

# MIGHTY MINI



## **OWNERS AND SERVICE MANUAL** **INNOVATIVE CONCEPTS IN ENTERTAINMENT INC.**

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# INTRODUCTION

## GAME FEATURES

The new **MIGHTY MINI™** by I.C.E. was designed with the operator in mind. Reliability, low maintenance, available custom cabinetry, and all metal exterior construction are some of the most important design features to be added to the newest member of our merchandiser family.

The new **MIGHTY MINI™** game features a robotic moveable dinosaur. The dinosaur is fabricated from aircraft grade aluminum. A tough, durable long lasting powder coat finish is applied to the dinosaur for an attractive finish.

A revolving "Prize Tub" makes retrieving a certain prize more challenging to the player. The revolving "Prize Tub" is made from .25 thick ABS plastic material that is very durable. As an extra feature, a prize tub insert is included with the game. For small prizes, the insert should be used so that a large quantity of prizes will not be required to fill up the tub. For larger prizes, the insert may be removed.

To keep things easy for the operator, all of our best features have been carried over from our other designs. Things such as an all-metal exterior, powdered epoxy paint, tempered glass windows, and full-featured programming are standards you've come to expect from I.C.E. products.

The **MIGHTY MINI™** uses state of the art electronics with a new drive circuit for all motors. In our new design, even direct short circuits won't damage the motor or coil drivers. The protection is built into the drivers themselves!

This merchandiser has been made to give you a merchandiser that is competitive with other smaller merchandisers of its size, but it has been engineered to leave the competition behind. Every aspect of small merchandiser design has been scrutinized and improved to bring it up to the standards necessary to compete in today's market.

We hope you thoroughly enjoy your ownership experience with your new **MIGHTY MINI™** merchandiser. If you have any questions or comments, please contact our service department at: (716) 759-0360

## GAME PLAY

When the game is powered up for the first time, the dinosaur will rise up out of the prize tub. The dinosaur will then move from side to side and continue to do so. The Prize Tub will also begin to spin. The game is now in attract mode.

As coins or bills are inserted into the **MIGHTY MINI™**, a jungle sound is heard. When sufficient funds have been inserted, game play may begin.

As the Prize Tub is turning, the dinosaur may be dropped at any time, by pressing the "Drop Dino" button on the control panel. (Hint: making sure that the dinosaur's mouth is open before dropping will make it easier to retrieve a prize)

After the dinosaur has dropped into the prize tub, the lever on the side of the control panel may be pushed or pulled to "grab" a prize. After a few seconds, the dinosaur will then begin to rise out of the prize tub with or without a prize.

The dinosaur will go "home" (over prize chute) in whatever direction is most sufficient. The dinosaur will stop over the prize chute for a predetermined length of time. Pull the lever to open the jaws and drop the prize. If there is no prize in the dinosaur's jaws, there is no need to open or close the jaws. After a few seconds the dinosaur will begin to move from side to side again, waiting for the next game to be played.

# GAME SET-UP / TESTING

## SAFETY PRECAUTIONS

IMPORTANT: FAILURE TO FOLLOW THESE DIRECTIONS CLOSELY COULD CAUSE SERIOUS DAMAGE TO YOUR GAME.

WARNING: WHEN INSTALLING THIS GAME, A 3-PRONG GROUNDED RECEPTACLE MUST BE USED. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY TO YOURSELF OR OTHERS. FAILURE TO USE A GROUNDED RECEPTACLE COULD ALSO CAUSE IMPROPER GAME OPERATION, OR DAMAGE TO THE ELECTRONICS.

DO NOT DEFEAT OR REMOVE THE GROUNDING PRONG ON THE POWER CORD FOR THE SAME REASONS AS GIVEN ABOVE. USING AN IMPROPERLY GROUNDED GAME COULD VOID YOUR WARRANTY.

PAY SPECIAL ATTENTION TO THE SET UP SECTION BELOW, REGARDING THE VOLTAGE SETTINGS.

## GAME SET-UP

BEFORE PLUGGING THE GAME IN, OR TURNING IT ON, BE SURE THE GAME HAS BEEN SET TO THE PROPER VOLTAGE. YOUR GAME SHOULD COME PRE-SET FROM THE FACTORY TO THE CORRECT VOLTAGE, HOWEVER IT IS A GOOD IDEA TO CHECK THE A.C. WALL RECEPTACLE VOLTAGE BEFORE PLUGGING THE GAME IN.

The Game comes with 4 available voltage settings as described below. These settings should be used to provide power in the correct range to the game without over or under powering it.

