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THE CHOCOLATE FACTORY™

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INTRODUCTION

GAME FEATURES

The brand new CHOCOLATE FACTORY™ all metal crane game by I.C.E. was designed with the operator in mind. Reliability, low maintenance, themed cabinetry, and all metal construction are the key design features, exactly what is needed to ensure a combination of long life and high profit.

With nearly the entire construction made of metal, it was only natural to Powder Epoxy Coat everything, inside and out. This provides the owner - operator with a game that will last for many years to come. The major advantages of all metal construction include:

- Vault like security
- Long service life
- Low maintenance, and High Durability.

All windows, of the CHOCOLATE FACTORY™, are 1/4" tempered plate glass to provide an easy to clean, maximum safety, scratch resistant surface. Other features include, 41 strand conductor cables, to prevent wire fatigue, a full range of operator adjustable software, and a newly designed pusher deck assembly.

The first step in ICE's new crane design was to select several leading cranes available on the market today, observe and determine what problems can be or are causes of failure and costly down time. ICE then surveyed operators nation wide, requesting information like:

- What are the leading causes of crane failures in your locations
- What are some problems in servicing cranes.
- What changes would you make to current cranes to create a better machine.

ICE's engineers then compiled all critical data, addressed and corrected each problem and use this information combined with a new pusher deck design for cranes to create what we now call the CHOCOLATE FACTORY™.

This method of design ensures that the needs and concerns of the owner-operators dictate the final design parameters, for who knows a cranes attributes and faults better than a crane operator.

GAME PLAY

After enough coins are inserted to create one credit, a theme song written exclusively for the CHOCOLATE FACTORY™ will begin and continue until the conclusion of game play.

When the player has moved the joystick, to move the crane, the timer on the right display will begin to count down. The player will then position the crane above the prize they are attempting to win by pressing the drop button to lower the claw.

If the nudging option is on, then the player will have the ability to keep "nudging" the claw down each time the button is pressed to hone in on the chosen prize. If the nudging option is off, then the player will have only one chance to drop the claw.

When the claw has fully dropped it will close and retract to its upper most position. The crane will then automatically position its self over the slide mirror at the rear of the cabinet. The claw will lower, then open, releasing the prize onto the slide mirror which will deliver the prize to the pusher deck. The new product will be pushed ahead and if there is sufficient product on the pusher deck the product closest to the edge will be dispensed into the prize chamber.

The player can now remove the prize(s) from the prize chamber through the prize door located in the front, lower left corner of the game. The game is now in its home position and is ready for the next player in line.

SETUP/TESTING/MAINTENANCE

SAFETY PRECAUTIONS

IMPORTANT: FAILURE TO FOLLOW THESE DIRECTIONS CLOSELY COULD CAUSE SERIOUS DAMAGE TO YOU AND/OR 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 AND/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.

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.

ASSEMBLY INSTRUCTIONS

1. Carefully unbox the game from its packaging.
2. Using the supplied keys, unlock the front door of cabinet.
3. Cut all tie wraps holding the wagon assembly and crane assembly in place.
4. Plug the game into a three prong grounded receptacle. **NOTE:** The appliance must be positioned such that the plug is accessible during use.
5. The game is now ready for start up.

TESTING

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

1. Locate the game in it's permanent location and lock casters
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 16 Ga.
4. Verify that the game is set up for the proper voltage, and turn on power to the game.
5. The game will run through a test mode at every start up. See test mode explanation in the programming section for details.
6. Enter FUNCTION TEST MODE see programming section.
7. Check all functions in this mode.
8. Check door switch for proper function.
9. Check game volume during busy time at location to set it at the proper level.
10. Polish the mirror slider, above the pusher deck @ the left rear corner of the game, with a good furniture polish. i.e. Behold®

CLEANING

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

Clean the windows of your CHOCOLATE FACTORY™ with a standard window cleaner such as Windex®

Clean the cabinet sides with a good cleaner such as "Fantastic" or "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.

IF YOU HAVE ANY QUESTIONS OR COMMENTS REGARDING INSTALLATION OR PROPER FUNCTION OF YOUR GAME, PLEASE CALL OUR SERVICE DEPARTMENT

Candy Mix and %'s

ICE has determined a formula, listed below, to yield an approximate payout of 30%. This will be a starting point for proper payout but will require fine tuning by the operator to precisely control final profit of their machine.

Changing candy sizes, costs, types and quantity will effect overall payout.

1 ea.	800 Fun size candy bars. ICE recommends 5 - 6 different types:	
	160 Snickers	800 * \$0.11 = \$88.00
	160 Milky way	
	160 3 Musketeers	
	160 Kit Kats	
	80 Butter Fingers	
	80 Baby Ruth's	
1 ea.	100 Fun size soft packs.	
	40 M+M Plain	100 * \$0.11 = \$11.00
	40 M+M Peanut	
	20 Skittles	
3 ea.	160 Vending size chocolate bars	
	40 Snickers	160 * \$0.33 = \$52.80
	40 3 Musketeers	
	40 Milky way	
	20 Reece's Peanut Butter Cups	
	20 Mr. Good Bar or Butter Fingers	

		TOTAL 1060 bars = \$151.80
		Average cost/candy ~ \$0.14

When you add candy - place existing candy in the center of the game and add new candy around edges to assure complete candy turn over. Add candy in lots of equal % to the initial setup i.e.:

100%	50%	25%	20%	15%	10%	5%	
	400	200	160	120	80	40	
or	50	or	25	or	10	or	5
	80		40		16		8

If you wish to *Increase* the % payout, *Increase* the % of VENDING SIZE CANDY BARS (.\$0.33 ea.)
 If you wish to *Decrease* the % payout, *Decrease* the % of VENDING SIZE CANDY BARS (.\$0.33 ea.)

ICE strongly recommends that you keep game play @ \$0.50 for 3 plays or \$1.00 for 6 plays.

The set up of:

- 800 Fun size bars @ \$0.11 ea.
- 100 Soft packs @ \$0.11 ea.
- 160 Vending Size @ \$0.33 ea.
- 3 Plays for \$0.50
- or
- 6 Plays for \$1.00

Should yield a % payout of approximately 30 -35%. i.e. (\$151.80 of product should gross sales approximately \$455) Any variance of the above candy combinations WILL affect your payout.

Please contact the Service Department at ICE 1 716 759-0360 if you have any questions or

SETUP/TESTING/MAINTENANCE

Compute actual payout

EXAMPLE

Game Cost	= \$0.50 / 3 plays
Avg. cost of 1 pc candy	= \$0.14
Desired payout %	= 33 %
1 weeks collection	= \$416
Pieces of candy dispensed in 1 week	= 877

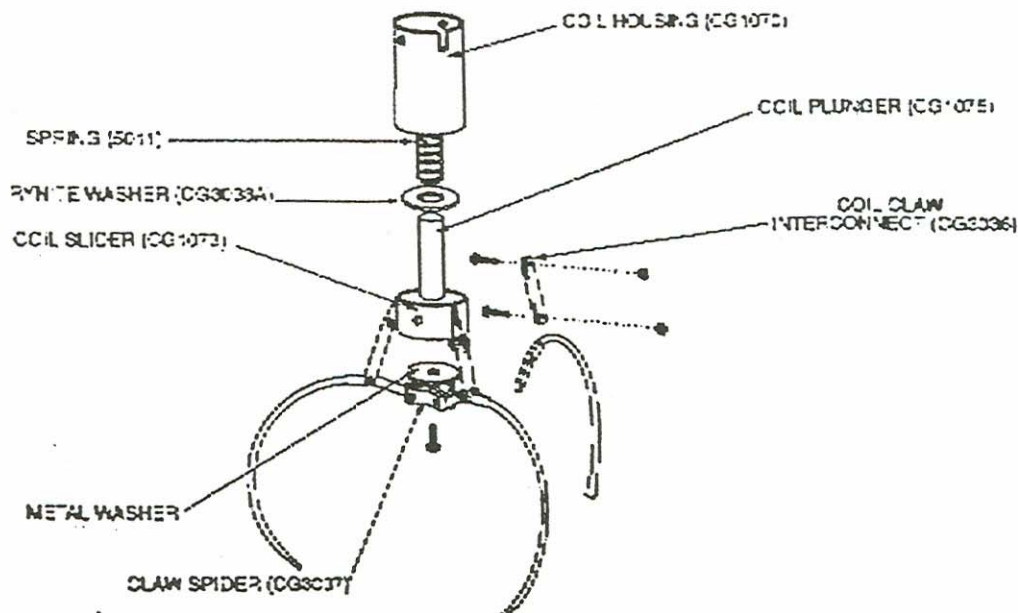
$$\frac{(\text{Pieces of candy dispensed}) * (\text{Average cost of 1 pc of candy})}{(\text{1 weeks collection})} = \text{Actual \% Payout}$$

- 1.) $\frac{(877)*(\$0.14)}{\$417} = \text{Actual \% Payout}$
- 2.) $\frac{\$122.78}{\$417} = \text{Actual \% Payout}$
- 3.) 29.44% = Actual % Payout

In this example the payout is a little low (29%, desired payout is 33%). To increase your payout adjust the number of large "vending" size bars that are in you mix. This will change your payout two fold. One, because you will increase the cost of your mix and two, the larger candy bar will allow for a larger push, increasing your winnings. Conversely, if you are paying out too high, then adjust your mix so as to have less "vending" size bars. The following variables will change your % payout: Cost of game, candy mix percentages, candy size, candy cost, and claw tip adjustment.

NOTE: For a payout of approximately 30% -35 % use the recommended candy mix percentages listed on the previous page, leave the programming set to factory defaults, and make sure that the claw tips close tightly without binding.

FIG.1



CANDY SOURCES

1. *Local Walmart*- often have deals with their candy. They always have ample stock and have a wide variety of choices.
2. *Sams Club* or other large warehouse type facilities - will always have a large selection of candy.
3. *Local Candy Distributors* - will also have large quantities of candy. At certain times of the year, around larger holidays, large quantities of candy will be available. During non-holiday times local candy distributors are often low on stock so it is advisable to call ahead to see if the particular candy you are seeking is currently available.
4. *Local grocery stores* are a good choice if you are in a pinch. This is not the most economical way of purchasing candy due to the lower volume of merchandise purchased. They tend to pay more but they will often have what you need.

PROGRAMMING

CHOCOLATE FACTORY

<u>Function (Display)</u>	<u>Description</u>	<u>Min/Max/Default (Timer Display)</u>	<u>Meaning</u>
<u>PROGRAMMING</u>			
	Game Type	0,1,1	0 - Left, Right, Forward, Backward, Nudge 1 - Left, Right, Forward, Backward, Drop
	Time	10,45,10	10-45 Seconds (Inc. every 5 seconds)
	Coins/Credit	0,10,2	0 - Free Play 1-10 Coins required for 1 credits
	Coins/Dollar Bill	0,10,4	0 - Off 1-10 Number of coins each bill is worth
	Plays/Credit	0,10,3	0 - Play till you win mode 1-10 Number of plays per credit
	Counter Type	0,1,0	0 - Credit counter 1 - Coin counter
	Factory Default	0,1,0	0 - Normal 1 - Restore factory defaults upon next startup
	Function Tests	FUNCT.	Left or Right movement will move you to the Function Test Mode (See below)

ERROR CODES

<u>Problem</u>	<u>Solution</u>
E ²	Replace Micro
Prize Sensor	Replace Prize sensor
Up Error	Check/Replace Up motor or sensor
Down Error	Check/Replace Down motor or sensor
Left/Right Error	Check/Replace L/R motor or sensor
Front/Back Error	Check/Replace F/B motor or sensor
Joystick Switch Error	Check/Replace Joystick switches
Counter Disconnect	A warning that the Credit/Coin Counters were disconnected at sometime <u>NOTE:</u> For the owners safety this error can not be cleared unless a specific procedure is performed. For this procedure the owner must call ICE's Service Dept. @ 1-716-759-0360.

PROGRAMMING

FUNCTION TEST MODE

Up/Down Motor Test	DIAG.	Left /Right Joystick movement will move claw assembly Up and Down. <u>Right display</u> - 0-1 Up switch made 0-2 Down switch made 0-3 Both switches made
Left/Right Motor Test	DIAG.	Left and Right Joystick movement will move wagon assembly Left and Right. <u>Right display</u> - 0-1 Left switch made
Front/Back Motor Test	DIAG.	Left and Right joystick movement will move crane assembly Front and Back. <u>Right display</u> - 0-1 Back switch made
Pusher Deck/Sensor Test	DIAG.	Left and Right Joystick movement will turn On the Pusher deck assembly. <u>Right Display</u> - 0-1 If any 2 of 3 edge sensors are blocked
Candy Door Test	DIAG.	<u>Left movement</u> of the joystick will open the candy door at high speed (24VDC) and sound tilt alarm. <u>Right Movement</u> of the Joystick will open the candy door at normal speed (12 VDC) (OPTIONAL) <u>Right Display</u> - 0-1 When prize sensor in candy chute is blocked.
Claw Open /Close Test	DIAG.	Left and Right joystick movement will close claw assembly
Tilt Sensor Test	DIAG.	<u>Right Display</u> - 0-# of times tilt sensor is activated
Coin Input Test	DIAG.	<u>Right Display</u> - 0-1 each time the coin switch is activated.
DBV Input Test	DIAG.	<u>Right Display</u> - 0-# of DBV pulses when a 1 dollar bill or 5 dollar bill is inserted (1 or 5 respectively).
Prize/coin counter Test	DIAG.	Each <u>Left</u> movement of the joystick will increment the <u>Prize counter</u> by one. Each <u>Right</u> movement of the joystick will increment the <u>Coin counter</u> by one.

PROGRAMMING

MODE EXPLANATIONS

GAME TYPE - There are 2 game types:

- 0 Left, Right, Forward, Backwards, Nudge - This mode allows the player to lower the claw time the drop button is pressed. This allows the player to hone in on the prize they are attempting to while still moving the crane/wagon assemblies left, right, forward or backwards.

- 1 Left, Right, Forward, Backwards, Drop - This mode will cause the claw to drop fully in the drop button is pressed.

TIME - This option allows the operator to set the game play length. Options are from 10 seconds to 45 seconds in 5 second intervals.

