

# **NAUGHTY BOY**

OPERATION AND MAINTENANCE  
MANUAL

CINEMATRONICS, INC.  
1841 FRIENDSHIP DRIVE  
EL CAJON, CA 92020  
(714) 562-7000

TELEX: CINEMAT ELCJ 697891  
CALL TOLL FREE: (800) 854-2666  
IN CALIFORNIA CALL: (714) 562-7000  
SALES: 8-5 (PST) WEEKDAYS  
SERVICE: 8-5 (PST) WEEKDAYS

NAUGHTY BOY  
GAME MANUAL

TABLE OF CONTENTS

	<u>PAGE</u>
FCC WARNING . . . . .	1
WARRANTY. . . . .	2
CUSTOMER SERVICE PROCEDURES . . . . .	3
RECEIVING AND INSTALLING. . . . .	5
NAUGHTY BOY - GAME DESCRIPTION. . . . .	6
OPTION SWITCH SETTINGS. . . . .	10
ROUTINE MAINTENANCE . . . . .	11
WELLS-GARDNER COLOR MONITOR INFORMATION . . . . .	12
PARTS LIST - GAME ASSEMBLY. . . . .	28
PARTS LIST - ELECTRONIC BOARDS. . . . .	39
BOARD EDGE CONNECTOR PIN-OUT LIST . . . . .	43
APPENDIX A -	
ASSEMBLY DRAWINGS AND SCHEMATICS:	
ELECTRONIC BOARD LAYOUTS AND SCHEMATICS	
GAME ASSEMBLY DRAWINGS, SCHEMATICS AND HARNESS WIRE	
LISTS	

CINEMATRONICS, INC.

**WARNING:**

This equipment generates, uses, and can radiate radio frequency energy; and, if not installed and used in accordance with the Instruction's Manual, may cause interference to radio communication. As temporarily permitted by regulation, it has not been tested for compliance pursuant to Subpart J of Part 15 of FCC rules, which is designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

## WARRANTY

Cinematronics, Inc. warrants the goods to be free from defects in material and workmanship under normal use and service for a period of ninety (90) days from the date of shipment from factory. Cinematronics makes no representation or warranties concerning the goods whether express or implied by operation of law or otherwise, including those of merchantability or fitness for any particular purpose, or with respect of patent infringement, except as may be specifically made herein. Cinematronics limits its warranty obligations herein to the repair or replacement of such parts which have been returned to Cinematronics' plant at purchaser's expense and which examination shall disclose Cinematronics' satisfaction to have been so defective and to the shipment of such repaired or replacement parts to the purchaser F.O.B. the shipping point.

This warranty does not apply to any Cinematronics' product which has been altered or repaired by unauthorized personnel or service facilities or any products which have had the unit serial number altered or removed.

Upon acceptance of the goods, the purchaser agrees to assume all liability for damages and/or bodily injury by the purchaser or any other person and to hold Cinematronics, Inc. harmless from liability or claims arising from the use of the goods by any person. Purchaser further agrees to indemnify Cinematronics, Inc. from any liability, claim, cause of action or litigation resulting from the use or misuse of the goods by any person.

Parts returned for warranty service must be packaged so that no damage is incurred during the shipment. Full documentation and instructions must accompany returned parts. Parts must be shipped prepaid to:

Cinematronics, Inc.  
1841 Friendship Drive  
El Cajon, CA 92020

CUSTOMER SERVICE PROCEDURES  
FOR AUTHORIZED CINEMATRONICS' DISTRIBUTORS

It is the desire of Cinematronics, Inc. to provide efficient and courteous service should the need arise. We have a fully staffed Customer Service Department and encourage you to call our toll-free number: (800) 854-2666 for technical assistance between the hours of 8:00 A.M. and 5:00 P.M., California time, Monday through Friday.

In order to provide the very best service possible, the following procedure for ordering or returning parts must be followed:

1. All equipment ordered from Customer Service, whether in or out of Warranty, must be placed with a Distributor's purchase order, either by mail or verbally by telephone.
2. Advance replacement items may be obtained only during the term of the Warranty and when such items are available, using the same procedure as when ordering parts. When ordering a PCB, please include with your order the game serial number and the number of the PCB you wish replaced.
3. All items received as advance replacements will, after a period of thirty (30) days, become the property of the Distributor, with applicable charges applied in the event Customer Service has not received the defective item against which the advance replacement was made.
4. The Distributor must call this facility for an RMA number prior to returning any item. Please be prepared to provide us with the game serial number and the PCB number when requesting an RMA.
5. In all situations covered above, and in all other situations, the Warranty offered by Cinematronics, Inc. is applicable and should be fully understood.
6. Parts returned for service must be packaged so that no damage is incurred during the shipment. Cartons without a prominently displayed RMA number will not be accepted. Full

documentation including game serial number, PCB number on outside of package, and reason for return must accompany parts. Ship prepared to:

Cinematronics, Inc.  
Customer Service Department  
1841 Friendship Drive  
El Cajon, CA 92020

(800) 854-2666

(714) 562-7000

## RECEIVING AND INSTALLING

### RECEIVING INSPECTION

Your game was shipped in ready-to-play condition. However, after removal of the shipping carton, a brief visual examination is suggested.

Naturally, you will want to make note of any physical damage to the game cabinet and its external components for freight claim purposes. Considering the quality of the shipping carton, any damage to the exterior would indicate possible interior damage as well.