### **NOTE:**

**THIS GAME IS INTENDED FOR INDOOR USE ONLY.**

**ON THE MAIN PC BOARD COVER: WARNING: SHOCK HAZARD - DO NOT OPEN. REFER SERVICING TO SERVICE PERSONNEL.**

**THIS GAME IS NOT TO BE INSTALLED WHERE A WATER JET COULD BE USED.**

<u>POWER RANGE</u>	<u>VOLTAGE SETTING</u>
90 – 110 V.A.C.	110
110 – 130 V.A.C.	120
200 – 220 V.A.C.	220
220 – 240 V.A.C.	240

The game uses a POWER MODULE to handle all of the power distribution chores on the game. It incorporates an ON-OFF switch, primary A.C. game fusing, and power switching capabilities, for using the game with a wide variety of A.C. voltages by re-strapping the main transformer.

## A.C. LINE VOLTAGE ADJUSTMENT

To adjust the game for a different A.C. voltage:

1. Unplug the game from the outlet
2. Disconnect the power cord from the power module.
3. Using a small flat blade screwdriver, pry the fuse holder from the power module.
4. Notice a small window on the fuse holder with an arrow that points to the voltage the game is presently set at.
5. Using the small flat blade screwdriver, lift the retaining tab that holds the voltage selector in the fuse holder.
6. Rotate the voltage selector until the voltage you want is displayed in the voltage select window.
7. Push the voltage selector back into the fuse holder until it snaps into place. NOTE: Do not force the selector into the fuse holder. If it does not go in easily, it is not being installed correctly.
8. Snap the fuse holder assembly back into the power module.
9. Plug the power cord back into the receptacle in the power module, and into the wall outlet.

NOTE: WHEN CHANGING FROM 110-120 TO 220-240, LOWER THE MAIN FUSE VALUE BY ½.

WHEN CHANGING FROM 220-240 TO 110-120, DOUBLE THE MAIN FUSE VALUE.

# GAME SET-UP / TESTING

## TESTING

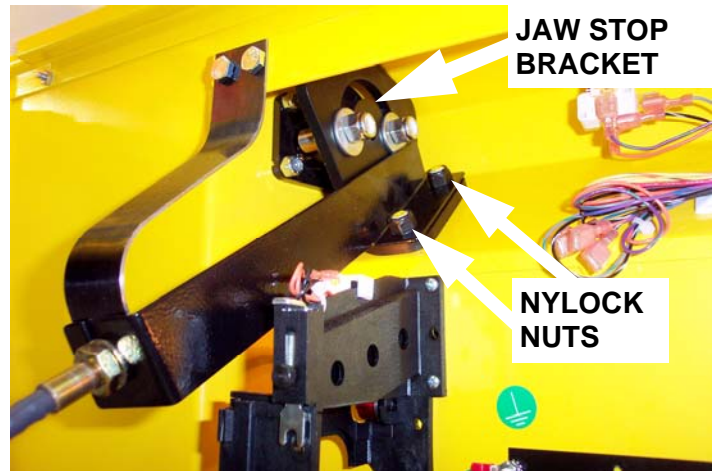
After the initial setup, it is time to test your game for proper operation.

1. Locate the game in its permanent location.
2. Be sure the game has been properly plugged into a 3 prong grounded outlet, and that the receptacle is in good working order.
3. If using an extension cord, be sure it is a 3 prong grounded type of at least 16Ga.
4. Verify that the game is set up for the proper voltage, and turn the power to the game on.
5. The game will run through a test mode at every startup. See test mode explanation in the programming section for details.
6. Insert coins/bills into the machine at least ten times into the coin mech/bill acceptor to assure proper operation
7. Check the credit and prize counters for proper operation.
8. Check game volume during busy time at location to set it at the proper level.