COIN /CREDIT- This option allows the operator to set the number of coins needed to create 1 credit. A setting of "0" will put the game into "Free Play" mode.

COINS/DOLLAR BILL - This option allows the operator to set the number of coins each bill is worth. A setting of "0" turns this option off.

PLAYS/CREDIT - This option allows the operator to set the number of plays will be given per credit. A setting of "0" will place the game into Play "Till You Win" mode.

COUNTER TYPE - Setting this option to "0" will count credits, setting this option to "1" will count coins.

FACTORY DEFAULTS - A setting of "0" for this option will keep the latest operator settings. A setting of "1" for this option will restore all options to factory defaults.

FUNCTION TESTS - This option will move the operator to a FUNCTION TEST MODE where 9 critical game functions can be readily tested.

Entering Programming Mode

To enter the programming mode, open the front door and press the button marked PROG., located on the cross member at the front of the playfield. NOTE: The game WILL NOT go into programming mode if the door is "closed", or the door switch has been pulled to its outer most position. Once you are in the programming mode move the joystick forward and backward to move through the programming options shown on the left display. To change the value of the mode, shown on the right display, move the joystick left and right. Once all options have been set, press the drop button and the game will return to regular game play with the new settings.

Entering the Error Mode

To enter the error mode, open the front door and press the button marked ERR., located on the cross member at the front of the playfield. The left displays will read Er, while the right display will scroll any error codes that have been logged. To exit the Error mode press the Error button a second time. The crane will go through a start up procedure and re-check all game functions.

Entering the Function Test mode

To enter the Function Test Mode, open the front door and press the button marked Prog., located on the cross member at the front of the playfield. Go to option 7, shown on the left display, and move the joystick left or right. The left display will now read F0, Function 0, and moving the joystick forward and backward will change the function test 0-9. Movement of the joystick left or right will perform the task for that particular function. (See Function Test Mode page)

PROGRAMMING

Error Code Explanation

Every time that the game is powered up, or the door is closed, the game will run through a test mode to check the following items.

- | | | |
|--------------------|----------------------------|-------------------------|
| - HOME BACK SWITCH | -E2 (MEMORY) | - JOYSTICK BUTTONS |
| - HOME LEFT SWITCH | - DOWN SWITCH | - PRIZE SENSOR |
| - UP SWITCH | - CREDIT/COIN DISCONNECT** | - CLAW CLOSE, CLAW OPEN |

If any of the above items are malfunctioning, the game will light up the 4 decimal points on the medium displays. This will alert the operator that there has been a problem. The operator needs only unlock and open the front door, press the error button, located on the cross member at the front of the playfield, and the error codes will be scrolled through one at a time on the right display. Repairs should be made to those areas in which errors have been logged. When all codes have been seen, press the error button a second time to exit error mode and the game will clear all errors**. The game will then run through a test mode to check for proper operation and if all is well, game play can start, if not the 4 decimals will once again light up and the operator will need to check the error codes again. Game play can continue, to the best of the machine's abilities, with problems, until the errors are corrected. At no time should the game be inoperable unless a key component is damaged.

* Error code 8 (coin credit disconnect) will not be cleared unless a specific procedure is performed. For the owners protection this procedure does not appear in this manual and the owner of the crane will need to call CE's Service Dept. @ 1-716-759-0360 for this procedure.

NOTE: Some items on the list can not be detected by the game and require that the operator watches for these actions to be performed during the start up test mode. (Claw close, Claw open).

QUICK TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
DECIMALS ON THE 4 DIGITS ARE LIT UP	THIS IS IN FACT NOT A PROBLEM BUT A WAY OF LETTING THE OPERATOR KNOW THAT THERE WAS AN ERROR LOGGED DURING THE TEST START UP MODE	OPEN THE FRONT DOOR AND PRESS THE ERROR BUTTON NEAR PLAYFIELD. THE ERROR CODES WILL SCROLL ON RT DISPLAY TO EXIT PRESS ERROR BUTTON 2ND TIME
NO GAME POWER	ON-OFF SWITCH ON THE GAME IS TURNED OFF BLOWN A.C. POWER FUSE GAME NOT PLUGGED IN OR CORD DAMAGED BAD TRANSFORMER TRANSFORMER HARNESSING NOT CONNECTED BAD POWER MODULE	TURN POWER ON REPLACE WITH PROPER FUSE CHECK POWER CORD CHECK FOR PROPER VOLTAGES CHECK HARNESSING REPLACE POWER MODULE
GAME WILL NOT TAKE MONEY OR CREDITS INCORRECTLY.	BAD COIN SWITCH PLAYS PER CREDIT OPTION SET WRONG COINS PER CREDIT SETTING INCORRECT BAD COIN MECHANISM LOOSE OR DAMAGED HARNESSING BAD MAIN P.C. BOARD	CHECK W/METER AND REPLACE CHECK PROGRAMMABLE SETTING CHECK PROGRAMMABLE SETTING ADJUST OR REPLACE CHECK W/METER - REPAIR REPAIR OR REPLACE MAIN BOARD
DIGITS DO NOT WORK	BAD 12 VOLT FUSE BAD DISPLAY P.C. BOARD BAD MAIN P.C. BOARD LOOSE OR DAMAGED DISPLAY HARNESSING	REPLACE WITH PROPER FUSE REPAIR OR REPLACE P.C. BOARD REPAIR OR REPLACE P.C. BOARD CHECK W/METER AND REPAIR
CRANE OR WAGON DOES NOT MOVE	BAD MOTOR LOOSE OR DAMAGED HARNESSING BAD SWITCH ON BUTTON OR JOYSTICK BAD HARNESSING TO BUTTONS OR JOYSTICK BLOWN FUSE TO MOTORS ON MAIN PCB	REPLACE MOTOR CHECK W/ METER - REPAIR REPLACE SWITCH CHECK W/METER REPAIR REPLACE WITH PROPER FUSE
CRANE KEEPS TRYING TO MOVE BUT DOES NOT MOVE TO THE HOME POSITION	BAD LIMIT SWITCH(S) LIMIT SWITCH / ACTUATOR LOOSE OR MISSING	REPLACE SWITCH(S) TIGHTEN OR REPLACE SWITCH / ACTUATOR
CRANE CLAW WILL NOT CLOSE	BLOWN FUSE TO CLAW ON MAIN PCB BAD COIL LOOSE OR DAMAGED HARNESSING CLAW HAS MECHANICALLY JAMMED	REPLACE WITH PROPER FUSE REPLACE COIL CHECK W/ METER AND REPAIR FIND JAM AND REPAIR
CRANE CLAW STAYS CLOSED	BAD DRIVE TRANSISTOR ON MAIN P.C. CLAW HAS MECHANICALLY JAMMED BAD COIL LOOSE OR DAMAGED HARNESSING	REPLACE TRANSISTOR FIND JAM AND REPAIR REPLACE COIL CHECK W/ METER AND REPAIR
CRANE CLAW COMES UP AND ABOUT 10 SEC PASSES BEFORE CRANE MOVES TO THE HOME POSITION	UP SWITCH BAD LOOSE OR DAMAGED HARNESS TO UP SWITCH ACTUATOR LOOSE OR MISSING	REPLACE UP SWITCH CHECK W/METER AND REPLACE TIGHTEN OR REPLACE ACTUATOR
CRANE OR WAGON WHEELS SLIP	MISSING OR DAMAGED O-RING DRIVE BELTS LOOSE SET SCREWS IN WHEELS LOOSE SET SCREWS IN DRIVE COUPLER RAILS NEED TO BE SCUFFED	REPLACE O-RING BELTS TIGHTEN SET SCREWS TIGHTEN SET SCREWS SCUFF TOP OF RAILS WITH SANDPAPER
CRANE DOOR / FLAP WON'T OPEN / CLOSE	DOOR INTERCONNECT SWITCH IN OPEN POSITION OR BROKEN LINEAR ACTUATOR NOT PLUGGED IN LOOSE OR DAMAGED HARNESSING MECHANICAL RELAY ON SENSOR BOARD BAD	CLOSE SWITCH OR REPAIR PLUG IN LINEAR ACTUATOR CHECK W/ METER AND REPAIR REPLACE MECHANICAL RELAY
CRANE FISHER DECK WILL NOT MOVE	LOOSE OR DAMAGED HARNESSING MOTOR ARM JAMMED BAD 5 VOLT SUPPLY TO MOTOR BAD MOTOR	CHECK W/ METER AND REPAIR CHECK FOR JAM AND REPAIR CHECK W METER AND REPLACE REPLACE MOTOR

QUICK TROUBLESHOOTING

- NOTE: A self test will be performed each time the front door is "closed" or the game is powered up.
- NOTE: The game will not count credits or candy out (OPTIONAL) on the mechanical counter(s) while the front door is open. A candy counter is available only if the optional prize detector system is available.
- NOTE: If the Wagon does not move smoothly through a full travel from left to right, check to see that the wheel spacing is correct. If the spacing is correct then check the 2 cabinet rails for burrs that may cause the wheels to bind.
- NOTE: If the Crane does not move smoothly through a full travel from front to back, check to see that the wheel spacing is correct. If the spacing is correct then check the 2 separator rails for burrs that may cause the wheels to bind.
- NOTE: If the Micro track for the left right movement is binding during its travel, check to see if the top mirror brackets edge, also the shelf the micro track rides on, has been de-burred.
- NOTE: If the front door is having trouble closing fully, check to see that the front door harness is tie wrapped below the lowest point of the prize chamber wall so as not to be pinched near the door hinge. Next make sure that the right side door "L" bracket is not hitting the right side of the game upon closure.
- NOTE: If the door will not lock properly or locks with difficulty, check to see that the lock rotates smoothly. Next check lock rods are not binding on the lock cam or the lock rod guides. Next check that all friction points have been lubricated with molly grease. Finally if need be, adjust the lock rod guides such that the door closes and locks smoothly by loosening the appropriate bolts, adjusting and re-tighten.
- NOTE: If the decimals light up on the displays after a self test, an error has been logged. When the door is in the open position, press the error button, located on the cross member near the playfield front. The left display will read "Er" and the error codes will automatically scroll on the right display. To exit error mode, press the error button a second time. The crane will perform a self test, checking for proper operation of all crane functions.
- NOTE: If, during self test mode, the claw does not drop, check one of the following. The string or string lever is mechanically binding. The up or down switch is sticking, broken, missing or misaligned from its actuator.
- NOTE: If claw stays closed first check for bad fuses on the main board, next check that there are no wires dislodged from the connectors in the harness between the wagon and crane, the wagon and main board, the crane assembly and the wagon assembly. If the problem still exists and no fuses are blown or wires dislodged, it is likely that the diode in the coil assembly and the transistor controlling the claw on the main board has also blown. Shut off game immediately and replace coil/ diode assembly. Next, check Q10 transistor and related circuit for damaged components and have replaced as necessary by ICE or a qualified technician.
- NOTE: If claw is jerky while being lowered, it is likely that the up spring is missing or has been compressed. Another possibility is that the string has mechanically bound on the spool. To fix the string binding, enter the programming mode by pressing the programming button, located on the cross member near the front of the playfield, and go to mode 7. Move the joystick to the left or right and you have now entered the Function Test Mode. The left display will now read F0. By moving the joystick to the left and right you are able to raise and lower the claw mechanism. Move the crane assembly to the front of the crane and lower the claw mechanism all the way until it starts to wind up backwards. Pull gently down on the string to provide proper tension on for the string while reversing the motor direction to raise the claw mechanism and properly rewind the string on the spool. Exit the Function Test Mode by pressing the drop button and the string should be free of mechanical binding.
- NOTE: If the claw stays open first check for bad fuses on the main board, next check that there are no wires dislodged from the connectors in the harness between the wagon and crane, the wagon and main board, the crane assembly and the wagon assembly. If the problem still exists and no fuses are blown or wires dislodged, it is likely that the diode in the coil assembly and the transistor controlling the claw on the main board has also blown. Shut off game immediately and replace coil/ diode assembly. Next, check Q10 transistor and related circuit for damaged components and have replaced as necessary by ICE or a qualified technician.
- NOTE: If the crane/wagon, in the home position, tries to move left or back, check to see that both of the actuators are present and tight. Next check to see that both of the sensors are present and tight. Next check to see that the sensors and actuators are aligned. Then check to see that the sensor wires are not dislodged from the connectors. Finally replace the sensor, it is likely to be bad.

GAME REPAIR

LINEAR ACTUATOR REPLACEMENT

1. Remove all A.C power from the game.
2. Unlock and open front door.
3. Remove bolt securing pusher deck assembly.
4. Un-plug pusher deck assembly from main harness and remove from game.
5. Remove bolt securing linear actuator assembly.
6. Un-plug linear actuator assembly from main harness and remove from game.
7. Remove 2 bolts securing linear actuator to assembly.
8. Re - assemble in reverse order using a new linear actuator.

PUSHER DECK MOTOR REPLACEMENT

1. Remove all A.C power from the game.
2. Unlock and open front door.
3. Remove bolt securing pusher deck assembly.
4. Un-plug pusher deck assembly from main harness and remove from game.
5. Un-plug pusher deck motor from its harness (2 wires) Note position of wires from pusher deck motor, so as to prevent hooking up backwards later.
6. Remove 5/16 nylock nut securing pusher deck motor arm to pusher deck linkage.
7. Remove (4) sq. drive screws holding motor bracket to pusher deck assembly.
8. Remove (3) metric bolts securing pusher deck motor to its bracket.
9. Re-assemble in reverse order using new pusher deck motor.

REMOVAL OF CRANE MECHANISM

1. Remove all A.C power from the game.
2. Unlock and open the front door.

3. Slide the crane assembly to the front center of the crane.

4. Loosen black thumb screw securing the front to back micro track bracket in place. The thumb screw is located on the front face of the crane assembly nearest the door.

5. Slide the micro track bracket forward and up to disconnect it from the crane assembly.

6. Carefully lift the entire crane assembly off the rails approximately 2 inches, shift to the left as far as possible, drop the right side down past the right crane rail and slide the entire assembly out from between the two rails.

