are to be removed.

Table 8-3, DRIVE ASSYS., FIELDS, and CONNECTIONS

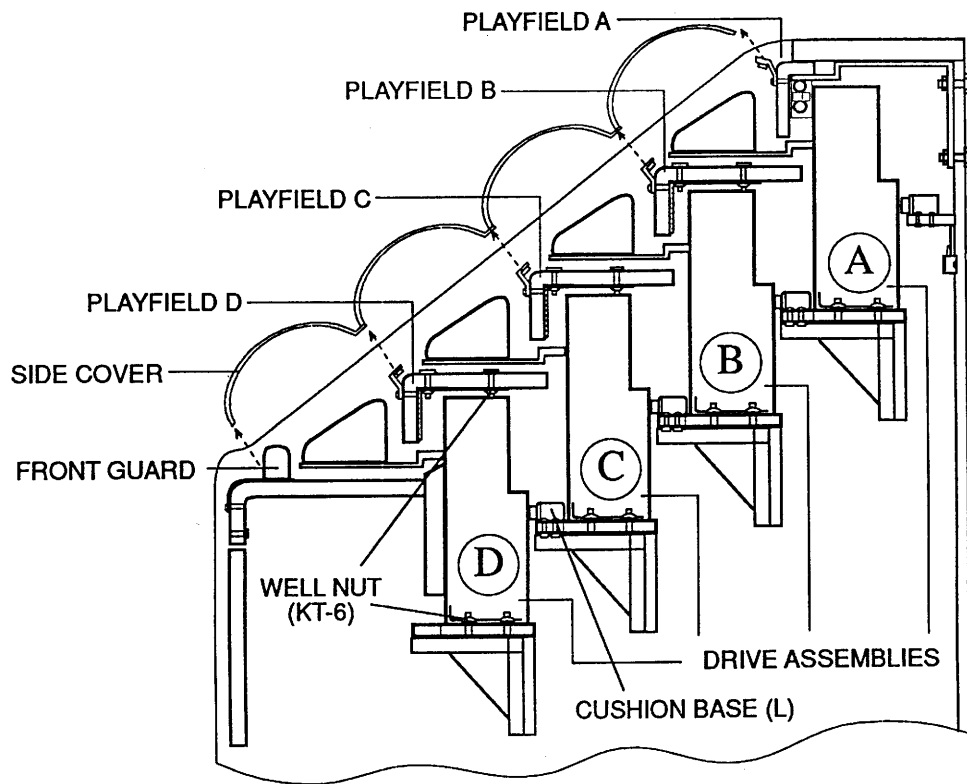


Illustration 8-3, SIDE CUTAWAY VIEW OF GAME

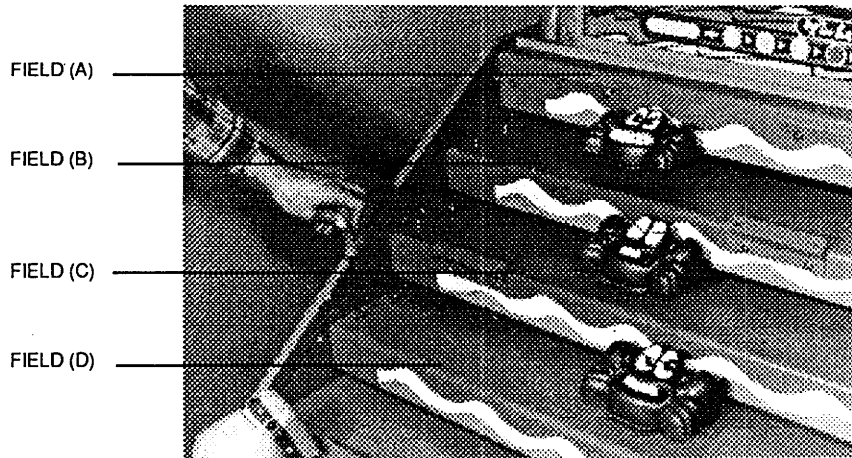


Illustration 8-4, PLAYFIELDS

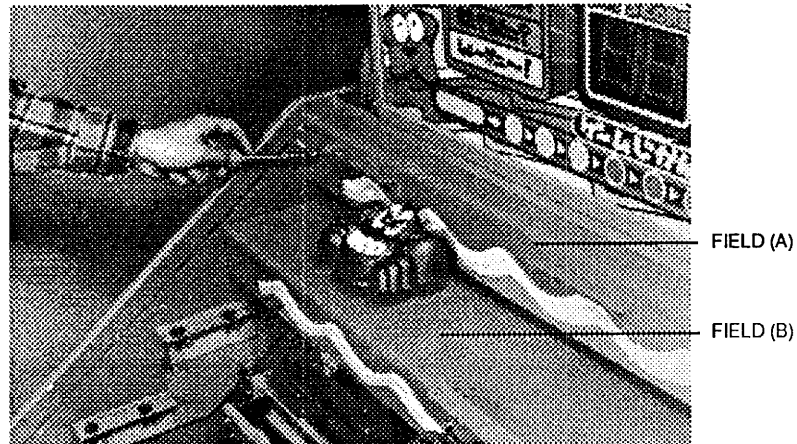


Illustration 8-5, REMOVING PLAYFIELDS

- 5) To remove Field A, just pull forward. To remove Fields B, C and D, lift up slightly then pull forward. See Illustrations 8-6 and 8-7.

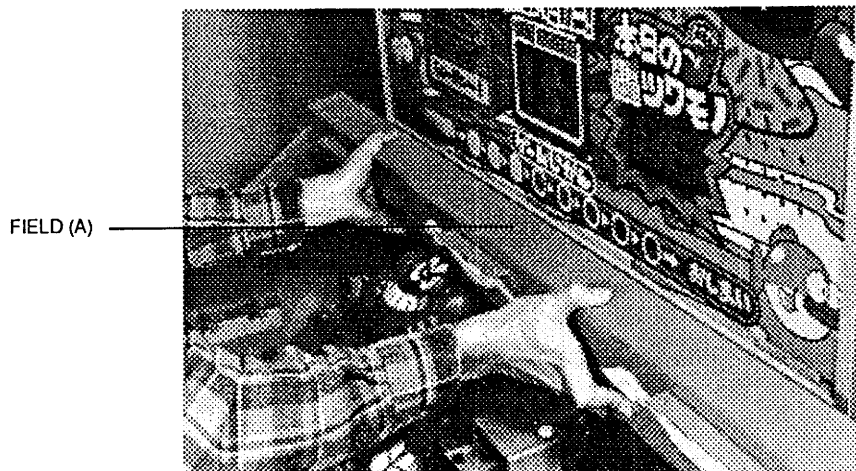


Illustration 8-6, REMOVING PLAYFIELD "A"

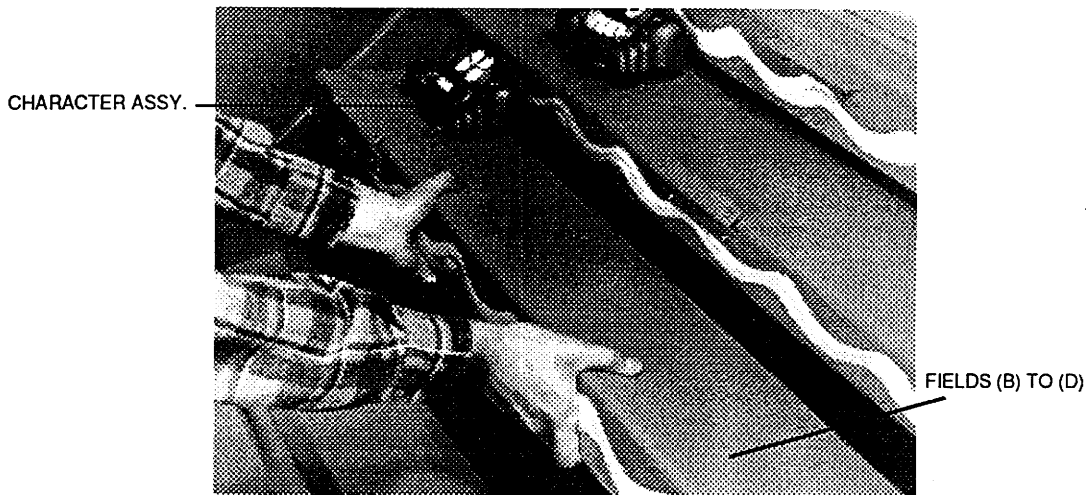


Illustration 8-7, REMOVING PLAYFIELDS "B", "C" and "D"

- 6) In the event that Crab Character Assembly associated with the Drive Assembly to be removed has been placed on the left end of the Drive Assembly, push the solenoid hook down and move Crab to the far right end of the Drive Assembly, and lock it there. See Illustration 8-8.

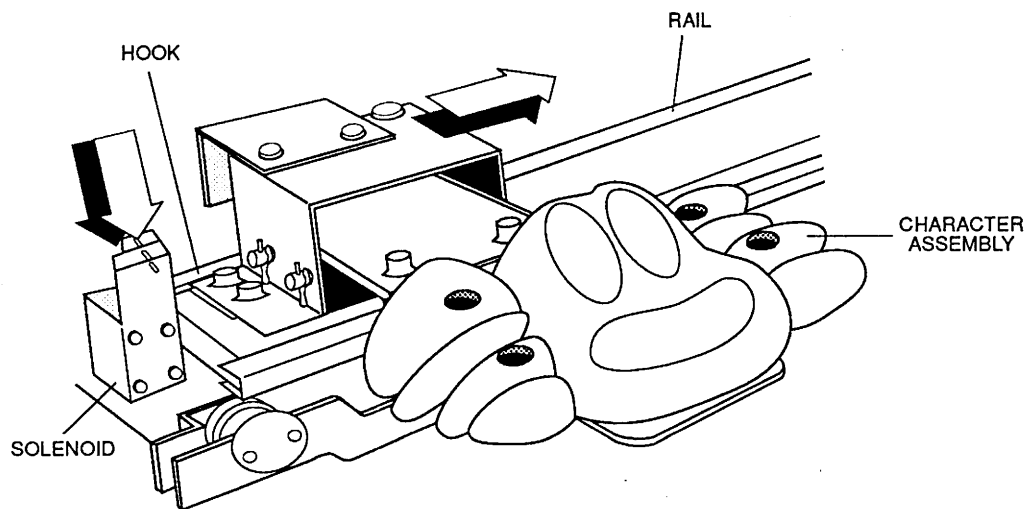


Illustration 8-8, CRAB CHARACTER ASSEMBLY

- 7) Remove the four (4) hex head bolts (M6 x 25) securing the Drive Assembly to the Cabinet. Remove it by pulling it out with the left side (where motor is located) lifted up. For Drive Assembly 1 (very bottom) only, the cushion base should be removed first.