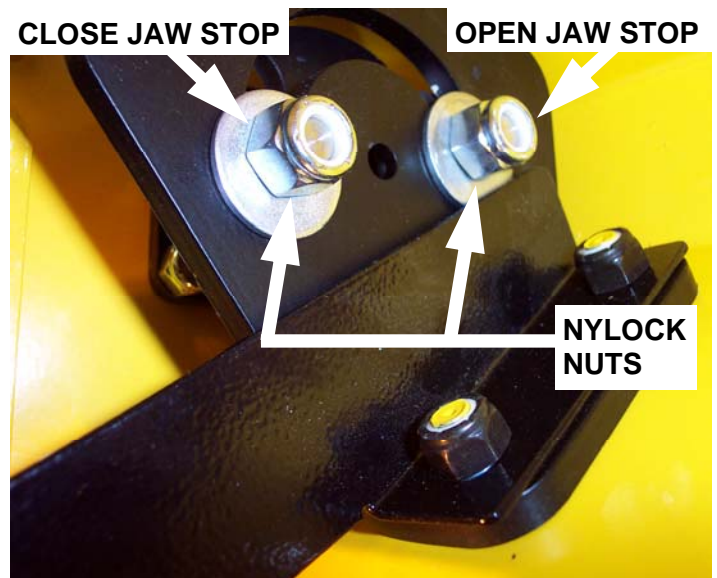
## JAW ADJUSTMENT

Depending on the size & type of prizes you wish to use in the game, changing the jaw open / close adjustment may need to be done. Please note that the game is shipped with no adjustment. The Jaw Stops are loose and have to be set.

Begin by unlocking and opening the front door. On the inside of the door, locate the jaw stop bracket. Loosen and remove the two Nylock nuts.



Loosen the two Nylock nuts and adjust the stops for the cable lever to the desired "open/close" jaw positions. Retighten the Nylock nuts and reattach the bracket to the door.

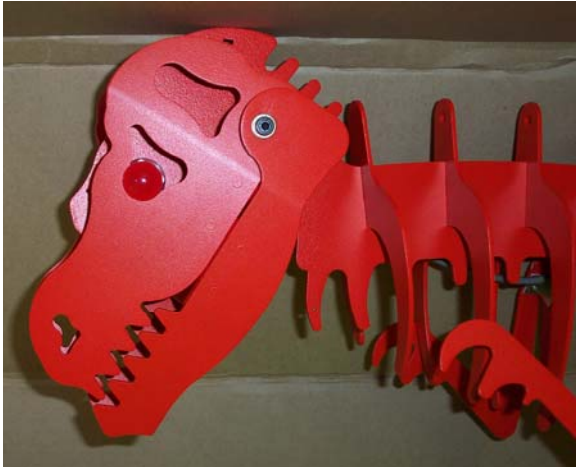


**Please see the next 2 pages for adjustment illustrations.**

# GAME SET-UP / TESTING

## JAW OPENING ADJUSTMENT

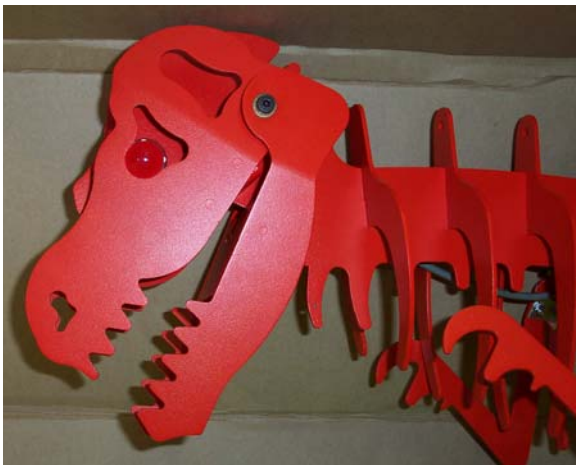
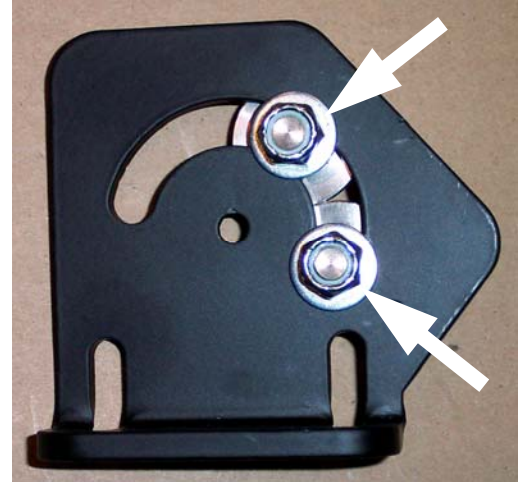
Shown below are the various adjustments of the jaw "stops" to obtain the desired jaw opening. The jaw stop bracket has been removed from the game for clarity.