7. The crane assembly can now be removed from the cabinet so necessary maintenance / repairs can be made.

8. Reassemble in reverse order.

REMOVAL OF WAGON MECHANISM

1. Remove all A.C power from the game.

2. Unlock and open the front door.

3. Remove crane assembly as detailed above.

4. Loosen black thumb screw securing the micro track bracket in place. The thumb screw is located at upper right face of wagon assembly.

5. Slide the micro track bracket to the right and up to disconnect it from the wagon assembly.

6. Carefully lift the entire wagon assembly off the rails and rotate clockwise until the left front wheel clears the front rail.

7. Lower the front of the wagon assembly and remove the from between the two rails.

8. The wagon assembly can now be removed from the cabinet so necessary maintenance / repairs can be made.

9. Re-assemble in reverse order.

PRIZE SENSOR REPLACEMENT (OPTIONAL)

1. Remove all A.C power from the game.

2. Unlock and open front door.

GAME REPAIR

Remove the (5) 6-32 bolts securing the right sensor bracket in place or the (1) 10-24 bolt holding the left sensor bracket in place.

Carefully remove the sensor board from its mounting studs.

Re-assemble in reverse order using a new size sensor board.

STRING REPLACEMENT

Remove all A.C power from the game.

Unlock and open front door.

Remove crane assembly as detailed above.

Disconnect the claw assembly from the crane assembly by remove the two bolts securing the aluminum coil cap to the coil housing.

Tie a knot at the end of the replacement string. Use super glue or a lighter to prevent the knot from working loose.

Using a lighter, melt the other end of the string and form a point before it cools.

Feed the pointed string end up through the hole in the coil cap and pull until the knot is firmly seated on the inside of the cap. SEE CRANE ASSEMBLY DRAWING

Feed the pointed end up through the hole in the bottom of the crane assembly housing.

Feed string over first string guide then under the next string guide. SEE string routing diagram on inside of the crane housing cap.

Finally feed the string through the hole in the side of the string spool, attached to the motor shaft, and tie another knot. (Once again, either use super glue or a lighter to prevent the knot from working loose)

1. The string is now properly strung.

2. Re-attach the claw assembly to the crane assembly using (2) bolts removed in step 4

3. Re-install the crane assembly into the game and set it in the home position with the claw assembly hanging outside the prize fence.

NOTE: It is important that the claw assembly is "hanging" to provide proper tension on the string while being rewound

MOTOR REPLACEMENT

1. Remove all A.C power from the game.

2. Unlock and open front door.

3. Remove crane and or wagon assembly as detailed above. **NOTE:** What is removed depends on which motor has gone bad.

4. Loosen two thumb screws securing crane housing cap in place and remove. **NOTE:** This step is only for the 2 motors in the crane assembly.

5. Remove drive o-rings and wheels from bad motor.

6. De - solder the motor leads from the bad motor. **NOTE:** Be sure to note which wire goes to which motor lead, for if they are re - installed backwards the motor will run opposite of its intended direction.

7. Carefully remove bronze bushing supporting the motor shaft of the bad motor. **NOTE:** This is only for the 2 motors in the crane assembly.

8. Remove the 4 bolts securing the motor to the housing.

9. Carefully remove the bad motor.

10. Re-assemble in reverse order using new motor. **NOTE:** DO NOT OVER TIGHTEN MOTOR TO HOUSING THIS COULD CAUSE BINDING . INSTEAD, INSTALL MOTOR LOOSELY AND THEN PLACE A DROP OF THREAD LOCKER AT THE END OF EACH OF THE (4) BOLTS TO PREVENT BOLTS FROM BACKING OUT.

FUSE REPLACEMENT

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE OF FUSE HAVING THE SAME ELECTRICAL RATING.

AREA	LOCATION	AMP	VOLT
MAIN BOARD	F2	6 MDQ	250
	F3	3 MDQ	250
	F4	4 MDQ	250
	F5	4 MDQ	250

POWER MOD -- 3 MDQ 250

CORD REPLACEMENT

IF THE SUPPLY CORD IS DAMAGED, IT MUST BE

PARTS LISTING

MECHANICAL PARTS

8011 SPRING
CP1002 LEFT REAR CORNER
CP1003 RIGHT REAR CORNER
CP1004 CABINET FRAME
CP1005 DOOR PANEL
CP1006 DOOR FRAME
CP1007 PRIZE DOOR
CP1008 SIDE PANEL
BC1011 SIDE WINDOW RETAINER
CP1013 LOCK CAM
CP1014 UPPER LOCK ROD
CP1015 LOWER LOCK ROD
BC1016 DOOR WHEEL BRACKET
CP1017 DOOR WINDOW FRAME TOP
CP1018 PODIUM
BC1022 REAR CORNER CAP
CP1023 DOOR SEAL
CP1025 FRONT WINDOW VALENCE
CP1019 REAR CABINET RAIL
CP1020 FRONT CABINET RAIL
CG1052 3" SWIVEL CASTER
CG1055X WAGON ASSEMBLY
CG1061X CRANE ASSEMBLY
CG1054 WAGON ROLLER SHAFT
CG1069X TRACT MOUNT RAIL ASSEMBLY
CG2008 MOTOR / GEARBOX
CG3019X THUMB SCREW
CG3030 WHEEL
CG4003 O-RING DRIVE BAND
CG1062 CRANE MOTOR HOUSING CAP
CG1066 CRANE UP SPRING
CG1070 COIL HOUSING
CG1073 COIL SLIDER
CG1075 COIL PLUNGER
CG1078G ATOMIC CLAW
CG3036 COIL CLAW INTERCONNECT
CG3037 CLAW SPIDER
CG4004 STRING
CG2014 JOYSTICK
CG3008 MICRO TRACK 56 LINK
CG3009 MICRO TRACK 35 LINK
CG3013 COIN FUNNEL
CP3026 MIRROR
CP3027 FRONT GLASS
CP3028 SIDE GLASS
CG5014 LOCK T- HANDLE
CG5015 LOCK BARREL
CP9001 SERVICE MANUAL

CP7027 DECAL SIDE MARQUEE
CP7012 DECAL CONTROL PANEL JOY
CP7027 DECAL FRONT MARQUEE
CP7005 DECAL LOWER LEFT SIDE
CP7006 DECAL LOWER RIGHT SIDE
CP7003 DECAL FRONT DOOR 4 PCS
CP7001 DECAL PRIZE DOOR
CP7008 DECAL LOWER LEFT WINDOW
CP7007 DECAL LOWER RIGHT WINDOW
CP7004 DECAL PODIUM 4 PCS
CP7009 DECAL TILT WARNING
CP7010 DECAL 3PLAYS/\$0.50 ETC.
CP7002 DECAL MIRROR

ELECTRICAL PARTS

8195 TRI - PHORPORUS BULB
2970 DOOR SWITCH
LP2007 4 X 10" SPEAKER
CG2012 F/B, UP, DOWN SENSOR
CG2013 L/R SENSOR
CG2010 F/B, UP, DOWN ACTUATOR
HH1020 L/R ACTUATOR
CG3038X SOLENOID ASSEMBLY
CG2002 TRANSFORMER
CP2032X DISPLAY PCB
CG2034X MAIN PCB
2080 BRIDGE RECT. 10 AMP 400V
208004 VOLTAGE REG IC LM338K
2110 TRANSISTOR TIP 122
2124 VOLTAGE REG IC LM 358
CG2039X PRIZE SENSOR PCB
HD20224 5 V COUNTER
CG2600 DBV MARS SERIES 2000
CP3005 ABS FRONT CORNER VALANCE
CP3006 ABS REAR CORNER VALANCE

DECALS

GAME REPAIR

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

TROUBLESHOOTING PHILOSOPHY

To find problems with the game, always check the obvious first. See that the game is plugged in, and that all of the fuses are good.

Next, check to see that all of the connectors are firmly seated, and that no wires have been pulled out.

When trying to find out if specific components are bad or not, try swapping them with components from another CHOCOLATE FACTORY™ crane game (if available) to see if the problem moves with the component, or stays where it was. This will help you decide 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 checking continuity, it is important to disconnect the harnessing at both ends, as attached they may yield erroneous results.

If a p.c. board is suspected as causing your problems, check to see that all of the I.C. chips are firmly seated on the board.

MAIN P.C. BOARD REPLACEMENT

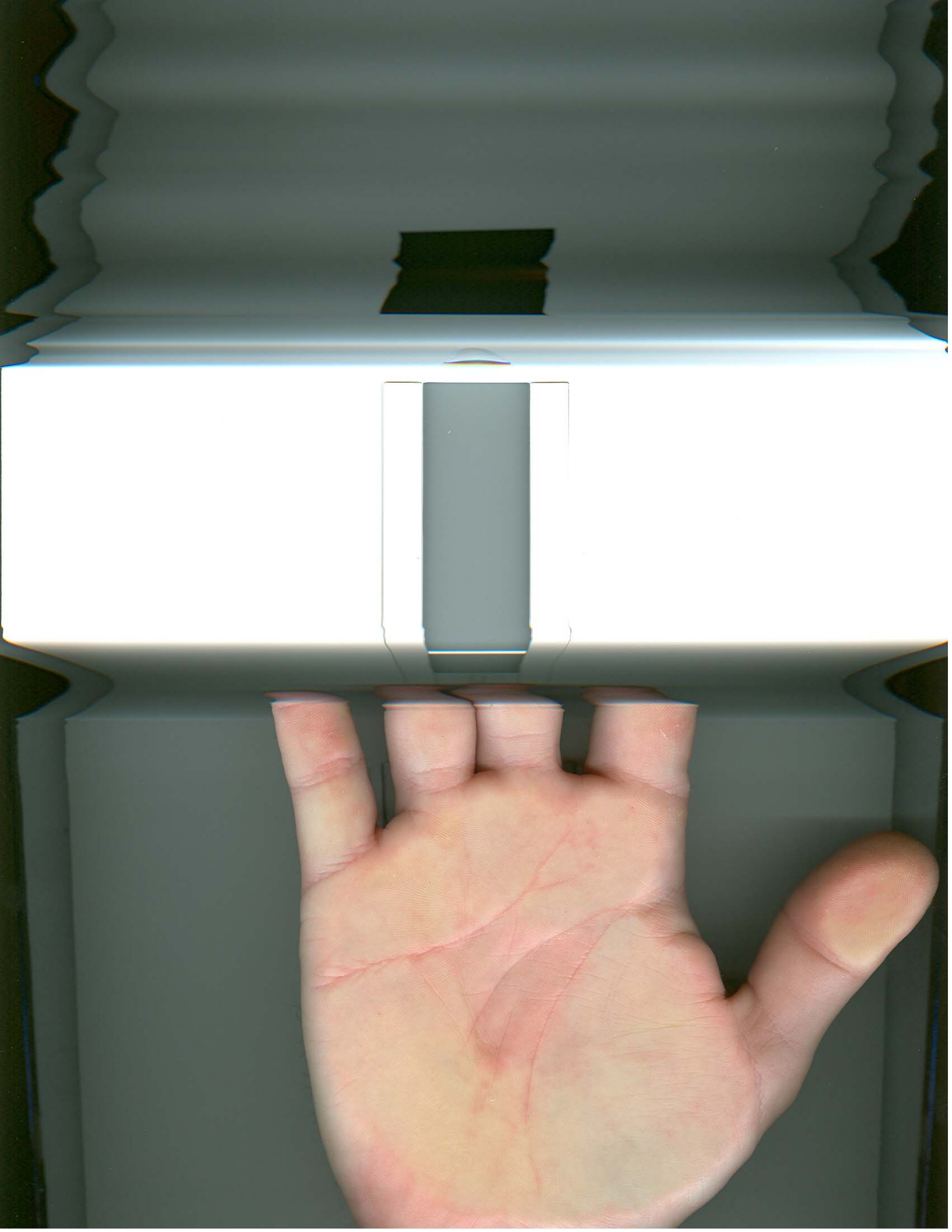
1. Remove all A.C. power from the game.
2. Unlock and open front door.
3. Carefully remove all of the connectors from the main p.c. board.
4. Remove the 4 long plastic hexagon nuts that secure the board to the main board housing.
5. Gently pull the p.c. board from the mounting studs.
6. Reassemble in the reverse order using a new main p.c. board.