CAUTION: Be careful that Drive Assembly Harness is not pulled loose or out when lifting the Drive Assembly out.

CUSHION BASE

HEX BOLT, M6 X 25,
WELL NUT (KT-6)

DRIVE ASSY.

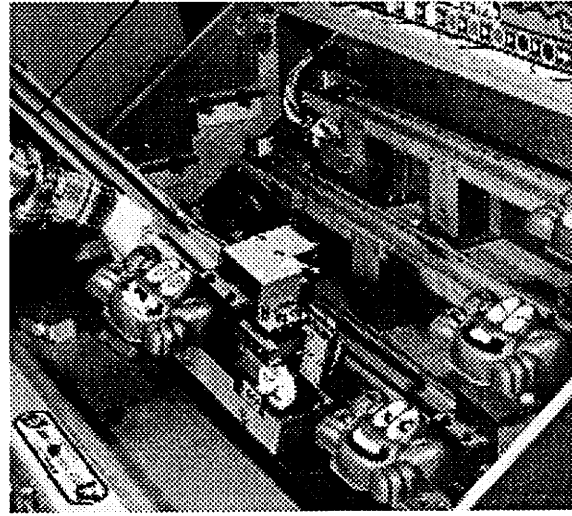
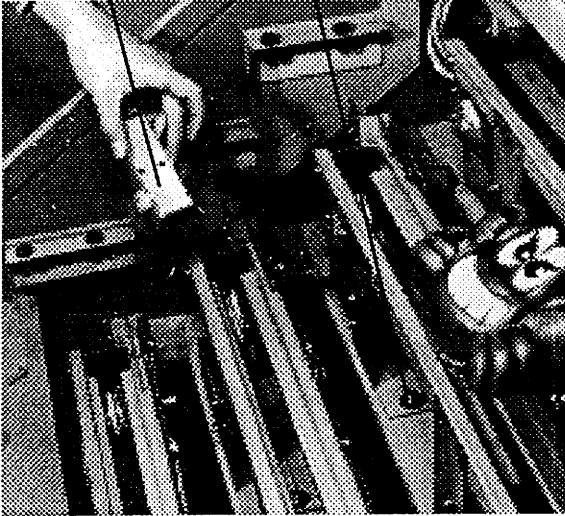


Illustration 8-9,
CUSHION BASE REMOVAL

Illustration 8-10,
DRIVE ASSEMBLY REMOVAL

8-5 Delrin Bearing Replacement

**BE SURE TO TURN THE POWER OFF
BEFORE REPLACING THE DELRIN BEARING**

To remove a Delrin Bearing, follow this procedure:

- 1) Insure that the game power is off.
- 2) Remove the Drive Assembly per procedure detailed in Section 8-4.
- 3) Remove four (4) cross-recessed bolts (M6 x 25), and remove Base Bracket from Roller Bracket. See Illustration 8-11.

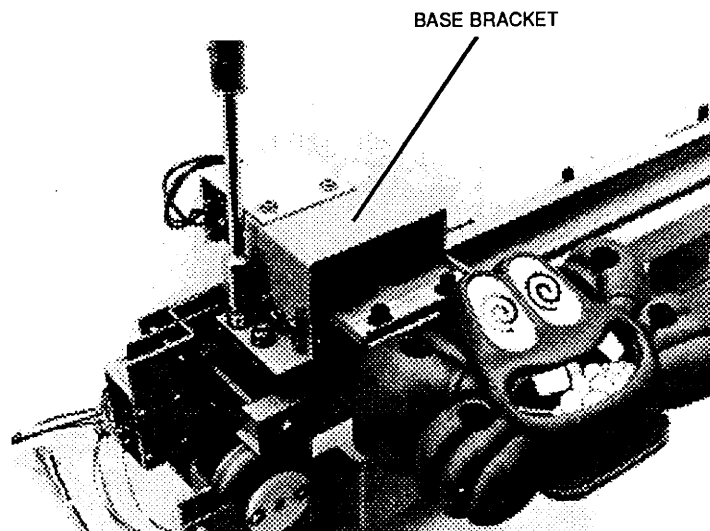


Illustration 8-11, BASE BRACKET

- 4) Remove two (2) cup screws [M] (M5 x 8), and then remove Hook Base [B] – at the opposite of the motor – from the rail. See Illustration 8–12.

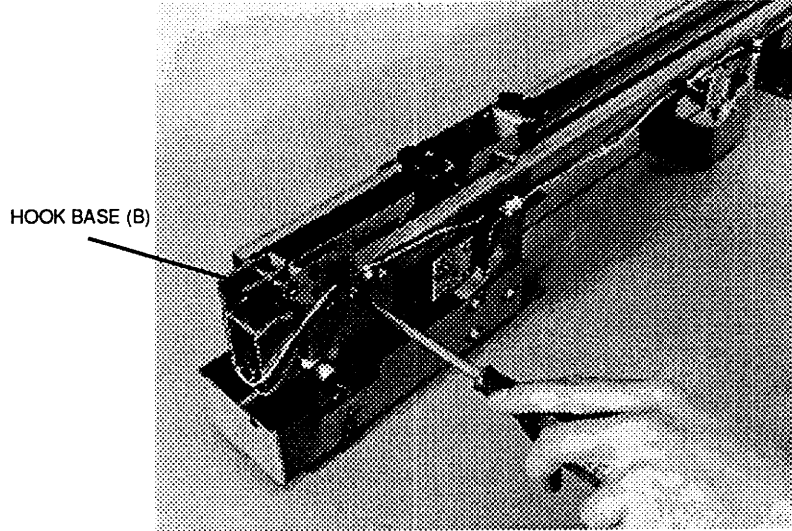
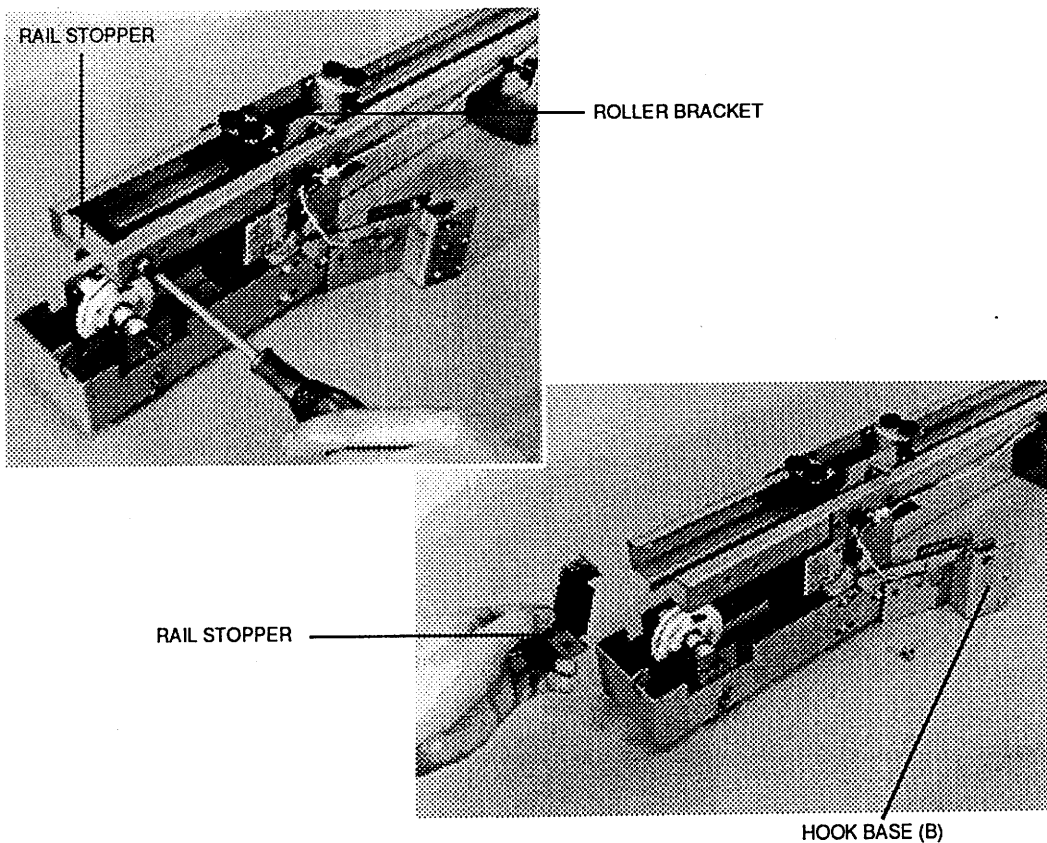


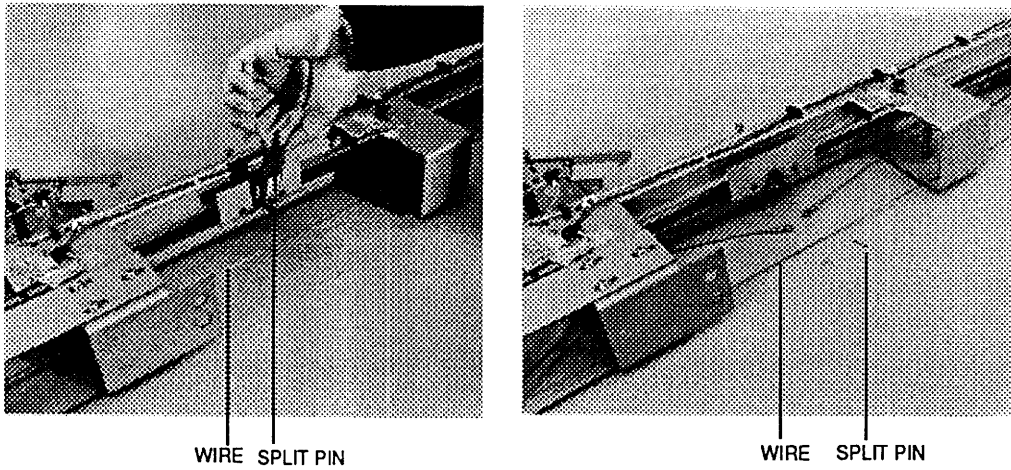
Illustration 8–12, HOOK BASE

- 5) Remove two (2) cup screws [M] (M5 x 14) from the side where the Hook Base [B] – at the opposite side of the motor – was just removed, and remove Rail Stopper. See Illustrations 8–13 and 8–14.