**JAW - EXTREME  
CLOSED POSITION**



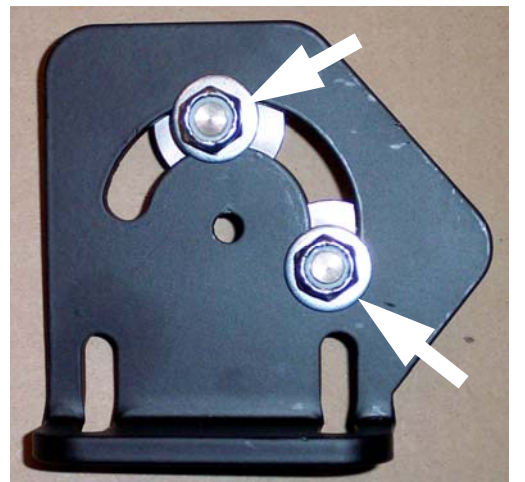
**JAW WILL NOT  
OPEN**



**JAW - MIDDLE  
POSITION**



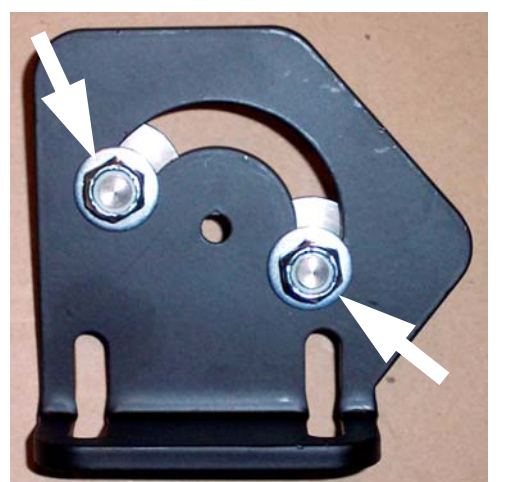
**JAW WILL ONLY  
OPEN FOR THIS  
DISTANCE**



**JAW - EXTREME  
OPEN / CLOSED  
POSITION**



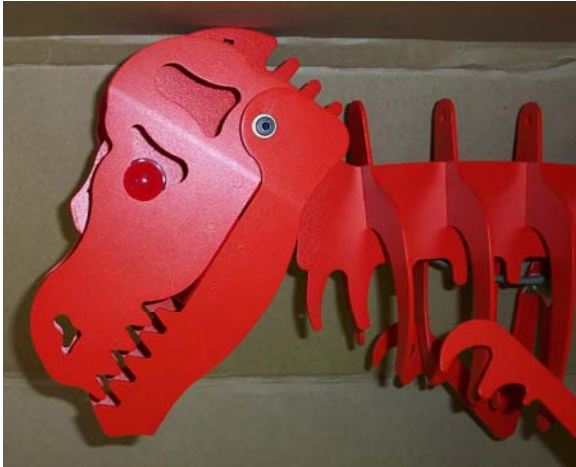
**JAW WILL OPEN /  
CLOSE  
COMPLETELY**



# GAME SET-UP / TESTING

## JAW CLOSING ADJUSTMENT

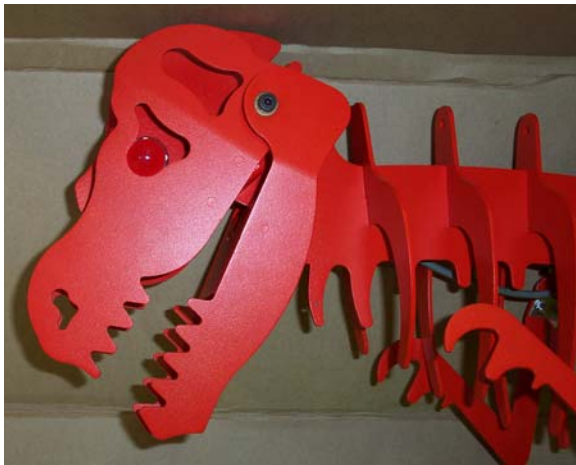
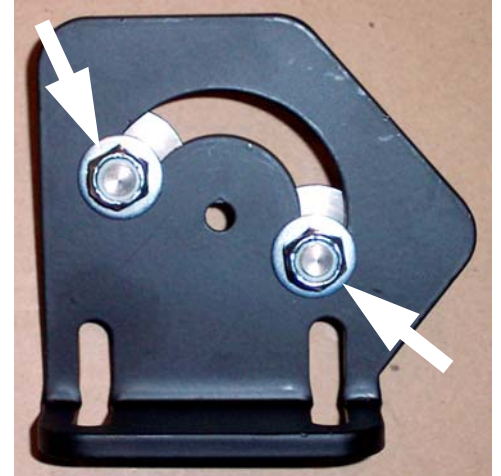
Shown below are the various adjustments of the jaw "stops" to obtain the desired jaw closing. The jaw stop bracket has been removed from the game for clarity.