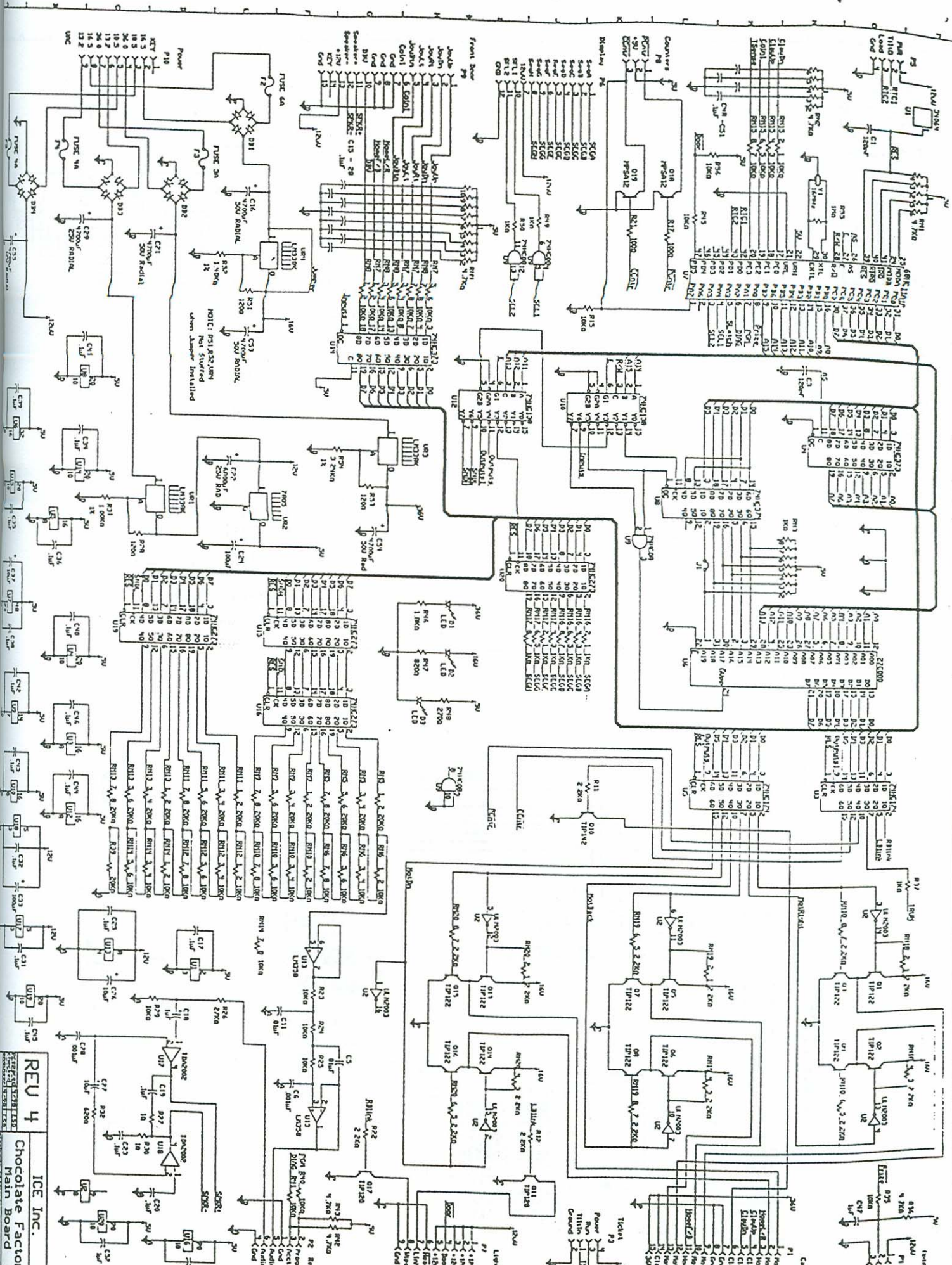
FRONT GLASS REPLACEMENT

1. Remove all A.C. power from the game.
2. Remove the (3) 10-24 carriage bolts holding the top glass frame in place.
3. Loosen the (5) 1/4-20 kep nuts holding side glass retainer in place and slide retainers back.
4. Loosen and remove the (2) self tapping screws holding the bottom glass retainer/ window valence in place.
5. If the glass is broken, be sure to remove all pieces from where the new glass will rest.
6. With proper ceiling height, slide the new glass in from the top. NOTE: Be careful to properly align the glass with the side channels to prevent breakage.
7. When glass is properly seated, slide the side glass retainers into place and tighten the (5) 1/4-20 kep nuts for each side.
8. Re-install the bottom glass retainer and tighten into place via. the (3) self tapping screws.
9. Re-install the top window frame and tighten into place via. the (3) 10-24 carriage bolts.

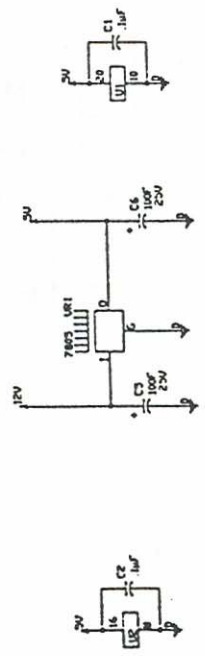
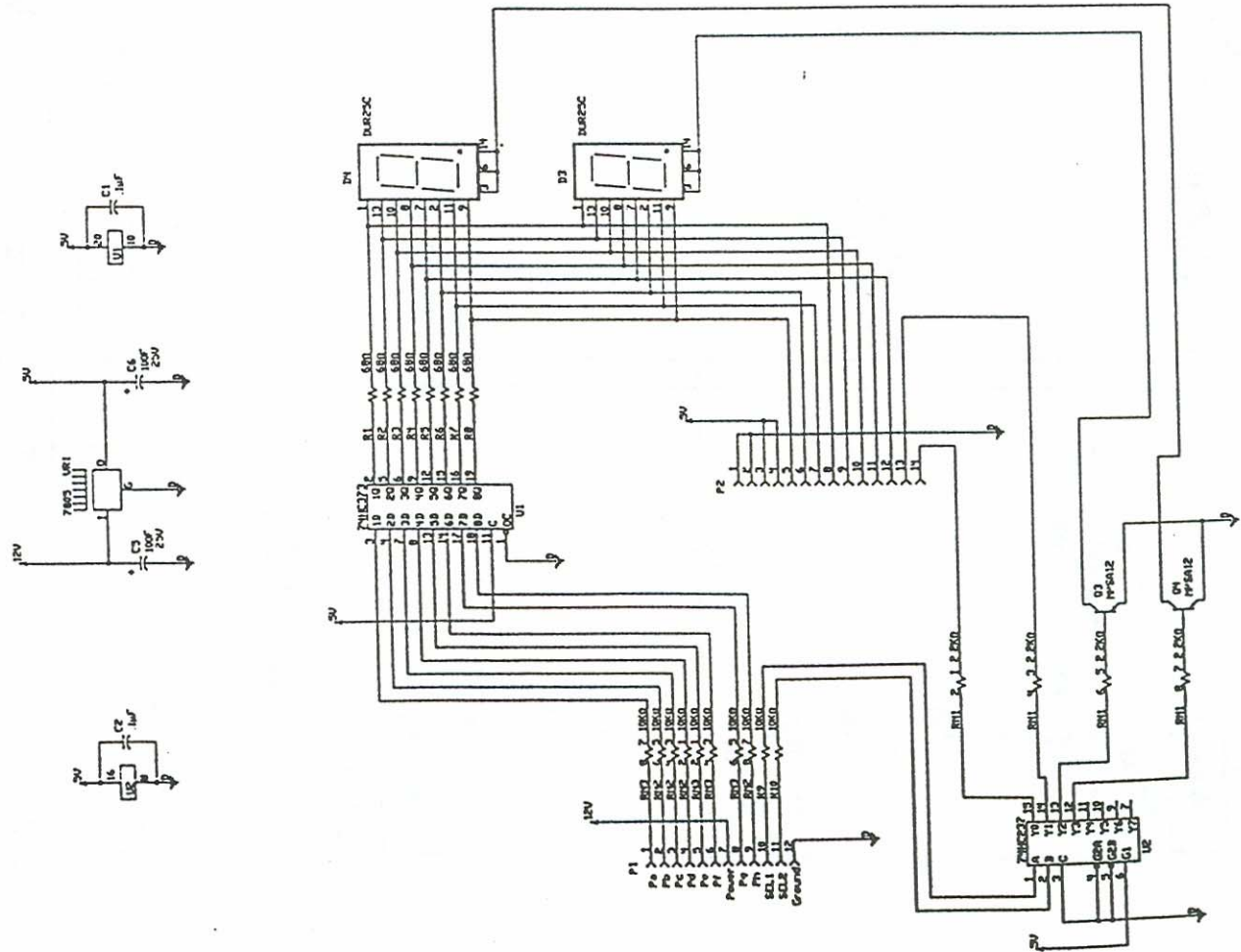
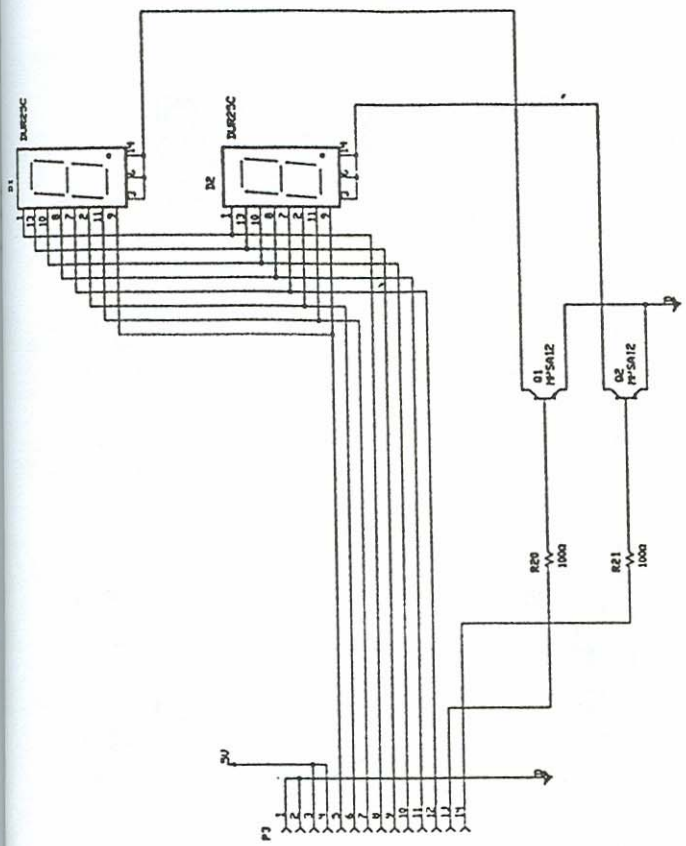
SIDE GLASS REPLACEMENT

1. Remove all A.C. power from the game.
2. Remove wagon and crane assemblies.
3. Remove front and rear cabinet rails and hardware.
4. Remove fluorescent light fixtures.
5. Remove (2) side window retainers and (1) top window retainer.
6. Remove playfield and supports if necessary.
7. Back out long 1/4-20 bolts that hold on the side window retainers so they are flush with the 1" tube frame.
8. Install new glass from the inside of the game
9. Re-install lights and all brackets in reverse

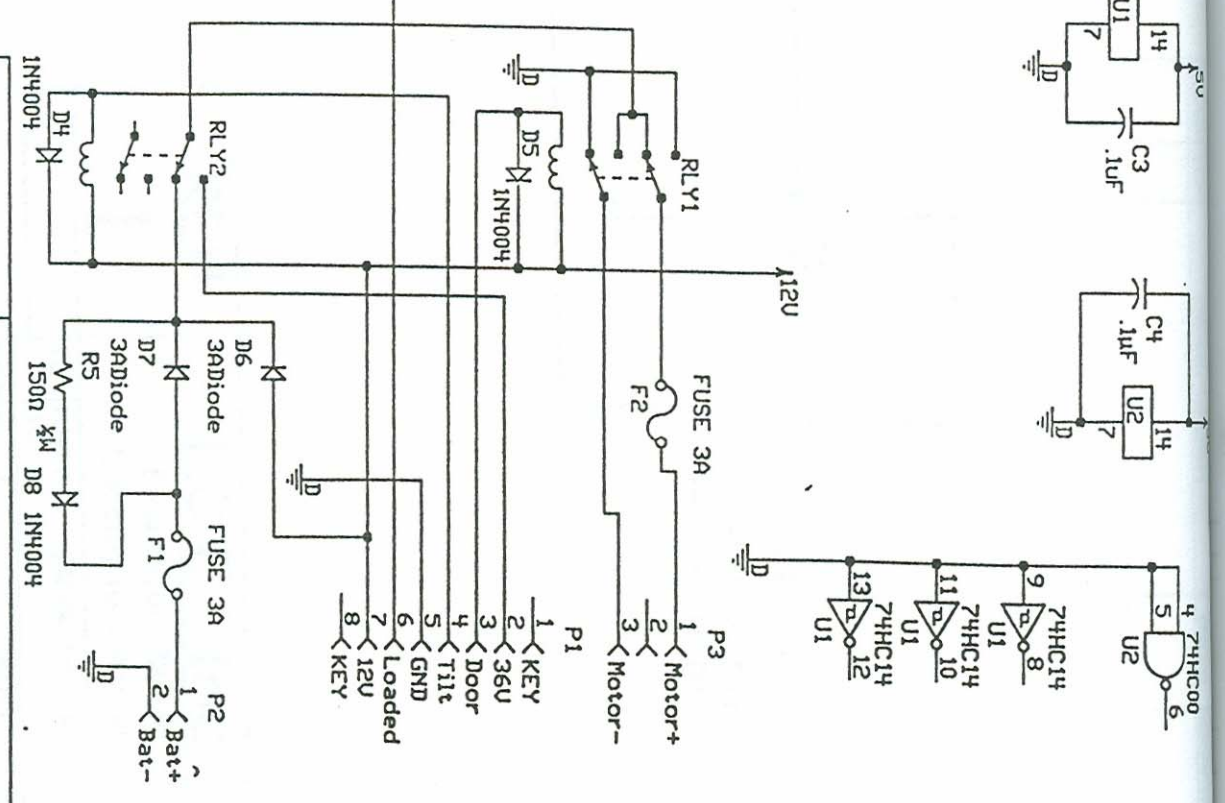
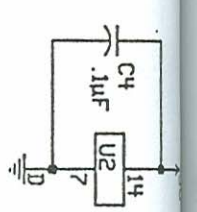
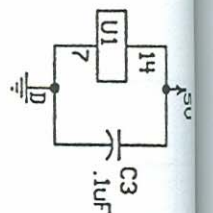
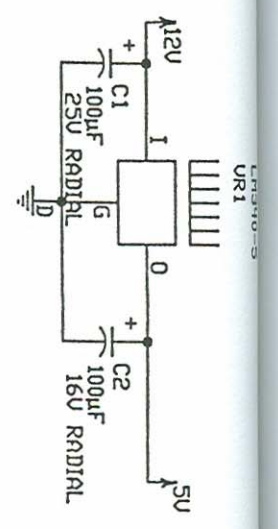
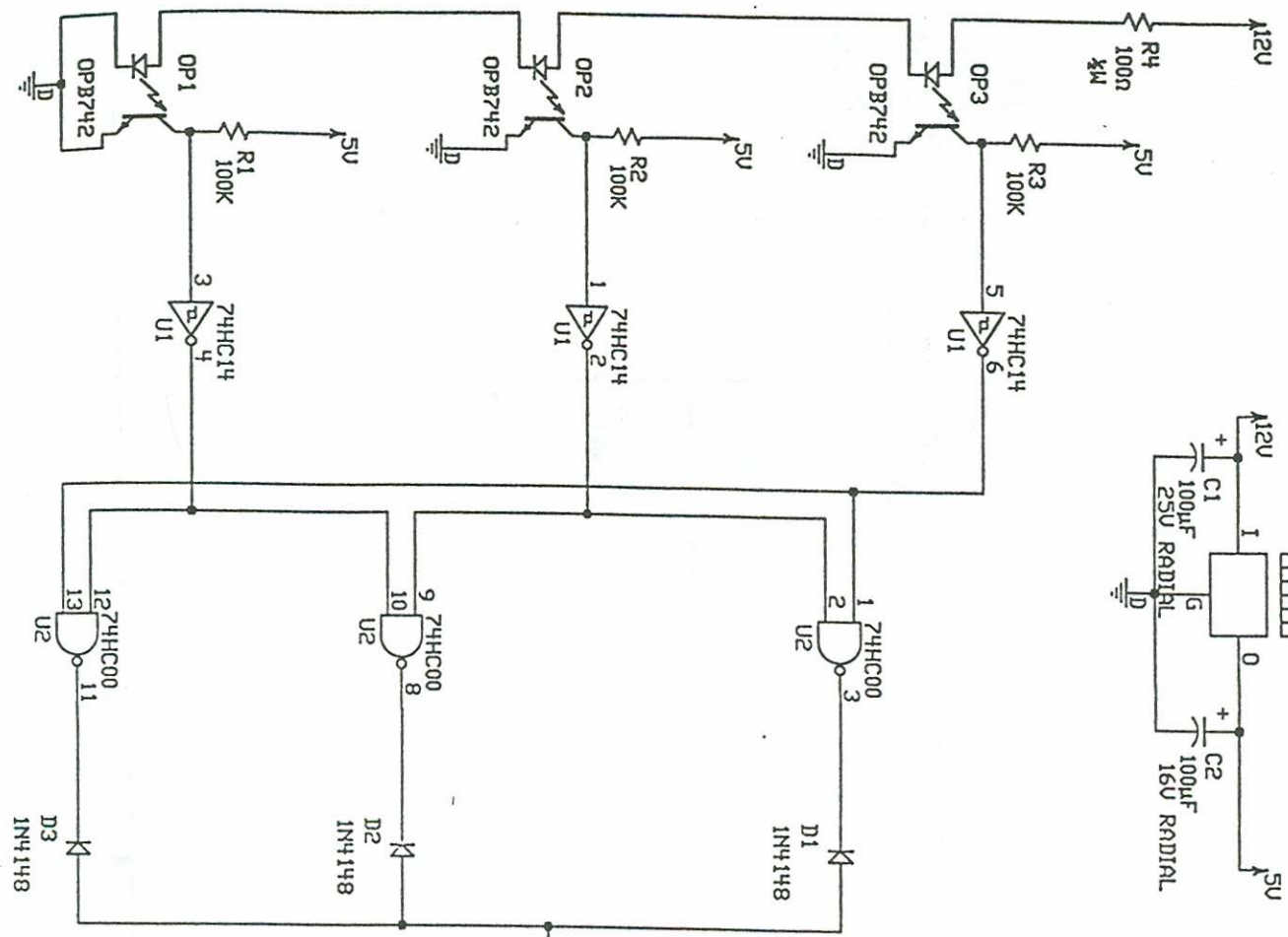