Illustrations 8–13 and 8–14, RAIL STOPPER

- 6) Pull out split pin (1.6 x 12) from the bottom of the Roller Bracket, and remove wire. See Illustrations 8-15 and 8-16.



Illustrations 8-15 and 8-16, SPLIT PIN

- 7) Pull out Roller Bracket from Rail and remove the Delrin Bearing to be replaced with a new one using a spanner (opposite side: 10mm) and a phillips-head screwdriver. See Illustrations 8-17, 8-18, and 8-19.

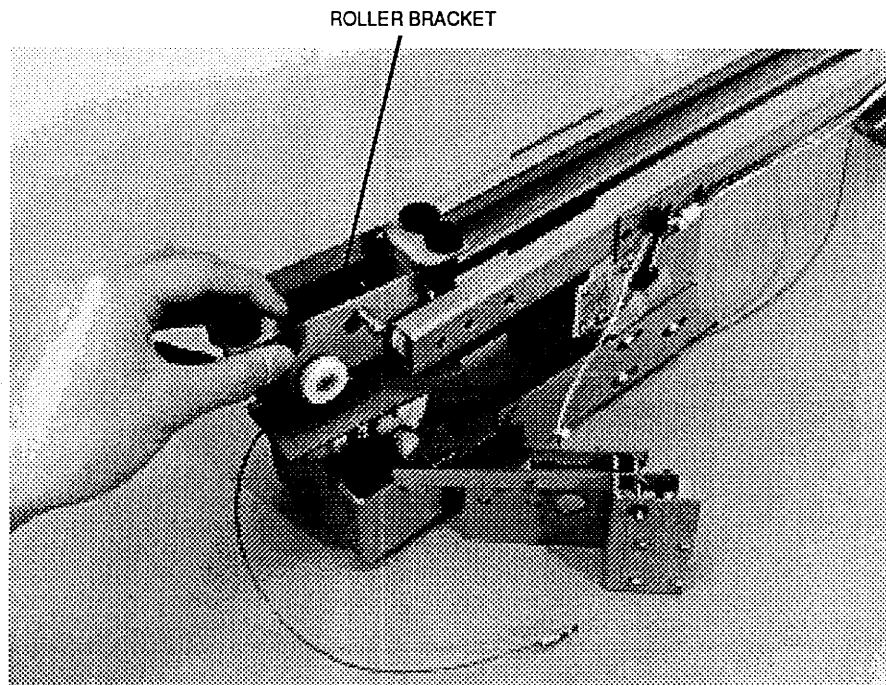
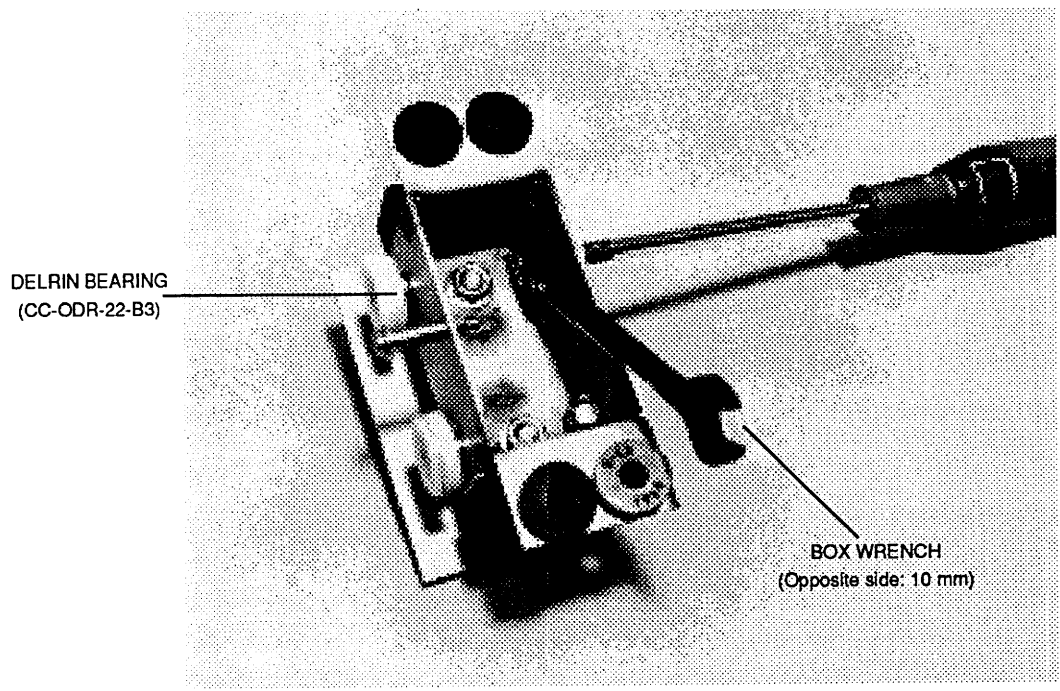


Illustration 8-17, ROLLER BRACKET



Illustrations 8-18, DELRIN BEARING REMOVAL

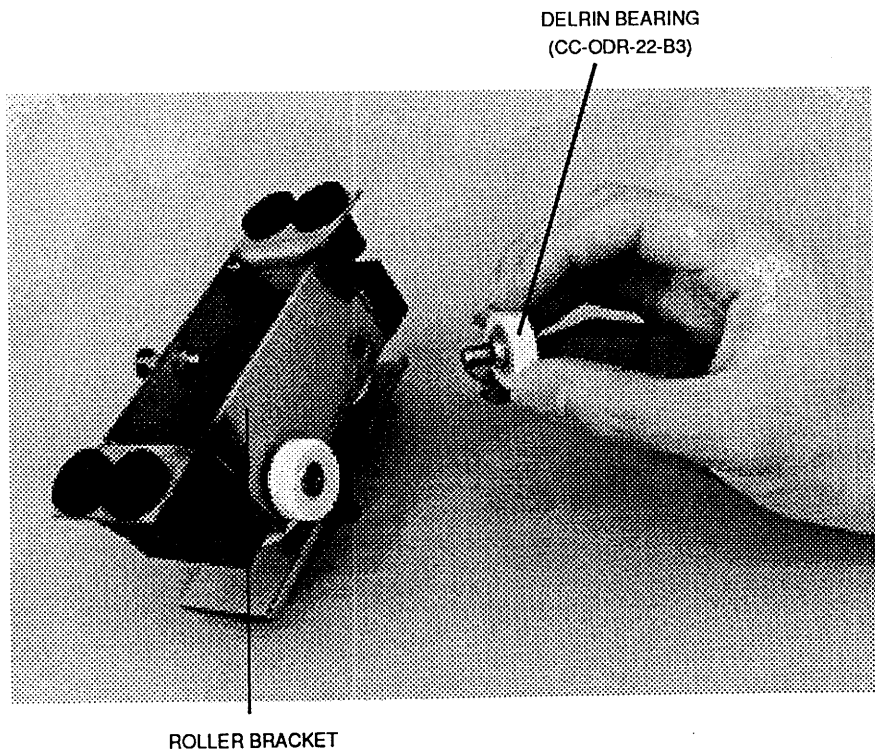


Illustration 8-19, DELRIN BEARING/ROLLER BRACKET

8-6 Crab Replacement

BE SURE TO TURN THE POWER OFF BEFORE REPLACING CRAB CHARACTER ASSEMBLY

To remove a Crab Character, follow this procedure:

- 1) Insure that the game power is off.
- 2) Remove the sixteen (16) hex socket button bolts (M5 x 14) and two (2) flush button bolts (M5 x 16) and remove two side covers and center cover. See Illustration 8-2.
- 3) Remove Playfield above Crab Character to be replaced. See Illustration 8-3.
- 4) Remove two (2) GT Cap Screws (M5 x 14) using the hex head wrench provided, and remove Crab Character Base. See Illustrations 8-20 and 8-21.