**JAW - EXTREME  
OPEN / CLOSED  
POSITION**



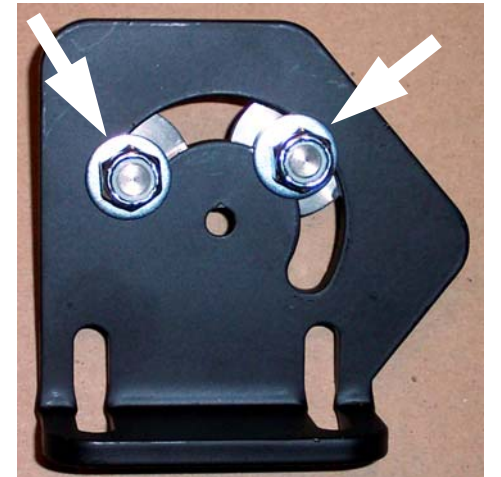
**JAW WILL OPEN /  
CLOSE  
COMPLETELY**



**JAW - MIDDLE  
POSITION**



**JAW WILL ONLY  
CLOSE FOR THIS  
DISTANCE**



**JAW - EXTREME  
OPEN POSITION**



**JAW WILL NOT  
CLOSE**



# GAME SET-UP / TESTING

## PROGRAMMING

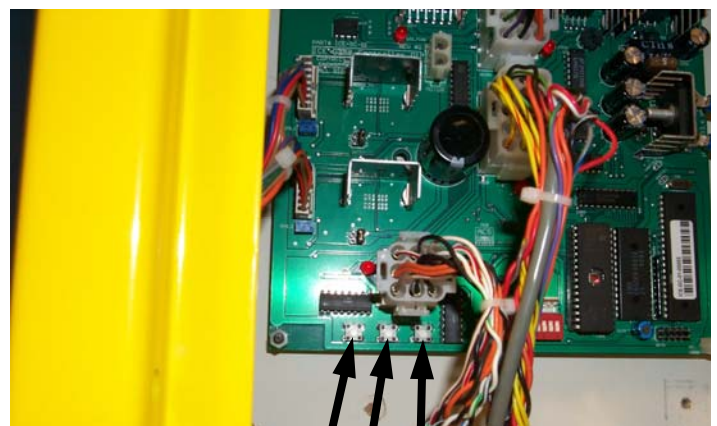
<u>MODE</u> (Credit Display)	<u>DESCRIPTION</u>	<u>MIN / MAX / DEF</u> (Timer Display)	<u>MEANING</u>
<b><u>BASIC PROGRAMMING</u></b>			
0	Default	0, 2, 0	2 - Sets to Factory Default
1	Play Rate	5, 99, 15	How fast timer decrements
2	Play Time Amount	60, 99, 99	Game time length
3	Attract Seconds	10, 99, 60	Length of time between attract modes
4	Dino Down Seconds	1, 20, 9	Number of seconds Dino travels down
5	Dino Up Seconds	4, 6, 4	Number of seconds Dino travels after being in Prize Tub
6	PlayTillWinMaxAtm	3, 99, 5	Maximum time to try to win until prize is won
7	PlaTillWinWaitSc	2, 99, 5	Time Dino will wait over Prize Chute
8	WaitToGrabPrizeFi	1, 20, 4	Time Dino will wait to return to the up position after it contacts prizes
9	Exit	0, 1, 0	1 - Exit Programming Mode

To enter programming mode, press the select button. Use the increment/decrement buttons to obtain the desired mode.

Press the select button to enter the chosen mode. Use the increment/decrement buttons to obtain the desired setting.

To save your settings, press the select button.

To exit programming mode, press the select button, when the display shows "Eh".



**DECREMENT BUTTON**

**SELECT BUTTON**

**INCREMENT BUTTON**



## DIP SWITCH SETTINGS

#1 OFF & #2 OFF - 1 Quarter per game  
#1 ON & #2 OFF — 2 Quarters per game  
#1 OFF & #2 ON — 3 Quarters per game  
#1 ON & #2 ON — 4 Quarters per game

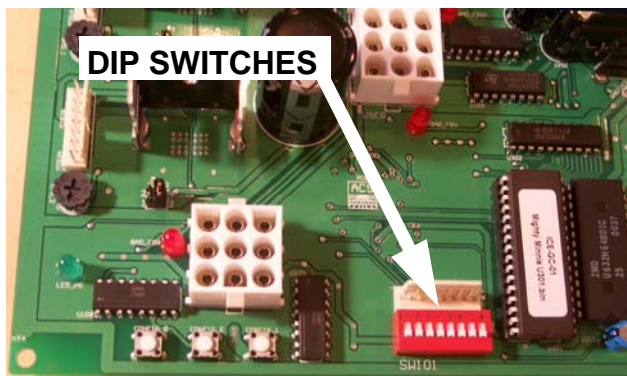
#3 OFF & #4 OFF - 1 Play per Dollar  
#3 ON & #4 OFF — 2 Plays per Dollar  
#3 OFF & #4 ON — 3 Plays per Dollar  
#3 ON & #4 ON — 4 Plays per Dollar