REV 4
ICE INC.
Chocolate Factor
Main Board



REV 3
 I.C.E. Inc.
 Display Board
 Crane Game
 CR2032
 Sheet 1 of 2

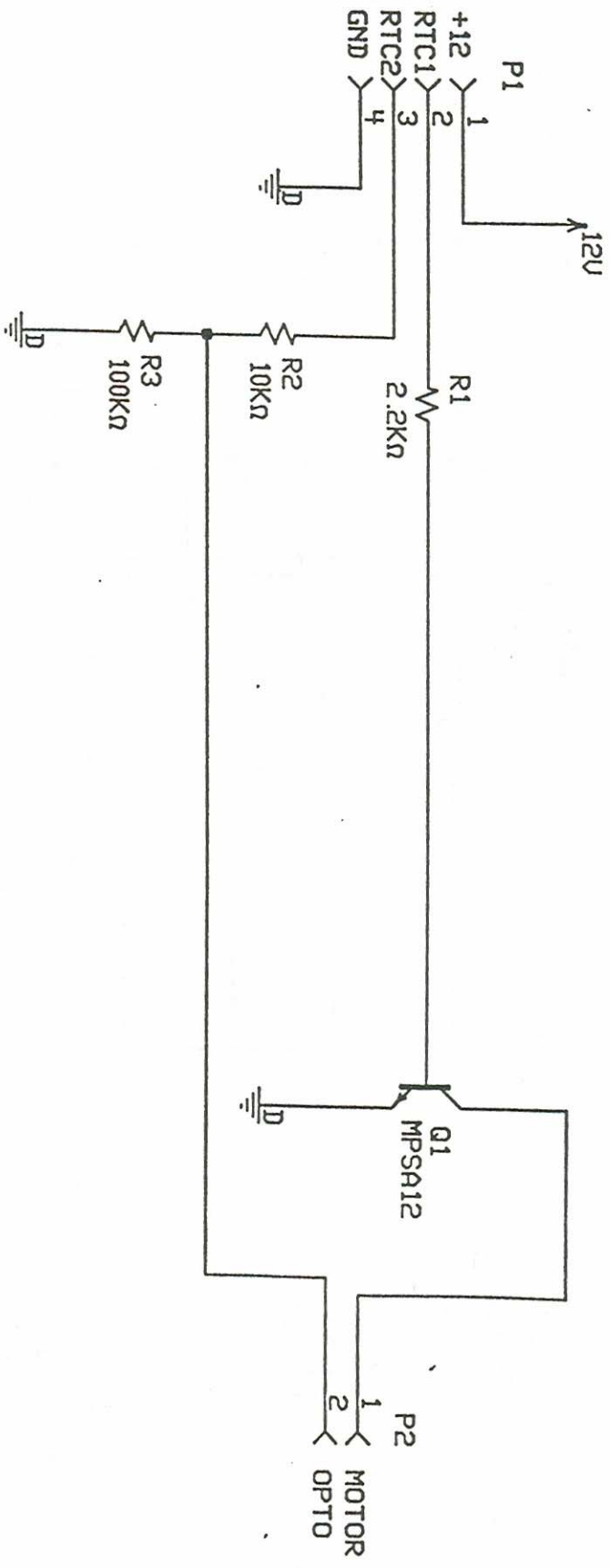


Rev 1

Prepared	ESD	7/99
Checked	ESD	7/99
Engineer	ESD	7/99

I.C.E. Inc.
Chocolate Factory
Sensor Board

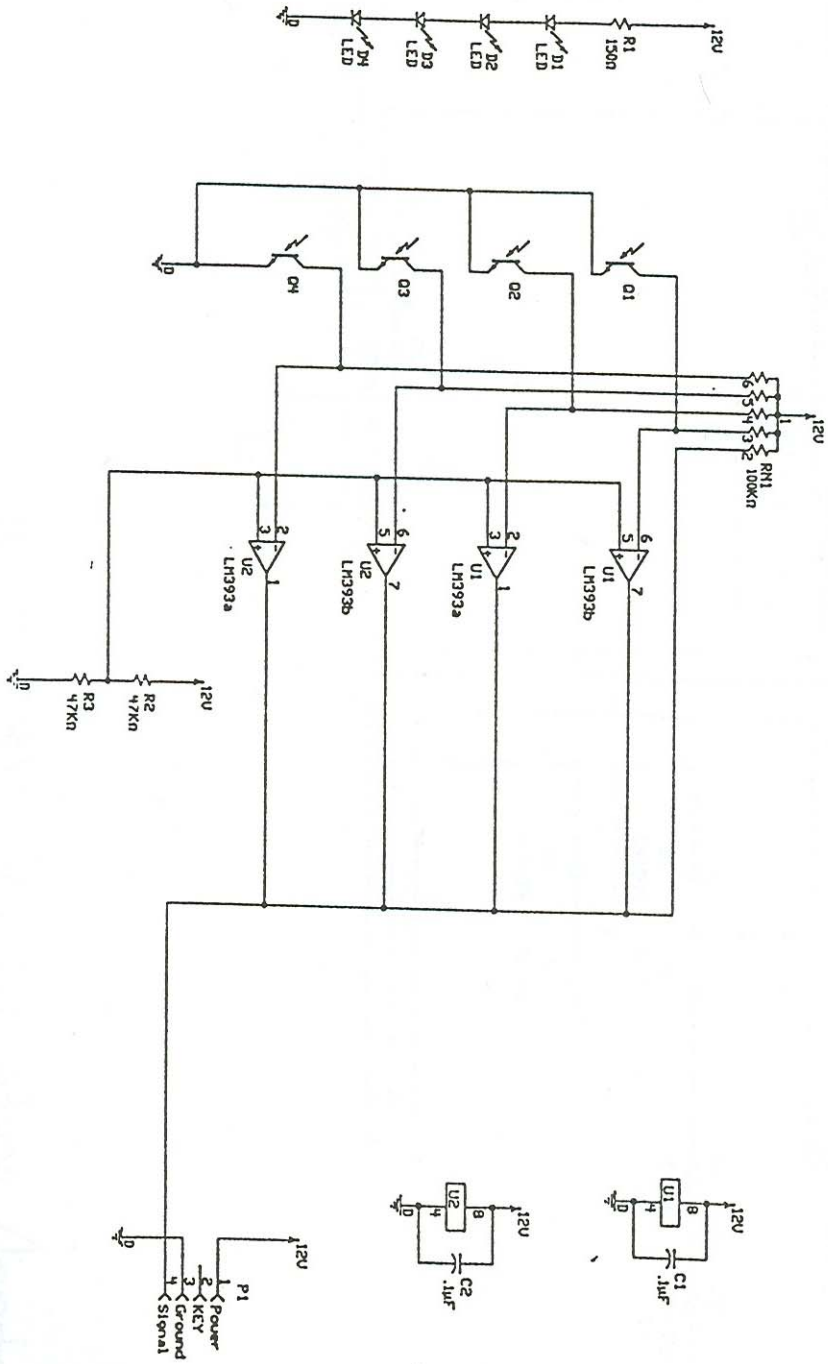
size	code	id	drawing no.
A			
scale			
sheet 1 of 1			