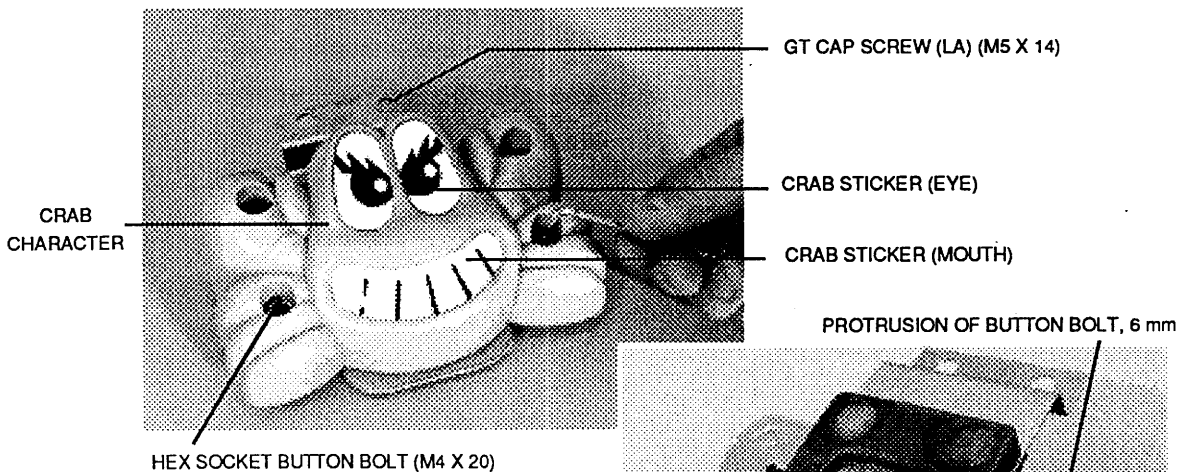


Illustration 8-20
CRAB CHARACTER ASSY. (Top)

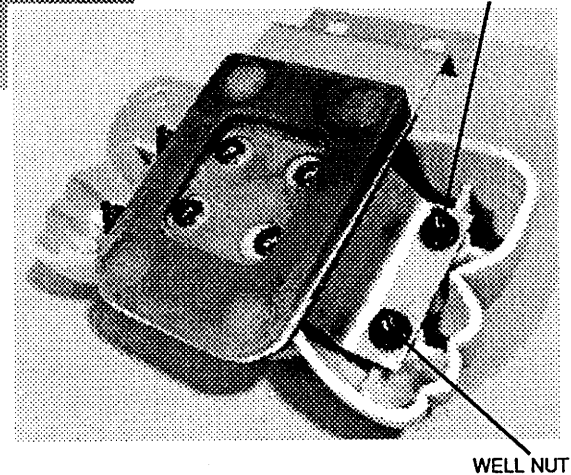


Illustration 8-21
CRAB CHARACTER ASSY. (bottom)

- 5) Remove four (4) hex flush bolts (M4 x 20) using the hex head wrench (diameter: 4mm), and replace Crab Character with a new one.

NOTE: In mounting the Crab Character after completion of replacement, clamp the four (4) hex socket button bolts (M4 x 20) so that the bulge of the well nut as seen from the back is approximately 12 mm, or the protrusion of the button bolt is approximately 6 mm long (clamping torque: 5 kg.cm).

8-7 Crab Base and Sub-base Replacement

BE SURE TO TURN THE POWER OFF BEFORE REPLACING CRAB BASE OR SUB-BASE

To replace a Crab Character Base or Sub-base, follow this procedure:

- 1) Insure that the game power is off.
- 2) Follow procedures 8-5-2) through 5) above for replacement of Crab Character.
- 3) Remove four (4) nylon nuts (M4). See Illustration 8-22.

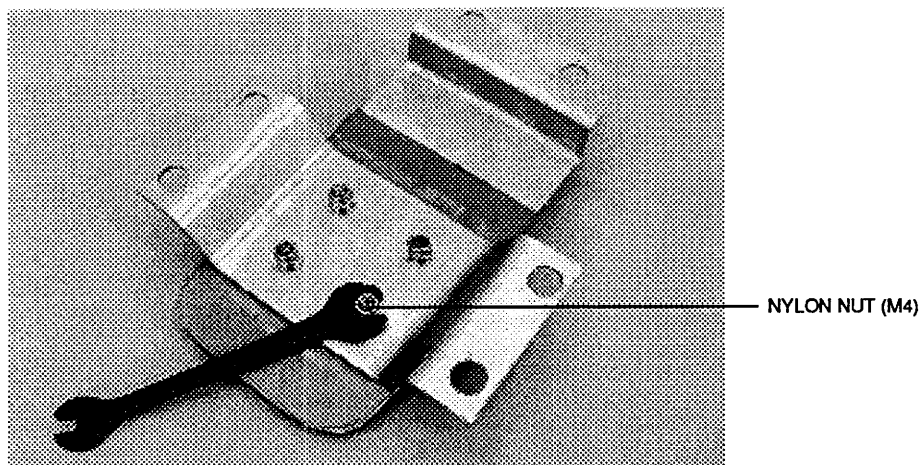
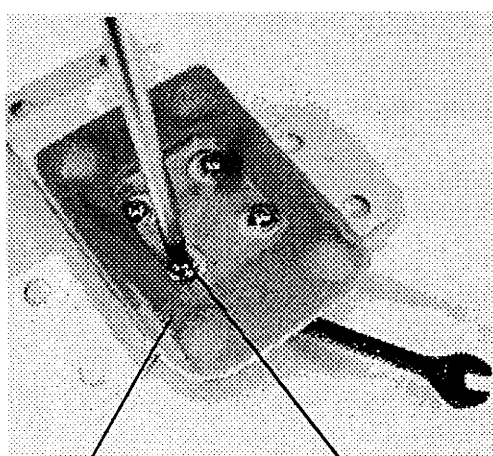


Illustration 8-22, CRAB CHARACTER BASE

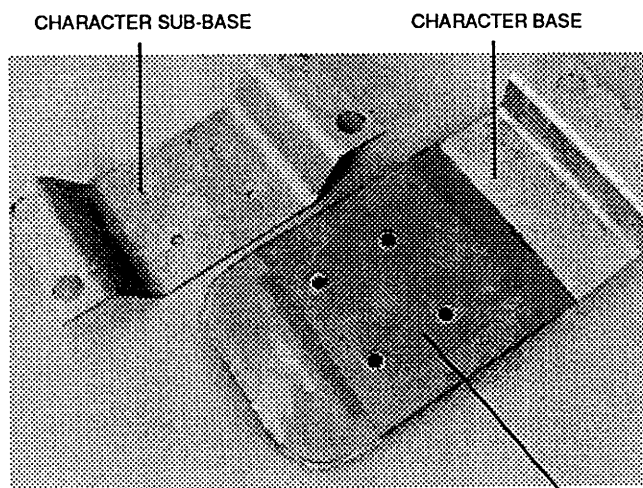
- 4) Replace Character Base and/or Sub-base with new ones. See Illustrations 8-23 and 8-24.

NOTE: In reattaching the Crab Character base with the two (2) GT Cap Screws (M5 x 14), be sure to apply Loc Tite 242.



CUSHION CUP SCREW (M)

Illustration 8-23
SUB-BASE REMOVAL



CHARACTER SUB-BASE CHARACTER BASE
CHARACTER CUSHION
Illustration 8-24
CHARACTER BASE,
SUB-BASE, and CUSHION

8-8 Fuse Replacement

BE SURE TO TURN THE POWER OFF BEFORE REPLACING FUSES

The Power Supply Board Assembly is equipped with UL listed fuses. In the event that the game is not activated when the power supply is turned on, turn off, and then turn on again.

If the game still remains inactivated, check the fuses on the Power Supply Board Assembly.

If one or more fuses are found to be blown, check the game for possible causes. If none are obvious, replace the blown fuse(s) with a new one(s), referring to the table below.

<u>FUSE</u>	<u>FUSE RATING</u>
F1	3A 125V, Fast Blow
F2	3A 125V, Slow Blow
F3	5A 125V, Fast Blow
F4	8A 125V, Fast Blow

8-9 Game PC Board Replacement

BE SURE TO TURN THE POWER OFF BEFORE REPLACING PC BOARDS

To replace the Game PC Board, following this procedure:

- 1) Insure that the game power is off.
- 2) Open the back door of the Marquee Cabinet and remove all the connectors on the Game PC Board.

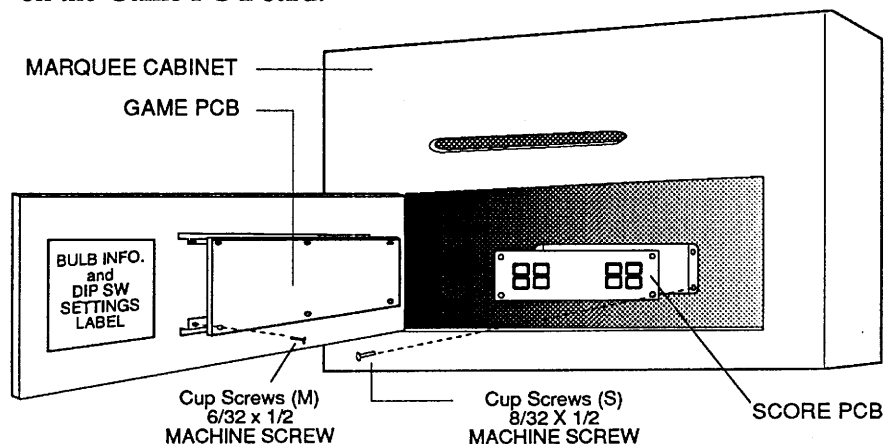


Illustration 8-25

- 3) Remove the six (6) screws securing the Game PCB to the door.
- 4) Replace PCB with a new one, and return the defective board to your distributor. **DO NOT ATTEMPT TO REPAIR IT ON SITE.**

8-10 Score PC Board Replacement

BE SURE TO TURN THE POWER OFF BEFORE REPLACING PC BOARDS

To replace the Score PC Board, following this procedure:

- 1) Insure that the game power is off.
- 2) Open the back door of the Marquee Cabinet and remove all the connectors on the Score PC Board. See Illustration 8-25.
- 3) Remove the four (4) screws securing the Score PCB to the cabinet.
- 4) Replace PCB with a new one, and return the defective board to your distributor. **DO NOT ATTEMPT TO REPAIR IT ON SITE.**

9. SERVICE CHECKS/ MATERIAL RETURNS

If you suspect the game may be malfunctioning, the following steps should be considered before you make a service request.