#5 ON - Play till win  
#5 OFF - Normal Play with credit debit after each game

#6 ON - Two Button Operation  
#6 OFF - Normal Single Button Operation - Tub Stop

#7 On - Disable Prize Drop Checking  
#7 OFF - Enable Prize Drop Checking

#8 ON - Disable Attract Mode  
#8 OFF - Enable Attract Mode



## CLEANING

Regular cleaning of the game will keep it looking new and greatly enhance its appeal.

Clean the glass portions of your **MIGHTY MINI™** with a standard window cleaner such as Windex®.

Clean the cabinet sides with a good cleaner such as Fantastik® or Formula 409® and a soft rag. A mild soapy solution can also be used.

**NOTE: DO NOT USE ALCOHOL, THINNERS OF ANY KIND, OR PINBALL PLAY FIELD CLEANERS ON ANY OF THE CABINET SURFACES. ESPECIALLY THE DECALS.**

## GAME RELOCATION

**In the event that your game has to be moved to a new location or returned for service, the dinosaur must be in the lowered position as shown in the photo below.**

To lower Dino:

1. Coin up game.
2. Press the "Dino Drop" button when Dino is over the Prize Chute.
3. When the Dino makes contact with the Prize Fence, turn game off or unplug.

Be sure to wrap the dinosaur's head with foam padding before moving the game.

**IMPORTANT: DO NOT FASTEN THE DINOSAUR TO THE PRIZE CHUTE OR ANY PART OF THE GAME.**



# QUICK TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
The dinosaur does not move side to side smoothly	Bad harness Bad connectors Blown fuse Bad door interconnect switch	Replace harness Replace connectors Replace fuse Replace door switch
The dinosaur does not drop when "Drop Dino" button is pushed	Bad button Bad harness	Replace button Replace harness
The dinosaur's mouth does not open or close when the handle is pushed or pulled	Cable binding Cable unattached Cable broken	Replace cable Re-attach cable Replace cable
The dinosaur does not rise up out of the prize tub after grabbing prize	Bad linear actuator Programming option	Replace linear actuator Re-program
Prize tub does not spin	Bad motor Bad connectors Bad harnessing Bad door interconnect switch	Replace motor Replace harness Replace connectors Replace door switch
Prize tub does not stop when the "Drop Dino" button is pushed	Programming option	Re-program
Door will not lock properly or door locks with difficulty	Lock does not rotate smoothly Lock rods binding on the lock cam or lock rod guides	Lubricate lock rod guides with molly grease File lock rod guides so that door closes. Do not file off too much material - door must still close tightly

# GAME REPAIR

WARNING: ALWAYS REMOVE POWER TO THE GAME BEFORE ATTEMPTING ANY SERVICE, UNLESS NEEDED FOR SPECIFIC TESTING. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SERIOUS INJURY TO YOURSELF OR OTHERS.

## OPERATIONAL BACKGROUND

The **MIGHTY MINI™** coin operated amusement game has been designed for an absolute minimum of service.

## TROUBLESHOOTING PHILOSOPHY

To find problems with this game, always first check what should be obvious. See that the game is plugged in, and all of the fuses on the game are good. This includes the fuse that is located **INSIDE** the power module.

Next, check to see that all of the connectors are firmly seated, and that none of the wires have pulled out of them.

When trying to find out if specific components are bad or not, try swapping them with components from another player station to see if the problem moves with the component, or stays where it was. This will help you to know if you have a problem with a specific component, or maybe a problem with either the wiring or the Main P.C. Board.

Use extreme caution when using probes or volt meters if the game is powered up. If doing continuity checks, it is important to disconnect the harnessing at both ends, as attached they may yield erroneous results.

If P.C. Boards are suspected as causing problems, check to see that all I.C. chips are firmly seated on the boards.

If light bulbs are suspected, swap them with one that is known to work to narrow the problem down to bulb or P.C. Board.