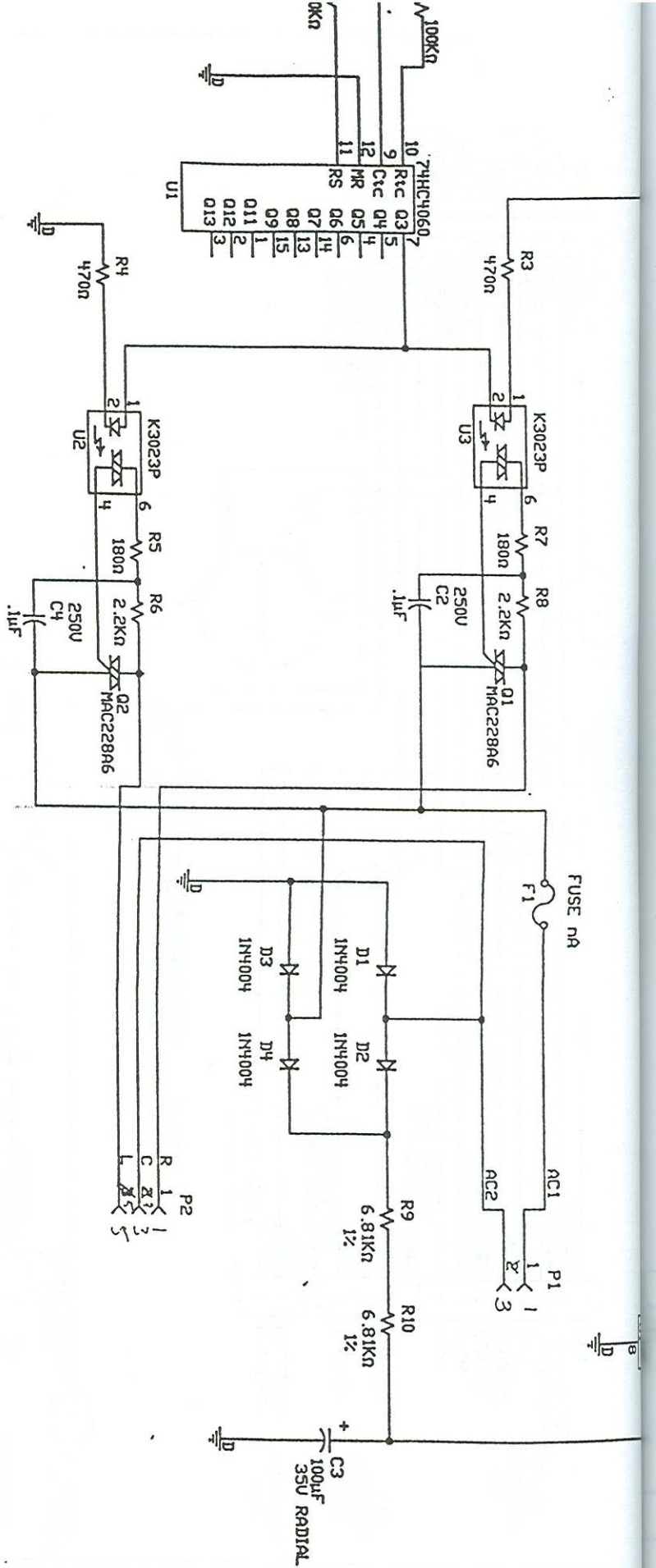
REV
1

I.C.E. Inc.
Extension Board
Chocolate Factory

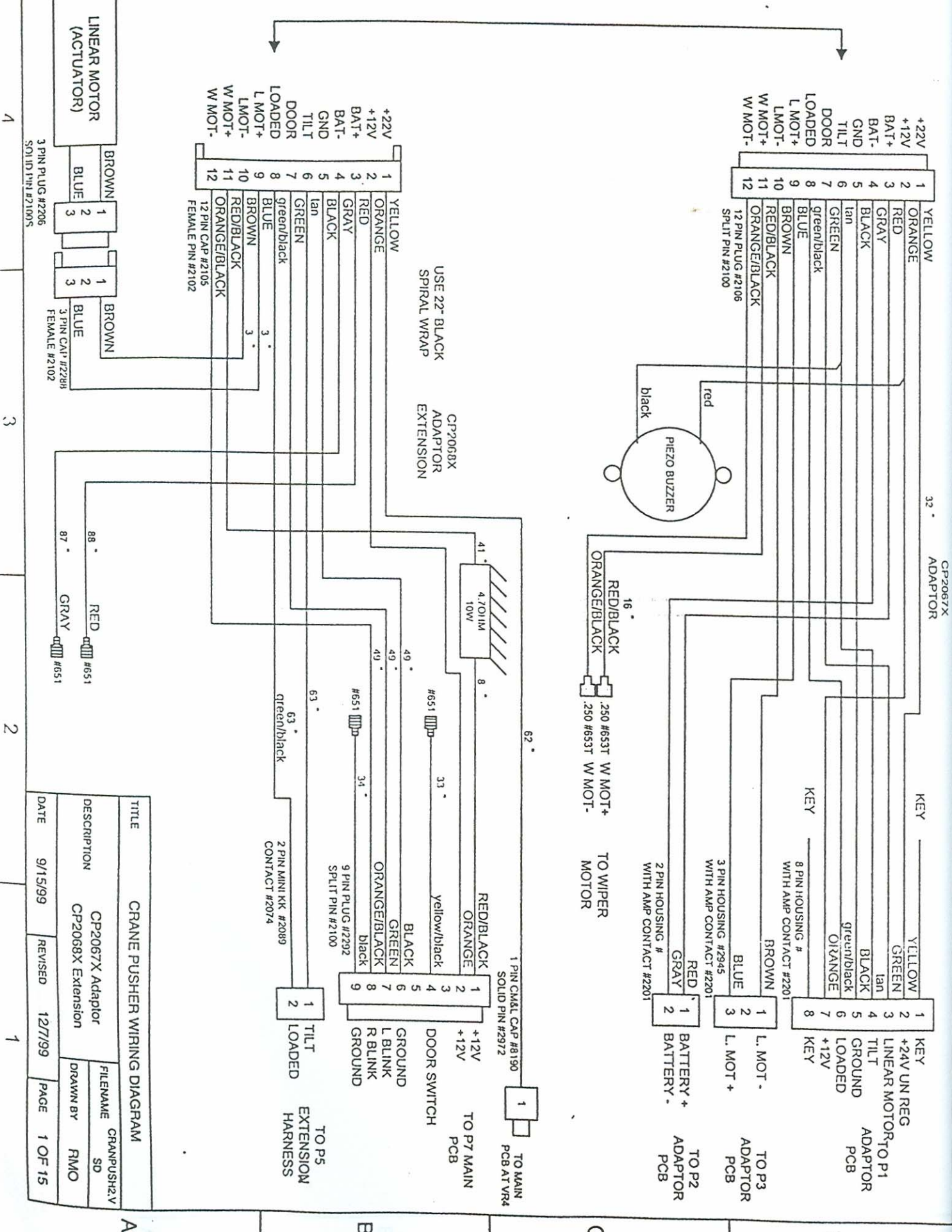
sz	ident	drawing no.	scale	sheet 1 of 1



REV A		I.C.E. INC.	
Prepared ESD 7/99	Checked ESD 7/99	Chocolate Factory	
Engineer ESD 7/99	Engineer ESD 7/99	Prize Sensor	
size/code id/drawing no.		A	
scale		sheet of 1	



2033X - Light Rope Controller Board Assy



CRANE PUSHER WIRING DIAGRAM			
TITLE	FILENAME	DATE	REVISION
CP2067X Adaptor	CRANPUSH2.V	9/15/99	
CP2068X Extension	SD	12/7/99	
	FMO		1 OF 15

A

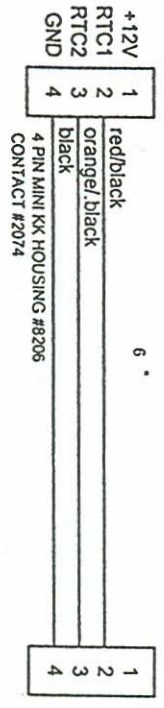
B

C

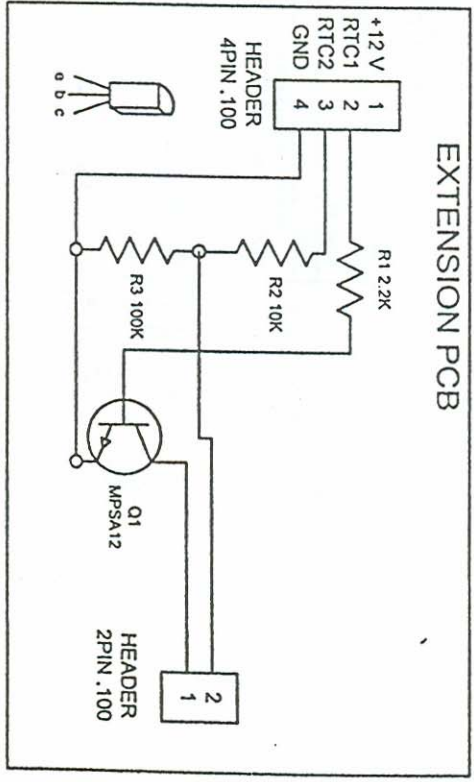
D

CP2071X
P5 HARNESS

TO P5
MAIN PCB



EXTENSION PCB



TO ADAPTOR
EXTENSION

CRANE PUSHER WIRING DIAGRAMS

FILENAME CRANPUSH2.VSD
DRAWN BY RMO

EXTENSION P5 EXTENSION HARNESS AND PCB

DATE 9/15/99 REVISION 12/7/99 PAGE 2 OF 15

1 3

2

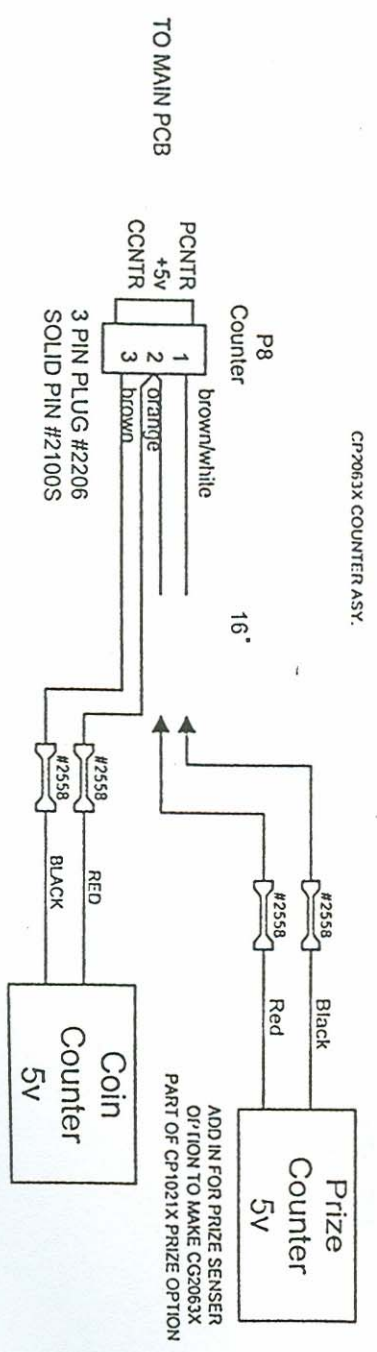
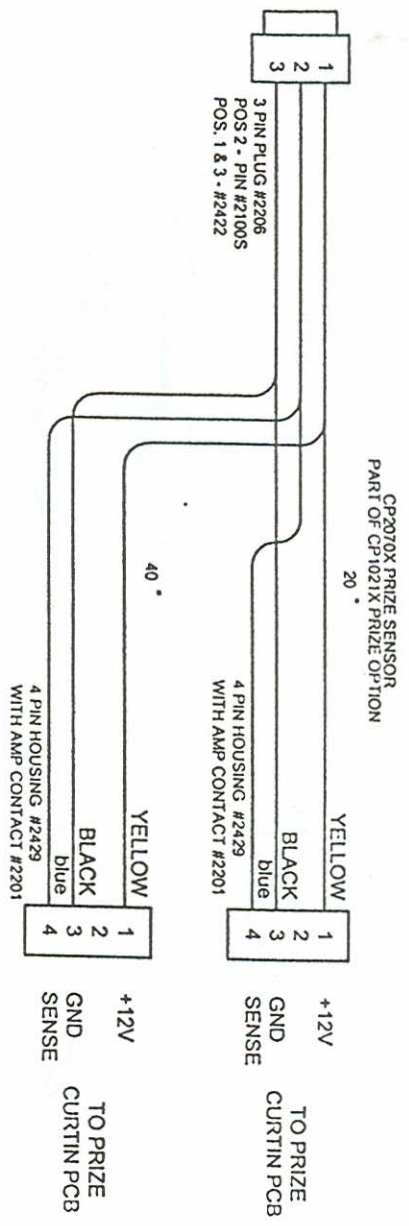
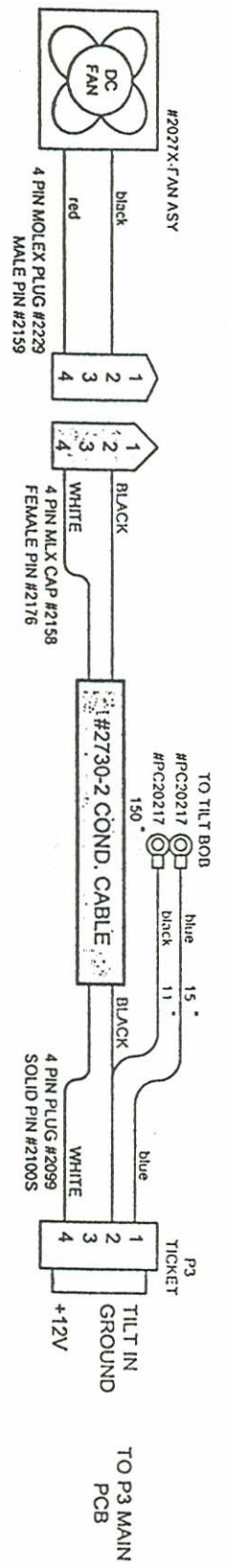
1

A

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CRANE PUSHER WIRING DIAGRAM

CP2062X FAN/TILT	FILENAME	CRANPUSH2.VSD
CP2070X PRIZE SENSE	DRAWN BY	RMO
CG2063X COUNTER		

9/15/99 REVISED 12/7/99 PAGE 3 OF 15

A

B

C

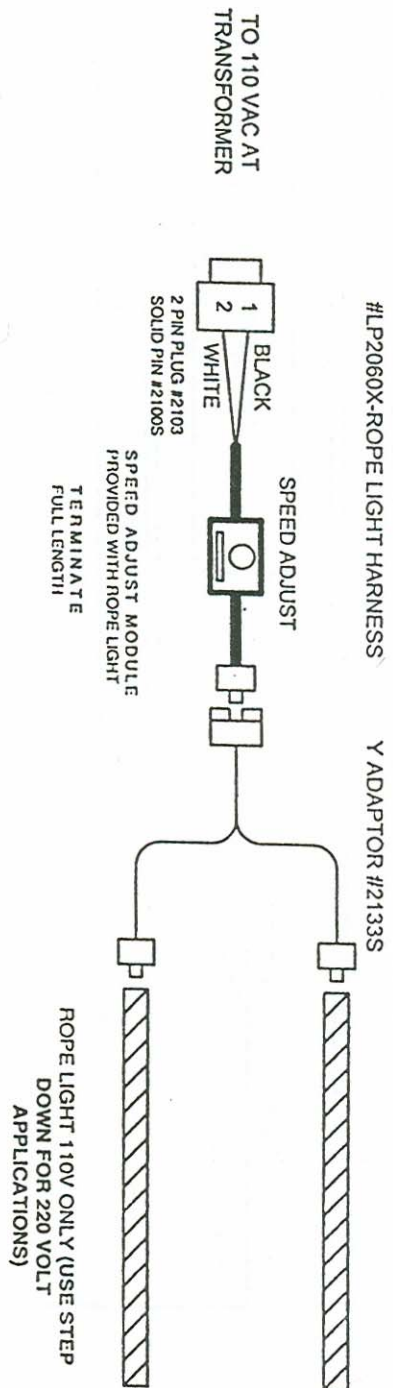
D

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CRANE PUSHER WIRING DIAGRAM

ROPE LIGHTING

FILENAME CRANPUSH2.VSD

DRAWN BY RMO

9/15/99 REVISED 12/7/99 PAGE 4 OF 15

1

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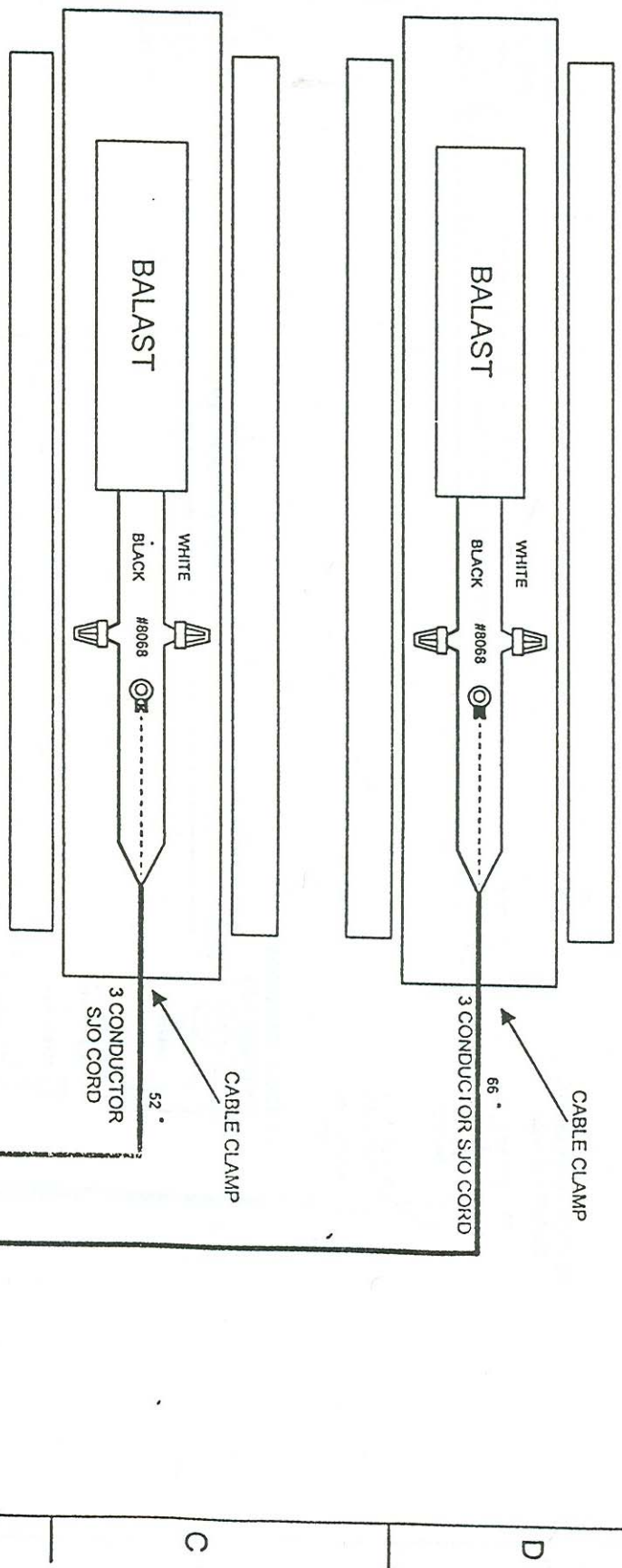
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A