- (1) The supplied power should be between 110-120 Volts AC. However, when other equipment (air conditioners, multiple pinball games, air compressors, etc.) is connected to the same power source, the voltage may change beyond this range and cause game problems or improper operation. To guard against this, each CRACKY CRAB™ Cabinet should have its own dedicated power source.
 - (2) When the game does not work with the power turned on, turn the power off once and then back on. This may restart the game. If it still does not work, inspect the fuses.
 - (3) Check all wiring connections as malfunctions can be caused by loose connections.
 - (4) Foreign substances, including dust on the game PCB or optics, may cause malfunctions or improper operation. Check that the PCBs, optics, and drive assemblies are clean.
 - (5) When you make electrical checks, use the wiring diagrams for reference.
- * If the above suggestions are not applicable, or no improvement is observed, contact your distributor or the service office printed on the back cover of this manual.
 - * **DO NOT ATTEMPT TO REPAIR THE GAME PCB OR DRIVE ASSEMBLY YOURSELF.** Instead, please return to your distributor or directly to NAMCO AMERICA for any repairs. The PCB contains sensitive devices that could be destroyed even by the internal voltage of a multi-meter.
 - * When sending parts to be repaired, make sure to pack them firmly with a complete explanation of the problem. When sending PCBs, please package them in anti-static foam or bubble wrap, and pack them in cardboard boxes to protect against impact damage during shipment.

PARTS LIST

10. PARTS LIST

SHIPPING ASSEMBLY, CC01-00630-00		
ITEM	DESCRIPTION	PART NO.
1	Product Carton	CC60-00557-00
2	Cracky Crab Top Assy.	CC02-00558-00
3	Operator's Manual	CC45-00559-00
4	FCC Notice	VG46-00571-00
5	Serial Number Label	F246-00032-00
6	Cover, Serial	VG95-00500-00
7	UL Label	VG46-00065-00
8	Manual Poly Bag	VG60-00098-00
9	Game Poly Bag	VG60-00017-00
10	Shipping Label Namco	VG44-00572-00
11	FBI Label	VG46-00573-00

HARNES ASSEMBLY, CC05-00564-00		
ITEM	DESCRIPTION	PART NO.
1	Main Wire Harness	CC50-00567-00
2	Speaker Ext. Wire Harness	CC50-00568-00
3	Test Switch Brk. Wire Harness	CC50-00569-00
4	Coin Door Wire Harness	CC50-00570-00
5	Bulb	VG57-00565-00
6	Socket	VG57-00566-00
7	Spade Lug Ground	CC50-00632-00
8	Time PCB Ribbon Cable	CC50-00678-00
9	J206 Main Harness	CC50-00679-00
10	DC Power Harness	CC50-00680-00
11	DC Power Ext.	CC50-00681-00
12	Time Light Harness	CC50-00683-00
13	Ticket Harness	CC50-00684-00
14	Ticket Harness Ext.	CC50-00685-00
15	A/C Lamp Ext.	CC50-00686-00
16	A/C Lamp	CC50-00687-00
17	Rank Lights	CC50-00688-00
18	A/C Power Supply	CC50-00689-00
19	DC Power Supply	CC50-00690-00
20	Lamp Power Supply	CC50-00691-00
21	Power Cord	CC50-00692-00
22	On/Off Switch	CC50-00693-00

TOP ASSEMBLY, CC02-00558-00		
ITEM	DESCRIPTION	PART NO.
1	Cabinet Assembly	CC05-00560-00
2	O/U Coindoor Assy.	VG83-00045-00
3	Namco Electronics Kit	CC07-00561-00
4	Namco Mechanical Kit	CC06-00562-00
5	Graphics Kit Assembly	CC05-00563-00
6	Linear Power Supply Assy.	CC05-00634-00
7	Game Harness Assy.	CC05-00564-00
8	Mallet and Cable	VG09-00574-00
9	ABS Playfield Cover, Right	CC90-00344-01
10	ABS Playfield Cover, Left	CC90-00344-02
11	ABS Playfield Cover, Center	CC90-00344-03
12	Speaker 5"	VG54-00062-00
13	Round Speaker Grille, Red	CC10-00641-00
14	Plate Door Lock	VG10-00446-00
15	Bulk Fasteners	
16	Swivel Casters	VG24-00218-00
17	Light Bulb	VG57-00565-00
18	Flourescent Lamp Fixture	VG57-00058-00
19	Lamp (bulb) F15T8CW	VG57-00059-00
20	Bulb Base	VG57-00694-00

GRAPHICS KIT ASSEMBLY, CC05-00635-00		
ITEM	DESCRIPTION	PART NO.
1	Marquee Acrylic Panel	CC40-00531-00
2	Lower Side Decal	CC40-00534-00
3	Coindoor Panel Decal	CC40-00532-00
4	Playfield Decal	CC40-00536-00
5	Ticket Option Decal	CC40-00537-00
6	Ticket Door Decal	CC40-00539-00
7	Marquee Side Decal	CC40-00535-00

SERVICE PANEL ASSEMBLY, CC05-00578-00		
ITEM	DESCRIPTION	PART NO.
1	Metal Service Panel	CC10-00647-00
2	Volume Pot. 100 OHM	VG75-00103-00
3	Potentiometer Knob 1/8"	VG64-00104-00
4	Test Switch	VG53-00579-00
5	Credit Switch	VG53-00580-00
6	Service Panel Label	CC44-00581-00

10. PARTS LIST (cont.)

MAIN CABINET ASSEMBLY, CC05-00633-00		
ITEM	DESCRIPTION	PART NO.
1	Cabinet	CC63-00588-00
2	Color T Mold 25/32	VG90-00589-00
3	Lock 2255	VG83-00165-00
4	Top Cover Board Plate	CC10-00590-00
5	Marquee Box Support Brkt.	CC10-00591-00
6	Marquee Box Bottom Brkt.	CC10-00592-00
7	Marquee Top Trim Brkt.	CC10-00593-00
8	Marquee Bottom Trim Brkt.	CC10-00594-00
9	Top Left Rail Support Brkt.	CC10-00595-00
10	Top Right Rail Support Brkt.	CC10-00596-00
11	Middle Left Rail Support Brkt.	CC10-00597-00
12	Middle Right Rail Support Brkt.	CC10-00598-00
13	Right Cover Support Brkt.	CC10-00599-00
14	Left Cover Support Brkt.	CC10-00600-00
15	Marquee Bulb Bar	CC10-00601-00
16	Marquee Score Cage	CC10-00602-00
17	Marquee Vent	CC10-00603-00
18	Front Trim	CC10-00604-00
19	Marquee Hinge	CC10-00605-00
20	Top Crab Cover Holder Brkt.	CC10-00606-00
21	Middle Crab Cover Holder Brkt.	CC10-00607-00
22	Bottom Crab Cover Holder Brkt.	CC10-00608-00
23	Cover Guard Plate	CC10-00609-00
24	PCB Mounting Plate	CC10-00610-00
25	Caster Support	CC10-00611-00
26	Dip Switch Label	CC44-00636-00

TICKET DOOR ASSEMBLY, CC05-00639-00		
ITEM	DESCRIPTION	PART NO.
1	Coin Controls Ticket Door	CC82-00642-00
2	Deltronics Ticket Dispenser	VG82-00576-00
3	Ticket Counter	VG82-00577-00
4	Ticket Tray	VG10-00139-00
5	Ticket LED, amber	VG57-00646-00
6	Micro Switch, Ticket Low	VG53-00140-00