# PARTS LISTINGS

## MECHANICAL PARTS

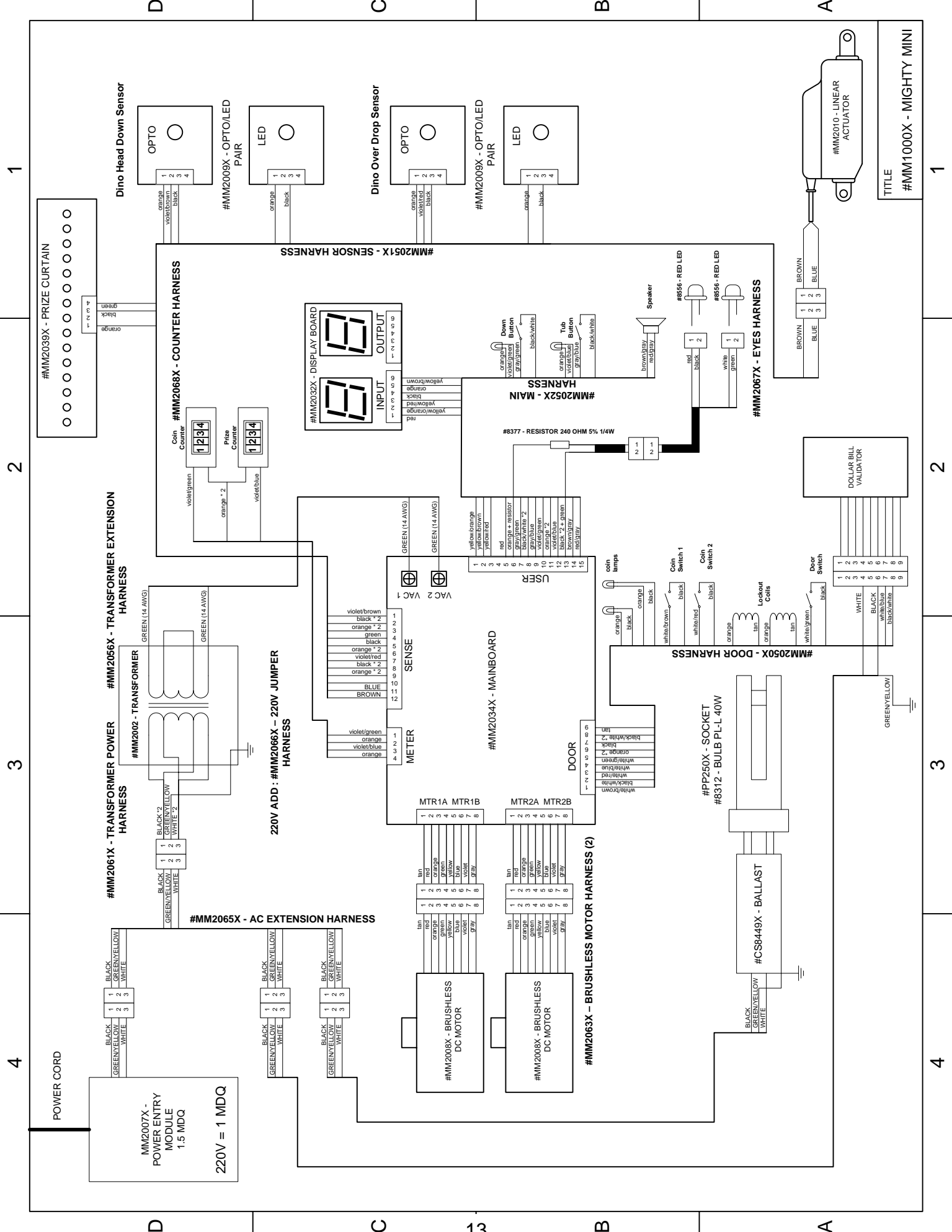
MM2010	LINEAR ACTUATOR
HR1019	LEVELER FOOT - SHORT
MM1052	CASTER
MM1053	BEARING
MM1058-P802	COIN FUNNEL - HALF
MM1070	LINKAGE CABLE
MM3001	TUB
MM3010	PRIZE DEFLECTOR
WF1057	BRASS BUSHING

## GRAPHICS

MM7001	DECAL - PRIZE DOOR
MM7002	DECAL - REAR GLASS ROCKS
MM7003	DECAL - FOOT PRINT
MM7004	DECAL - FRONT LOWER LOGO
MM7005	DECAL - SIDE LOGO
MM7008	DECAL - DROP DINO
MM7009	DECAL - FRONT GLASS
MM7010	DECAL - TOP LEAVES
MM9001	SERVICE MANUAL