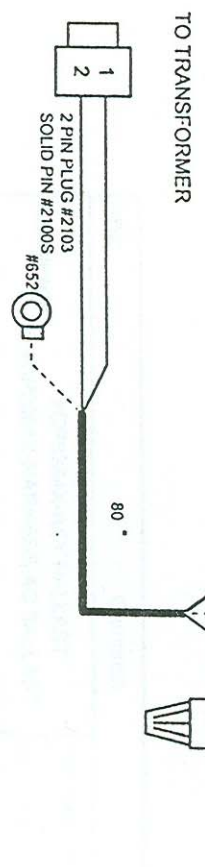
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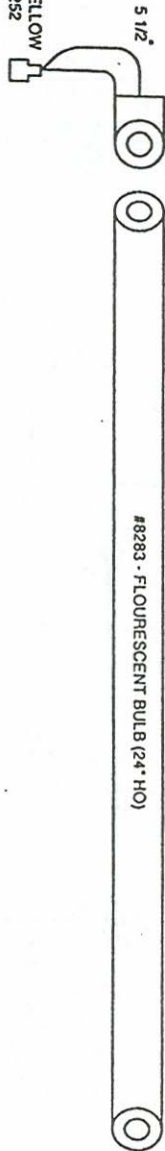
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DESCRIPTION	#CP8194X- FLOURESENT LAMP ASY	FILENAME CRANPUSH2.VSD DRAWN BY RMO
DATE	9/15/99	REVISED 12/7/99
		PAGE 5 OF 15



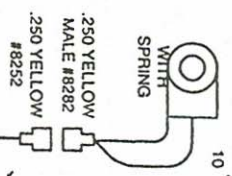
4 3 2 1

A B C D

#DD8239TX-SOCKET
ASY (TOP LAMP)



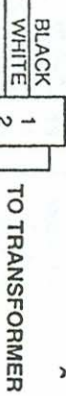
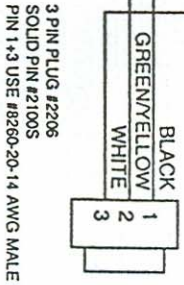
#DD8239SX-SOCKET
ASY W/SPRING



#DD8239BX-SOCKET
ASY (BOTTOM LAMP)



#CP2081X- AC BALLAST HARNESS



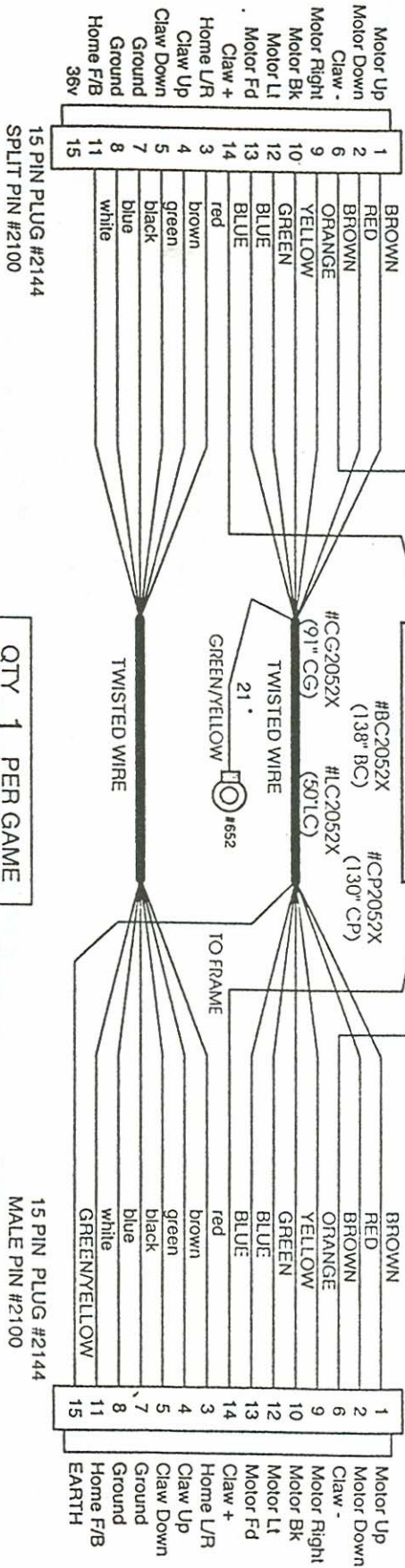
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Cranpush	9/15/99	REVISED	4/18/00	16 OF 16
#CP8284X-ASY BALLAST				
#CP2081X-HARNESS AC BALLAST				
FILENAME CRANPUSH2.VSD				
DRAWN BY RMO				

4 3 2 1

TO MAIN PCB
P1
CARRIAGE

MAIN TO WAGON LOWER HARNESS

TO WAGON
HARNESS

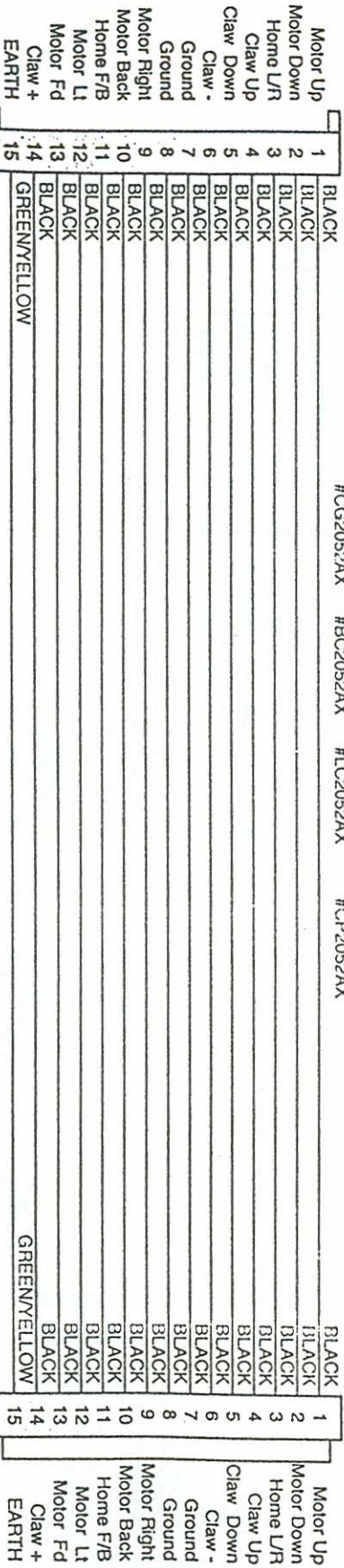


15 PIN PLUG #2144
MALE PIN #2100

TO WAGON
EXTENSION

MAIN TO WAGON UPPER HARNESS **BEND THIS END
#1 PIN IS DOWN

TO WAGON TO
CRANE
HARNESS



15 PIN CAP #2367
FEMALE PIN #2102

15 PIN PLUG #2144
MALE PIN #2100

NOTE:
PRIOR TO 1/7/99
THIS HARNESS WAS
PART OF THE WAGON
EXTENSION HARNESS

NOTE:
PRIOR TO 9/11/98
THIS CONNECTOR
WAS A 15 PIN MINI
PLUG W/ FEMALE
PINS

CRANE PUSHER WIRING DIAGRAM

QTY 1 PER GAME

DATE	9/15/99	REVISED	3/16/00	PAGE	3 OF 15
DESCRIPTION	CP2052AX Main/Wagon Upper		FILENAME		CRANPUSH2.VSD
	CP2052X Main/Wagon Lower		DRAWN BY		RMO

4

3

2

1

A

B

C

D

TO MAIN TO
WAGON
HARNES

34.5" (CUT 36")
CG2053X
BC

30" (CUT AT 32")
LC2053X

TO CRANE
HARNES

- 1 BLACK
- 2 BLACK
- 3 BLACK
- 4 BLACK
- 5 BLACK
- 6 BLACK
- 7 BLACK
- 8 ORANGE
- 9 BLACK
- 10 BLACK
- 11 GREEN
- 12 BLACK
- 13 BLACK
- 14 BLACK
- 15 GREEN/YELLOW

- 1 Motor Up
- 2 Motor Down
- 3 Home LR
- 4 Claw Up
- 5 Claw Down
- 6 Claw -
- 7 Ground
- 8 Motor Right
- 9 Motor Bk
- 10 Home/FB
- 11 Motor Lt.
- 12 Motor Fd.
- 13 Claw +
- 14 Shield
- 15

- 1 BLACK
- 2 BLACK
- 3 BLACK
- 4 BLACK
- 5 BLACK
- 6 BLACK
- 7 BLACK
- 8 BLACK
- 9 BLACK
- 10 BLACK
- 11 BLACK
- 12 GREEN/YELLOW
- 13 GREEN/YELLOW
- 14 GREEN/YELLOW
- 15 GREEN/YELLOW

- 1 12 Pin Plug #2106
- 2 12 Pin Plug #2106
- 3 12 Pin Plug #2106
- 4 12 Pin Plug #2106
- 5 12 Pin Plug #2106
- 6 12 Pin Plug #2106
- 7 12 Pin Plug #2106
- 8 12 Pin Plug #2106
- 9 12 Pin Plug #2106
- 10 12 Pin Plug #2106
- 11 12 Pin Plug #2106
- 12 12 Pin Plug #2106

- 1 GREEN/YELLOW
- 2 GREEN/YELLOW
- 3 GREEN/YELLOW
- 4 GREEN/YELLOW
- 5 GREEN/YELLOW
- 6 GREEN/YELLOW
- 7 GREEN/YELLOW
- 8 GREEN/YELLOW
- 9 GREEN/YELLOW
- 10 GREEN/YELLOW
- 11 GREEN/YELLOW
- 12 GREEN/YELLOW

- 1 15 Pin Cap #2367
- 2 15 Pin Cap #2367
- 3 15 Pin Cap #2367
- 4 15 Pin Cap #2367
- 5 15 Pin Cap #2367
- 6 15 Pin Cap #2367
- 7 15 Pin Cap #2367
- 8 15 Pin Cap #2367
- 9 15 Pin Cap #2367
- 10 15 Pin Cap #2367
- 11 15 Pin Cap #2367
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- 1 15 Pin Cap #2367
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- 11 15 Pin Cap #2367
- 12 15 Pin Cap #2367

- 1 15 Pin Cap #2367
- 2 15 Pin Cap #2367
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- 4 15 Pin Cap #2367
- 5 15 Pin Cap #2367
- 6 15 Pin Cap #2367
- 7 15 Pin Cap #2367
- 8 15 Pin Cap #2367
- 9 15 Pin Cap #2367
- 10 15 Pin Cap #2367
- 11 15 Pin Cap #2367
- 12 15 Pin Cap #2367

NOTE:
PRIOR TO 9/11/98
THIS CONNECTOR
WAS A 15 PIN MINI
CAP W/ MALE PINS

NOTE:SHIELD
REQUIRED FOR CE
GAMES ONLY

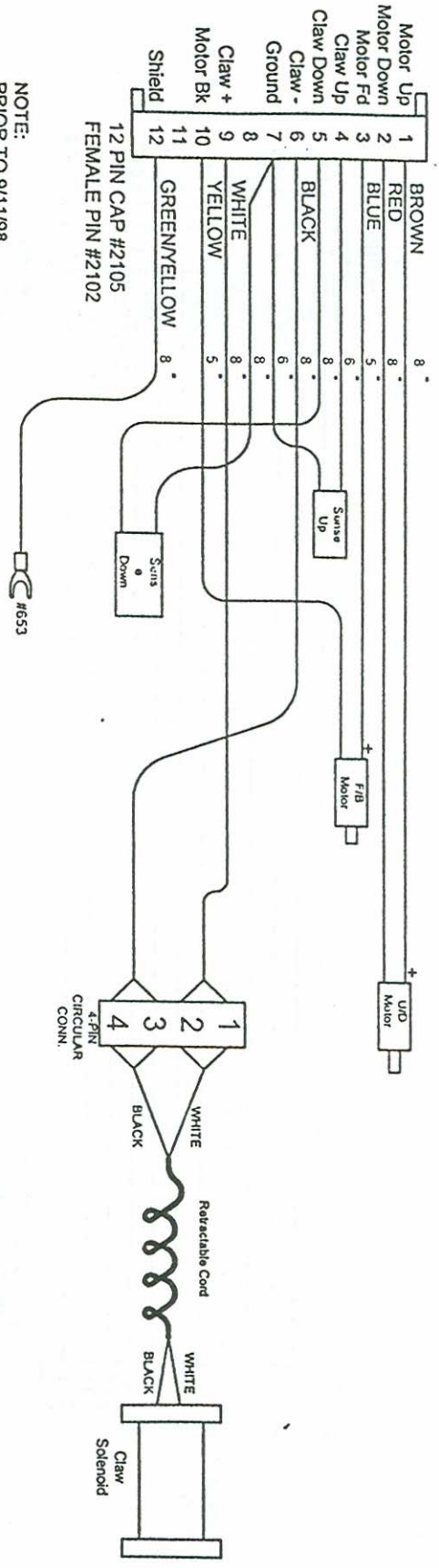
USE A #2422-14 AWG
MALE PIN WHEN
USING SHIELD
IN PIN 12.