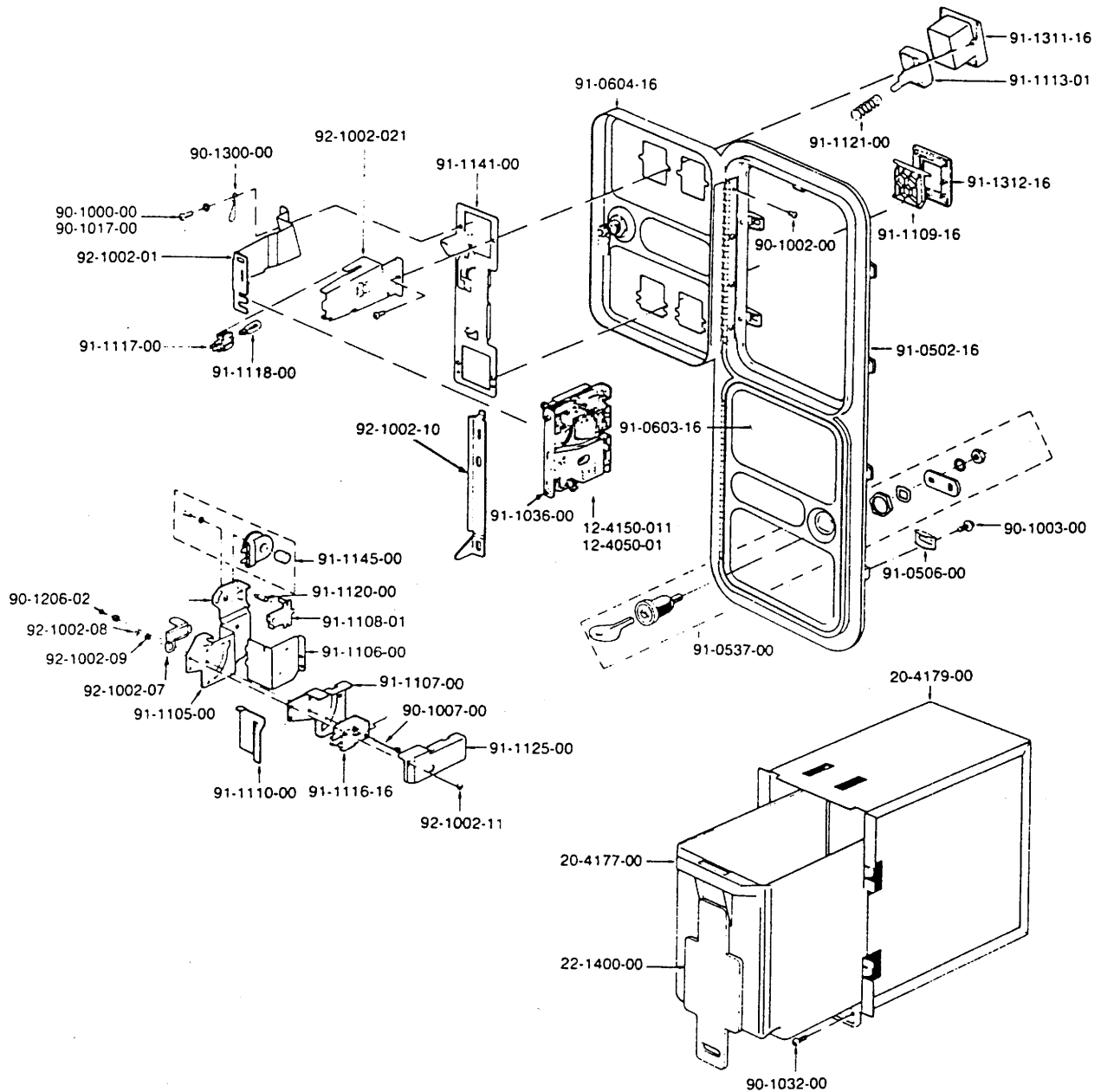
LINEAR POWER SUPPLY ASSEMBLY, CC05-00634-00		
ITEM	DESCRIPTION	PART NO.
1	Transformer	CC56-00612-00
2	CAP, 1100mf, 40V	VG76-00613-00
3	CAP, 4700mf, 25V	VG76-00614-00
4	CAP, 3300mf, 25V	VG76-00615-00
5	RES, 1/4 W, 4.7k ohms.	VG75-00616-00
6	RES, 1/4 W, 1.2k ohms.	VG75-00617-00
7	RES, 1/4 W, 560 ohms.	VG75-00618-00
8	Rectifier	VG77-00619-00
9	Term. Barrier Strip 6 place	VG67-00620-00
10	Term. Spade Strip 6 place	VG67-00621-00
11	Fuse, 3AF Fast, 8 amp	VG52-00622-00
12	Fuse, 3AF Fast, 5 amp	VG52-00623-00
13	Fuse, 2 amp Slow	VG52-00624-00
14	Fuse, 3 amp Slow	VG52-00625-00
15	CONN, 2 pin molex	VG67-00626-00
16	CONN, 12 pin molex	VG67-00627-00
17	Metal Brkt, Cap	VG10-00628-00
18	Fuse Block, 4 Place	VG52-00629-00

O/U COIN DOOR ASSEMBLY, CC83-00635-00		
ITEM	DESCRIPTION	PART NO.
1	Door, Coin No Encl. 12V	CC82-00575-00
2	Enclosure, Coin Housing	VG10-00465-00
3	Box, Plastic Cash	VG90-00466-00
4	Coin Counter	VG83-00166-00

NAMCO ELECTRONICS & MECH. KIT ASSY, CC03-00529-00		
ITEM	DESCRIPTION	PART NO.
1	Game PCB	CC03-00582-00
2	Score PCB	CC03-00583-00
3	Guard PCB	CC03-00584-00
4	Mechanical Drive Assy	CC04-00585-00
5	Isolation Rubber	CC04-00586-00
6	Well Nut, 4 mm	VG20-00587-00
7	Well Nut, 1/4 20	VG20-00675-00

10. PARTS LIST (cont.)

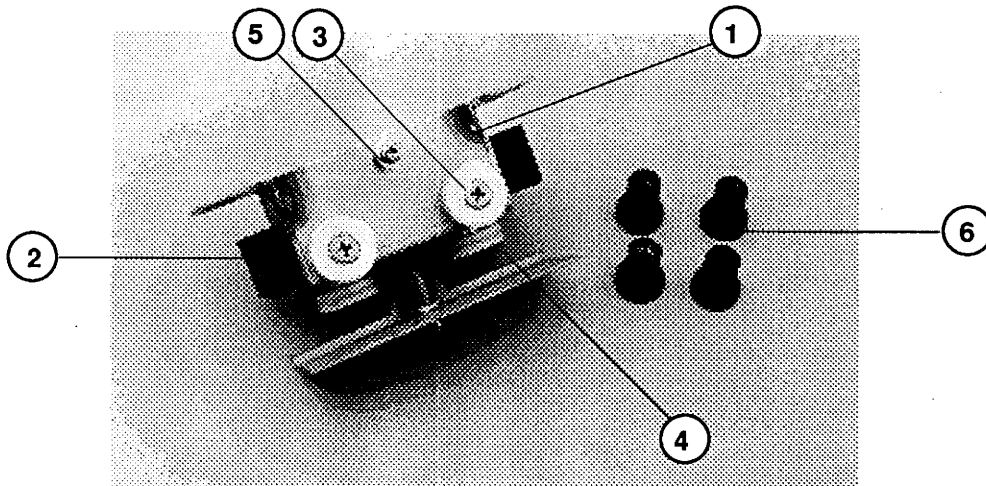
Coin Control Assembly



COIN CONTROLS COIN DOOR ASSEMBLY

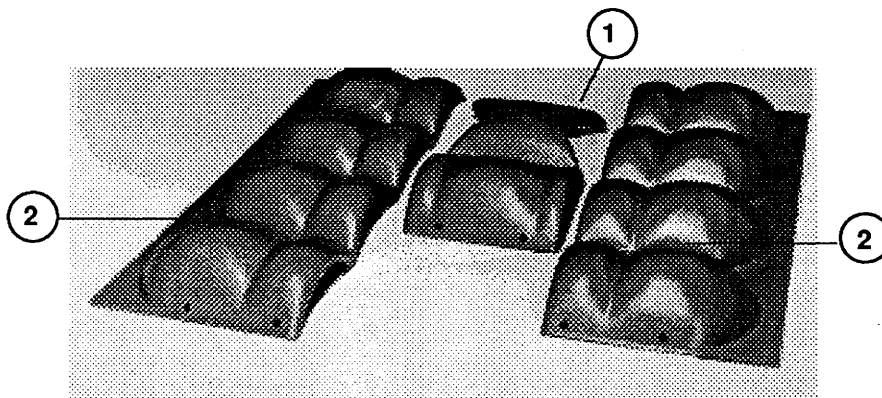
10. PARTS LIST (cont.)

ROLLER BRACKET ASSEMBLY



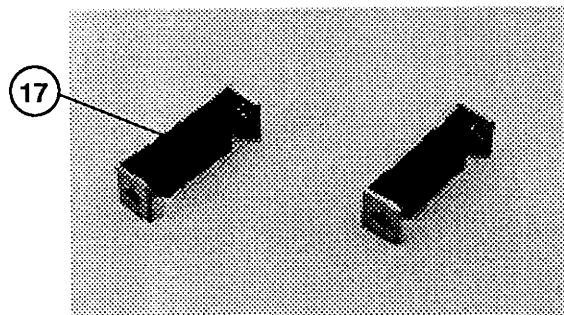
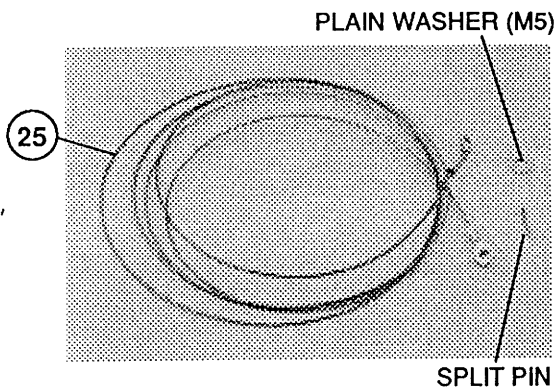
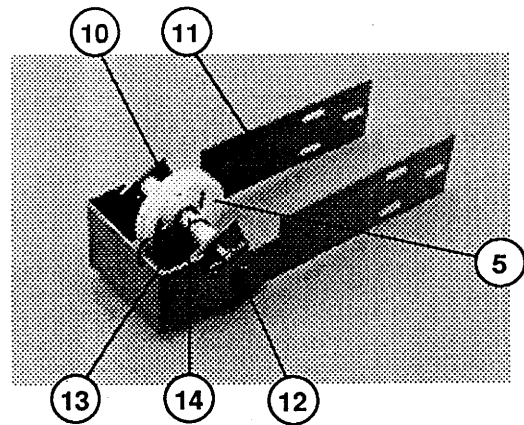
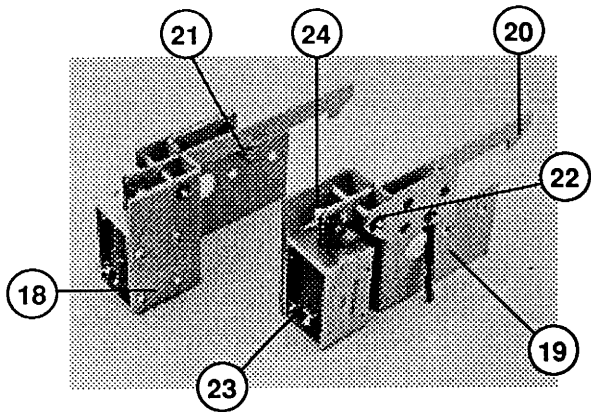
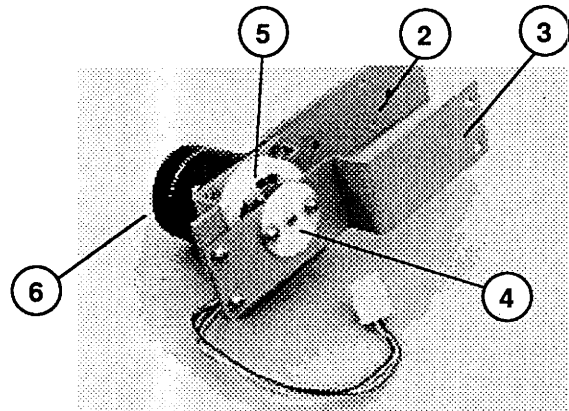
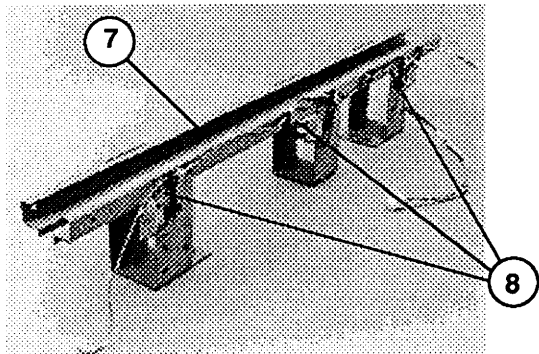
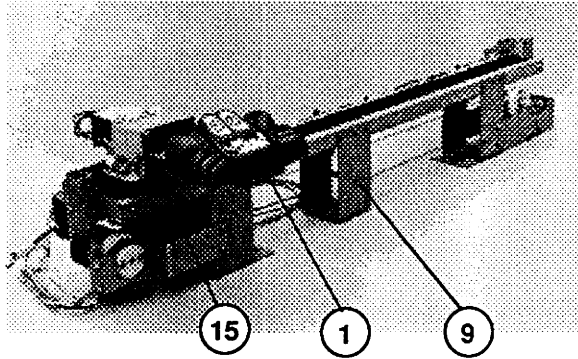
ROLLER BRACKET ASSEMBLY		
ITEM	DESCRIPTION	PART NO.
1	Roller Bracket	CC259-319
2	Stopper Cushion	CC259-335
3	Delrin Bearing, DR-22-B3	CC235-057
4	Delrin Bearing, IDS-22-B1.5	CC259-387
5	Spacer, $\varnothing 4 \times 15$ ZC	CC259-332
6	Well Nut, KT-6	CC235-065