## ELECTRICAL / ELECTRONIC PARTS

2970	SWITCH - PUSH/PULL
8312	BULB PL-L 40 W
8449	BALLAST
FP2007	SPEAKER - 4" ROUND
HR2005	BUTTON - LARGE ROUND



1  
2  
3  
4

1  
2  
3  
4

TITLE  
#MM1000X - MIGHTY MINI

MM2007X - POWER ENTRY MODULE 1.5 MDQ  
220V = 1 MDQ

#MM2008X - BRUSHLESS DC MOTOR  
#MM2008X - BRUSHLESS DC MOTOR

#CS8449X - BALLAST

#PP250X - SOCKET  
#8312 - BULB P-L-L 40W

#MM2050X - DOOR HARNESS

#MM2034X - MAINBOARD

#MM2052X - MAIN HARNESS

#MM2068X - COUNTER HARNESS  
#MM2032X - DISPLAY BOARD

#MM2061X - TRANSFORMER POWER HARNESS  
#MM2065X - AC EXTENSION HARNESS  
#MM2068X - TRANSFORMER EXTENSION HARNESS

220V ADD : #MM2066X - 220V JUMPER HARNESS

Dino Head Down Sensor  
#MM2009X - OPTOILED PAIR

Dino Over Drop Sensor  
#MM2009X - OPTOILED PAIR

#MM2010 - LINEAR ACTUATOR

DOLLAR BILL VALIDATOR

#8556 - RED LED  
#8556 - RED LED

Speaker

#8377 - RESISTOR 240 OHM 5% 1/4W

USER  
METER  
SENSE  
DOOR

#MM2063X - BRUSHLESS MOTOR HARNESS (2)

#MM2039X - PRIZE CURTAIN

# Warranty

I.C.E warrants all components in the **MIGHTY MINI™** game to be free of defects in materials and workmanship for a period of ninety days from the date of purchase.

This warranty does not cover items damaged due to normal wear and tear, subjected to abuse, improperly assembled by the end user, modified, repaired, or operated in a fashion other than that described in the service manual.

If your **MIGHTY MINI™** game fails to conform to the above-mentioned warranty, I.C.E.'s sole responsibility shall be at its option to repair or replace any defective component with a new or remanufactured component of equal to or greater O.E.M. specification.

I.C.E. will assume no liability whatsoever, for costs associated with labor to replace defective parts, or travel time associated therein.

I.C.E.'s obligation will be to ship free of charge, replacement parts by domestic U.P.S. Ground, U.S. mail, or other comparable shipping means. Any express mail or overnight shipping expense is at the cost of the purchaser.

Products will be covered under warranty only when:

- The serial number of the game with the defective parts is given.
- The serial number of the defective part, if applicable, is given.
- Defective parts are returned to I.C.E., shipping pre-paid, in a timely fashion, if requested by I.C.E.
- A copy of the sales receipt is available as proof of purchase upon request of I.C.E.

I.C.E. distributors are independent, privately owned and operated. In their judgment, they may sell parts or accessories other than those manufactured by I.C.E. We cannot be responsible for the quality, suitability, or safety of any non-I.C.E. part, or any modification, including labor, which is performed by such a distributor.



# WARRANTY

ICE Inc warrants that all of its products will be free from defects in material and workmanship.

When placing a warranty request, please be prepared to provide the following information:

- Serial Number of Game or Bill of Sale
- Machine Type
- A Detailed Description of the Equipment Fault Symptoms

ICE product, including Cromptons, Sam's Billiards, Uniana and Bell Fruit is warranted as follows:

- 180 days on the Main PCB and Computers
- 180 days on Motors
- 90 days on all other components (i.e. DBV's, Ticket Dispensers, etc)
- 30 days on repaired items
- 3 years on all Crane Harnessing
- 9 Months on Printers

ICE Inc shall not be obligated to furnish a warranty request under the following conditions:

- Equipment has been subjected to unwarranted stress through abuse or neglect
- Equipment has been damaged as a result of arbitrary repair/modification attempts
- Equipment that has failed through normal wear and tear

ICE Inc will assume no liability whatsoever for costs associated with labor to replace defective parts or travel time associated therein.

All defective warranty covered components will be replaced with new or factory refurbished components equal to OEM specifications. ICE Inc will cover all domestic UPS ground, or comparable shipping means, freight costs during the warranty period. Expedited shipments are available for an additional charge.

Defective parts are returned to ICE Inc, at the customer's expense, in a timely fashion.

ICE distributors are independent, privately owned and operated. In their judgment, they may sell parts and/or accessories other than those manufactured by ICE Inc. We cannot be responsible for the quality, suitability or safety of any non-ICE part, modification (including labor) that is performed by such a distributor.

I.C.E. Parts/Service Dept.  
Innovative Concepts in Entertainment  
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