NOTE:
PRIOR TO 9/11/98
THIS CONNECTOR
WAS A 12 PIN MINI
PLUG WITH MALE
PINS

QTY 1 PER GAME

TITLE	#CG2053X
DESCRIPTION	Wagon /Crane
FILENAME	CRANPUSH2.VSD
DRAWN BY	FMORMO

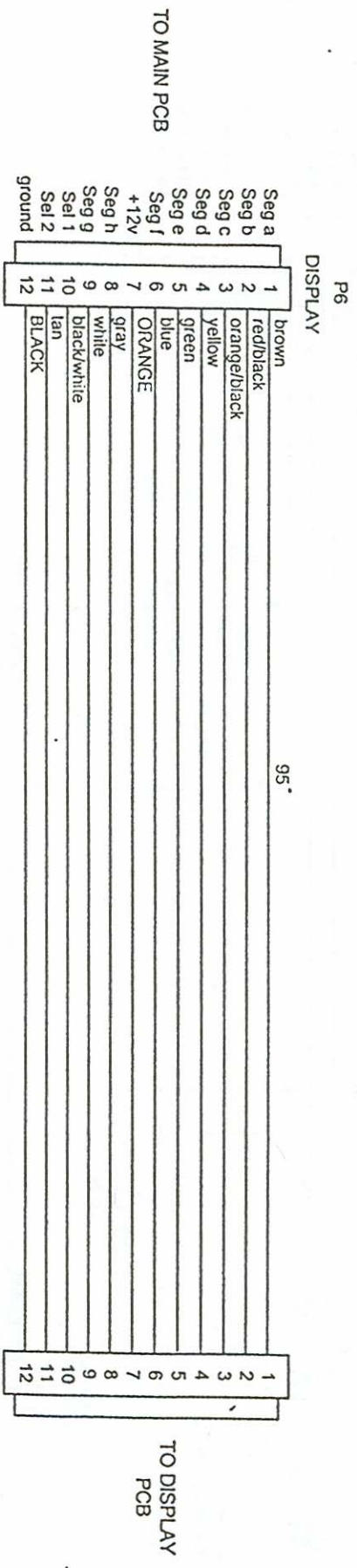
TO WAGON TO
CRANE
HARNES



NOTE:
PRIOR TO 9/11/98
THIS CONNECTOR
WAS A 12 PIN MINI
CAP WITH FEMALE
PINS

TITLE	CRANE PUSHER WIRING DIAGRAM	
DESCRIPTION	CG2056X Crane	FILENAME CRANPUSH2.VSD DRAWN BY RMO

QTY 1 PER GAME



12 PIN PLUG #2106
SPLIT PIN #2100

12 PIN PLUG #2106
SPLIT PIN #2100

QTY 1 PER GAME

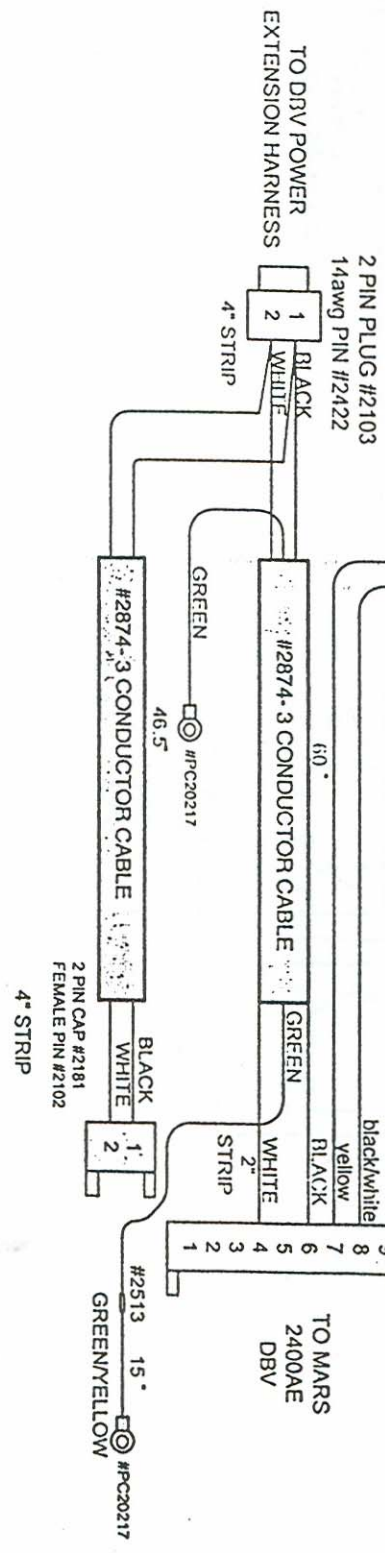
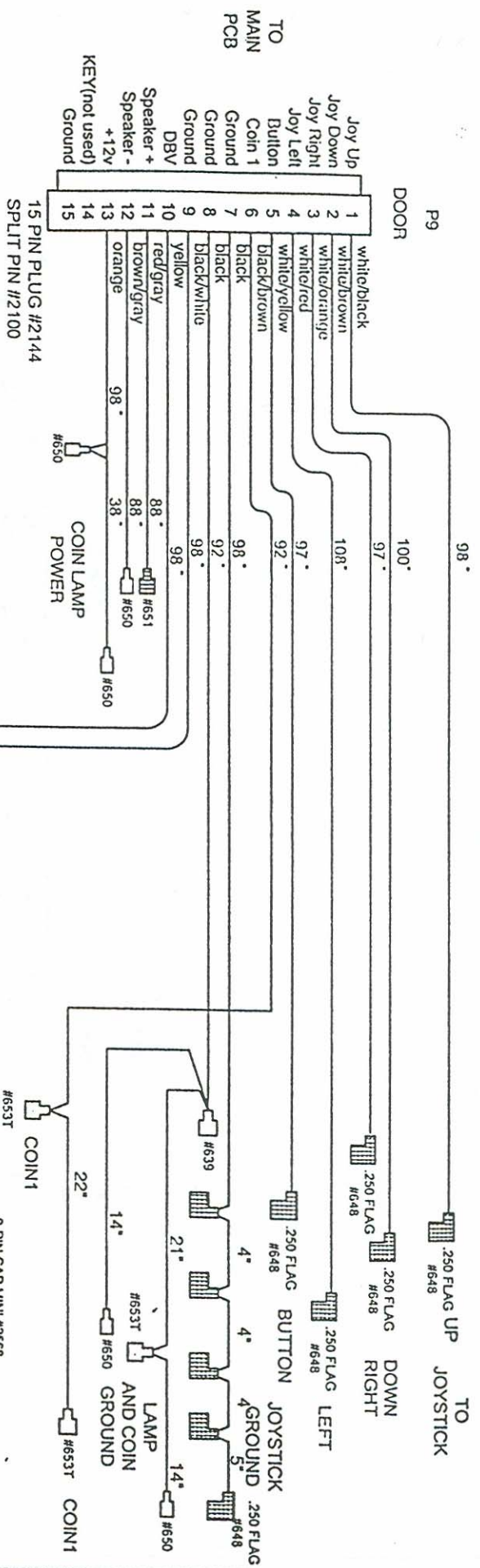
TITLE	CRANE PUSHER WIRING DIAGRAM	
DESCRIPTION	#BC2054X Display	FILENAME CRANPUSH2.VSD
DRAWN BY	RMO	

A

B

C

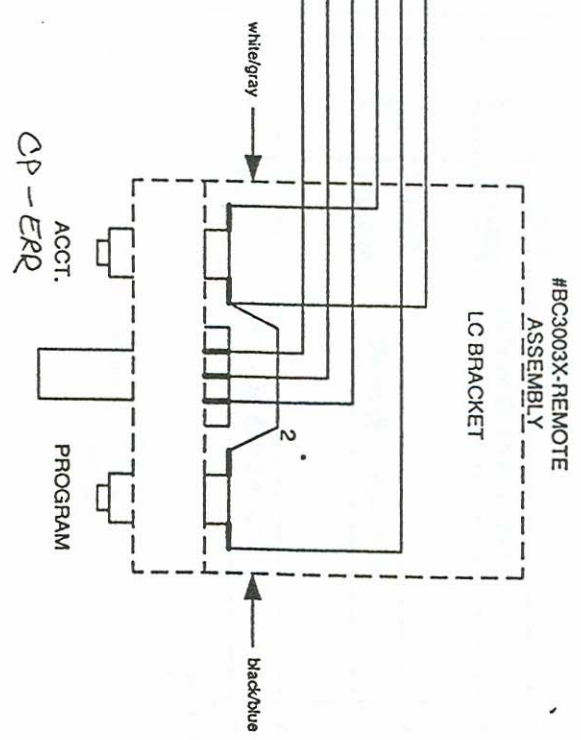
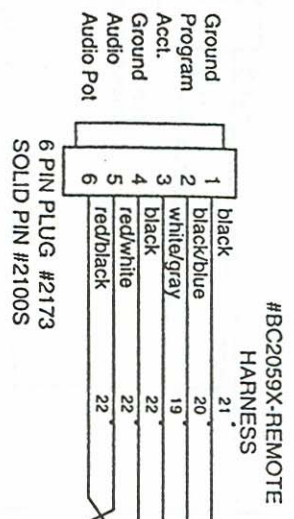
C



QTY 1 PER GAME

CRANE PUSHER WIRING DIAGRAM	
TITLE	CRANE PUSHER WIRING DIAGRAM
DESCRIPTION	#BC2050X Door
FILENAME	CRANPUSH2.VSD
DRAWN BY	RMO

DATE: 07/15/93 REVISED: 12/27/93 PAGE: 2 OF 15



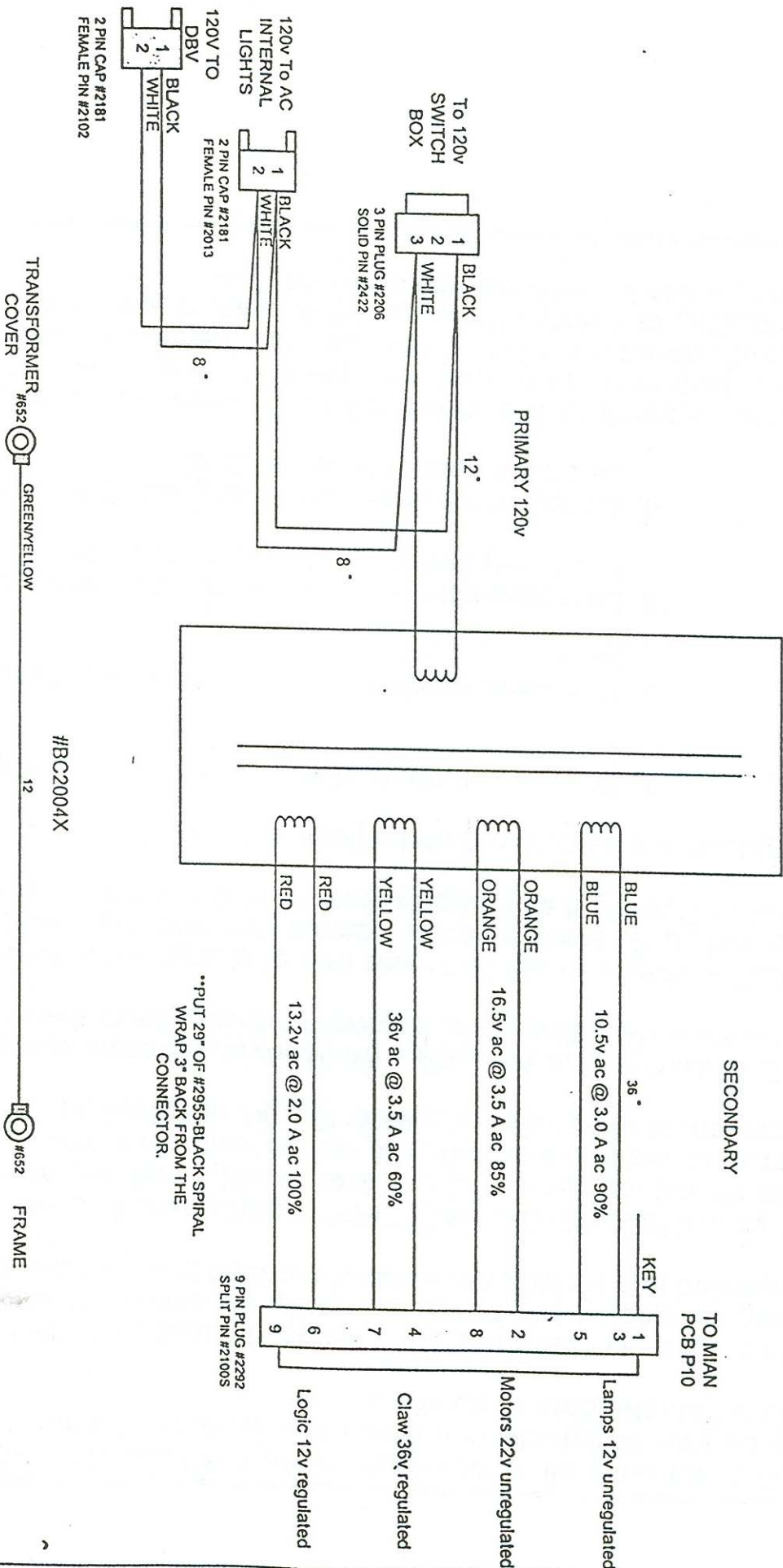
QTY 1 PER GAME

TITLE	BASIC CRANE#BC3003X	
DESCRIPTION	REMOTE ASSEMBLY	
DATE	9/22/00	REVISED
FILENAME	BASIC.VSD	
DRAWN BY	CMZCMZ	
PAGE	1 OF 6	

A B C D

A B C D

TRANSFORMER #CG2002
120V PRIMARY MCI# 2-51-9813



TITLE	CRANE PUSHER WIRING DIAGRAM	
DESCRIPTION	CG2002X 110 VAC Transformer	FILENAME CRANPUSH2.VSD
	CG2004X Ground	DRAWN BY RMO
DATE	07/15/99	REVISION
		12/7/99
		PAGE
		14 OF 15