COVERS



COVERS		
ITEM	DESCRIPTION	PART NO.
1	Center Cover	CC259-136
2	Side Cover (2)	CC259-138

10. PARTS LIST (cont.)
DRIVE ASSEMBLY

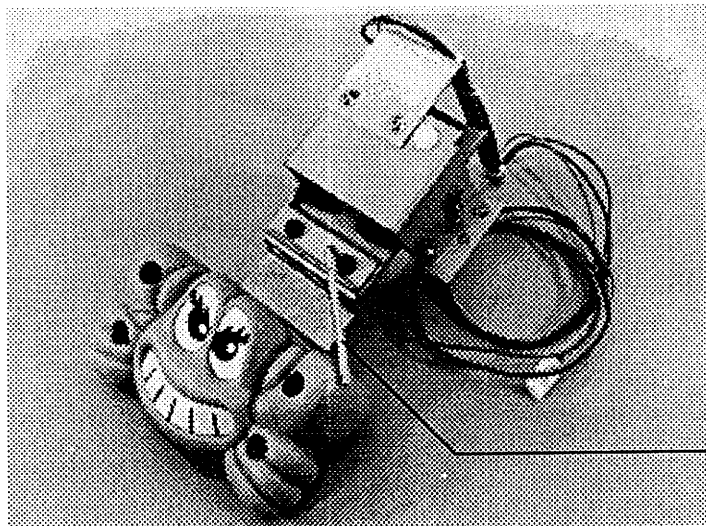
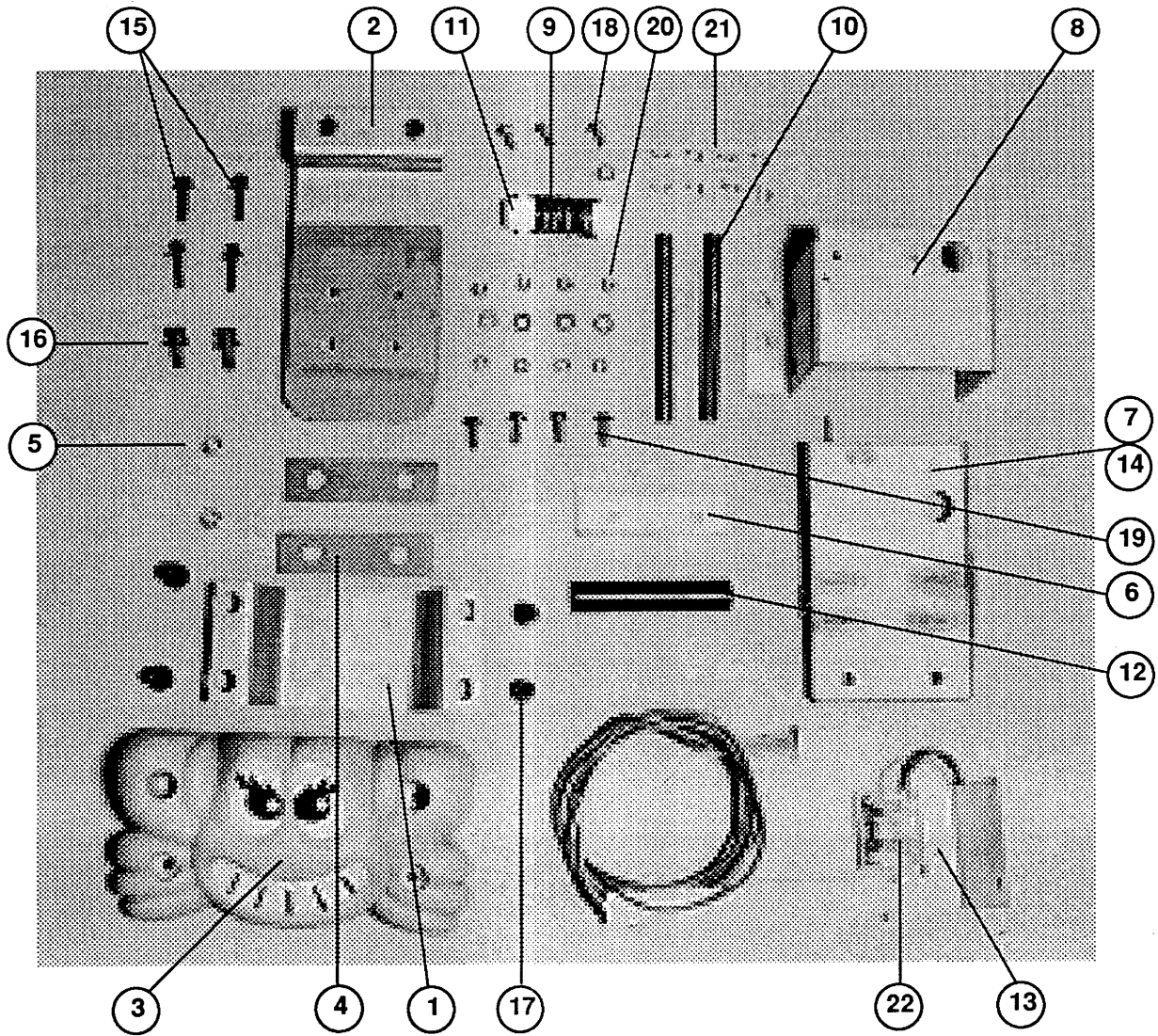


10. PARTS LIST (cont.)
DRIVE ASSEMBLY

DRIVE ASSEMBLY		
ITEM	DESCRIPTION	PART NO.
1	Crab Character Assy.	See Assy.
2	Motor Bracket	CC259-316
3	Sub Bracket	CC259-317
4	Shaft Guard	CC259-334
5	Pulley	CC259-331
6	Stepping Motor, PH266-01	CC005-100
7	Rail	CC259-312
8	Sensor PC Board	CC235-017
9	Spacer	CC259-332
10	Pulley Bracket	CC259-325
11	Hold Bracket	CC259-318
12	Shaft	CC259-329
13	Tension Spring	CC259-343
14	Frang Bearing, F688ZZS	CC259-381
15	Roller Bracket Assy.	See Assy.
16	Well Nut, KT-6	CC235-065
17	Rail Stopper, w/cushion	CC259-326
18	Hook Base (A)	CC259-320
19	Hook Base (B)	CC259-321
20	Hook	CC259-322
21	Hook Spring	CC259-342
22	Parallel Pin, w/push nut \varnothing 4x40	CC259-382
23	DC Solenoid, ST-1053E3	CC247-234
24	Nylon Nut , M3	CC259-383
25	Wire Rope	CC259-339

10. PARTS LIST (cont.)

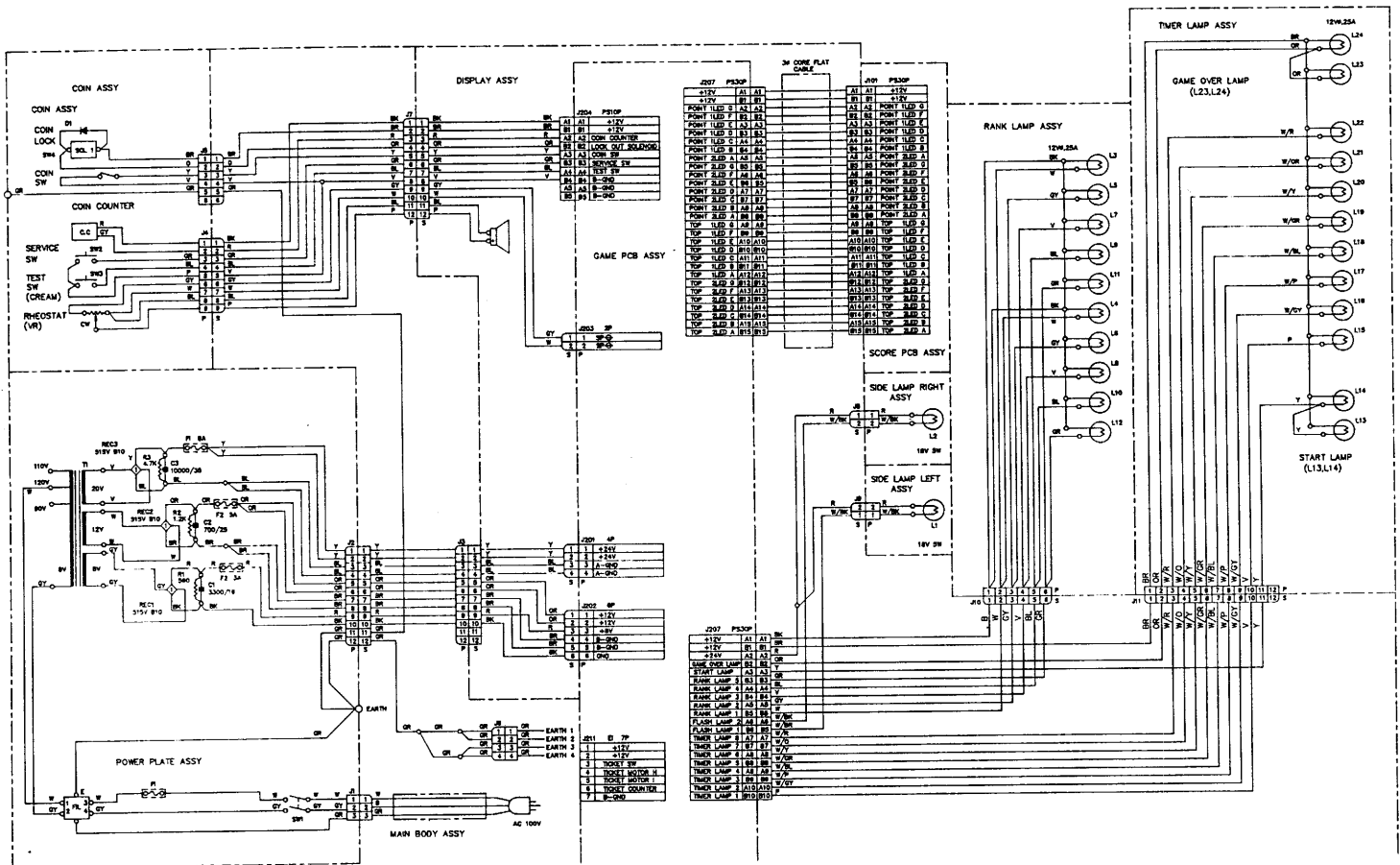
CRAB CHARACTER ASSEMBLY



HEX WRENCH
(DIAMETER 4MM)
[ACCESSORY]

10. PARTS LIST (cont.)**CRAB CHARACTER ASSEMBLY**

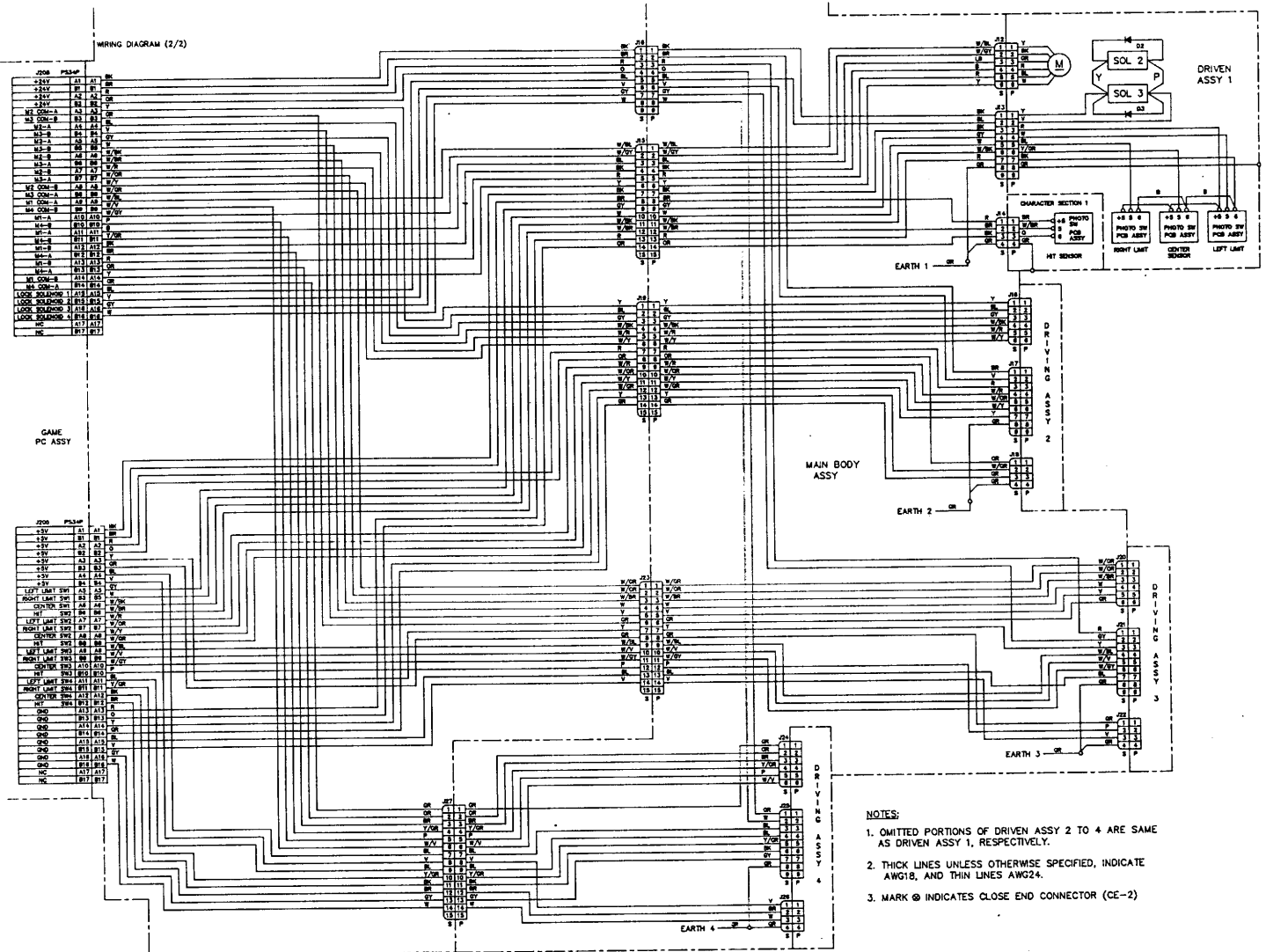
CRAB CHARACTER ASSEMBLY		
ITEM	DESCRIPTION	PART NO.
1	Sub Base	CC259-347
2	Character Base, w/cushion	CC259-388
3	Crab Character	CC259-311
4	Spacer Rubber	CC259-346
5	Rubber Collar	CC259-345
6	Washer Plate	CC259-323
7	Swing Base	CC259-314
8	Base Bracket	CC259-315
9	Character Spring	CC259-344
10	Shaft	———
11	Spring Collar	CC259-333
12	Stopper Rubber	CC259-338
13	Harness Guide	CC259-324
14	Frage Bush, 80F0810	CC231-128
15	Hex Socket Butt. Bolt, M4x20	———
16	GT Cap Screw, (LA) M5x14	CC259-386
17	Well Nut, KT-4	CC244-424
18	Cup Screw (S), M4x10	———
19	Cup Screw (M), M4x14	———
20	Nylon Nut, M4	CC259-384
21	Snap Pin, 8x27.7 ZC	CC259-385
22	Sensor PC Board	CC259-332



- NOTES:
1. THICK LINES UNLESS OTHERWISE SPECIFIED, INDICATE AWG18 AND THIN LINES AWG24.
 2. RESISTANCE VALUE IS ALL 1/4W AND APPLY CARBON.
 3. MARK ⊗ INDICATES CLOSED END CONNECTOR (CE-2).
 4. THE UNITS OF OHMS AND μ V ARE OMITTED.
 5. APPLY TINNING WIRES FOR POWER LINES ON TIMER LAMPS AND RANK LAMPS.

CRACKY CRAB™ — Wiring Harness Diagram

WIRING DIAGRAM (2/2)



- NOTES:
1. OMITTED PORTIONS OF DRIVEN ASSY 2 TO 4 ARE SHOWN AS DRIVEN ASSY 1, RESPECTIVELY.
 2. THICK LINES UNLESS OTHERWISE SPECIFIED, INDICATE AWG18, AND THIN LINES AWG24.
 3. MARK ⊗ INDICATES CLOSE END CONNECTOR (CE-2)

CRACKY CRAB™ – Wiring Harness Diagram

NOTES



Warranty

Seller warrants that its printed circuit boards and parts thereon are free from defects in material and workmanship under normal use and service for a period of ninety (90) days from the date of shipment. None of the Seller's other products or parts thereof are warranted.

If the products described in this manual fail to conform to this warranty, 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:

- (a) Seller is promptly notified in writing upon discovery by Buyer that said products are defective;
- (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, installation, or improper testing.

In no event shall Seller be liable for loss of profits, loss of use, incidental or consequential damages.

Except for any express warranty set forth in a written contract between Seller and Buyer which contract supersedes the terms herein, this warranty is expressed in lieu of all other warranties expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose, and of all other obligations or liabilities on the Seller's part, and it neither assumes nor authorizes any other person to assume for the Seller any other liabilities in connection with the sale of products by Seller.

Namco-America, Inc. distributors are independent, being privately owned and operated. In their judgement they may sell parts or accessories other than Namco-America, Inc. parts or accessories. Namco-America, Inc. cannot be responsible for the quality, suitability or safety of any non-Namco-America, Inc. part or any modification including labor which is performed by such distributor.

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