The interior of the game should also undergo a brief examination for: loose mounting hardware (check to be sure that the major components are still securely mounted); disconnected or loose wires, cables or harnesses; electronic devices loose in their sockets; etc.

At this time the game serial number should be logged. Remember that the game serial number will be required if you need service from your distributor. Please complete the postage-free reply card and mail immediately.

### ELECTRICAL REQUIREMENTS

Unless specified otherwise, your game was shipped to operate at 115 VAC, 50/60 Hz.

A good earth ground is essential for the proper operation of this game or for that matter, any electronic device. Problems with instability and erratic operation of computer-type devices can usually be traced to an ineffective ground system. Therefore, plug the game into a properly wired three prong outlet. If a three prong to a two prong AC adaptor must be used, an alternate method of grounding the third prong must be used.



NAUGHTY BOY  
GAME DESCRIPTION

GAME PLAY

Game play for Naughty Boy proceeds through four different screens. These screens will appear in sequence. Each time a player successfully maneuvers through all four screens, the screens repeat their appearance, with more objects moving at higher speeds. In addition, after successfully completing even numbered rounds, the player is awarded a bonus round.

SCREEN ONE

This screen begins with Naughty Boy standing in a forest. In front of him are several monsters. There is also a safety zone that can be entered through two red doors, which the monsters cannot enter. The same type of doors appear on fences along the side of the screen. Naughty Boy can appear on the other side of the screen by passing through one of these doors.

As Naughty Boy moves towards the top of the screen, the images scroll downwards. Above the forest is a series of fences, then a group of ponds, and finally, walls of a fortress. Some goblins guard the top portion of the screen.

Naughty Boy must maneuver his way through the forest, past the fences and ponds and destroy the flags that are flying on the fortress. The player controls Naughty Boy with a four position joystick. In addition, a throw button allows the player to throw rocks at objects to destroy them.

Naughty Boy must avoid contact with the monsters and goblins or he will be destroyed. Also, a dragon will randomly appear on the ponds breathing fire. If Naughty Boy is hit by the fire, he will be destroyed.

The safety zone allows Naughty Boy to attack the monsters and goblins without danger by throwing rocks at them outside. A timer begins to decrease whenever Naughty Boy is inside the

safety zone. Once the timer reaches zero, the red doors disappear and Naughty Boy can be attacked.

Periodically, a question mark will appear on the screen. If Naughty Boy hits the question mark with a rock, he will become invincible to attack from the monsters and goblins for a short time. Naughty Boy can still be destroyed by the dragon. After the question mark is hit, different objects will appear in the same spot. These objects will score bonus points when hit with rocks.

Once Naughty Boy reaches the fortress, he must hit all the flags with rocks. Two flags can be destroyed with one throw, if the rock lands in between two flags. Once all the flags are destroyed, Naughty Boy will proceed to the next screen.

If Naughty Boy is destroyed before he is able to destroy all the flags, he will reappear at the starting position of the screen he is currently in. Any flags destroyed by Naughty Boy remain destroyed.

Naughty Boy always throws in the direction that he is facing. The distance a rock is thrown is determined by how long the throw button is depressed.

## SCREEN TWO

This screen is an open field. A safety zone is in the center of the field. Monsters and goblins are scattered around the field. Robots guard the fortress at the top of the screen.

Play proceeds as in the first screen. The dragon appears randomly in the field above the safety zone. Once all the flags are destroyed, Naughty Boy will appear in the next screen.

## SCREEN THREE

Naughty Boy begins his adventure in the center of a maze. Goblins and monsters will chase Naughty Boy through the maze. At the top of the maze is the safety zone. Above the safety zone is the fortress. No dragons appear in this screen.

#### SCREEN FOUR

In this screen Naughty Boy is standing between the safety zone and some ponds. The dragon will randomly appear in the ponds. Above the ponds is a series of fences and walls. Once Naughty Boy passes through these, he reaches the fortress.

If all the flags are destroyed in this screen, Naughty Boy will appear in Screen One. However, Naughty Boy must fight more objects which are moving faster. This is true for every screen that Naughty Boy goes through.

#### BONUS PLAY

After successfully completing even numbered rounds, the player is given a bonus play. During bonus play, Naughty Boy flies back and forth at the top of the screen in a balloon. A fuel gauge above the balloon indicates how much bonus play is left. At the bottom of the screen, a female monster runs back and forth.

Naughty Boy throws objects out of the balloon and tries to hit the monster on the head. If the monster is struck, she changes expressions momentarily. The fuel gauge decreases as play proceeds. Play continues until the fuel runs out.

Play continues until all of a player's Naughty Boys are destroyed. A player can earn one extra Naughty Boy based upon his score achieved and the operator adjustable level selected.

#### SCORING

Monsters, Goblins & Robots	- 250 Points to 9000 Points
Flags	- 200 Points to 2000 Points
Bonus Objects	- 500 Points to 9000 Points

#### FEATURES

1. Number of Naughty Boys per game operator adjustable is 2, 3, 4 or 5.
2. Point level at which the extra Naughty Boy is awarded is operator adjustable at 10,000, 30,000, 50,000 or 70,000 points.

3. Four coinage options.
4. Easy/hard switch for longer game life.
5. Four different screens and bonus play round.
6. Fifty difficulty levels.
7. Throw distance controlled by the throw button.

NAUGHTY BOY  
OPTION SWITCH SETTINGS

OPTION	FACTORY SETTING	DESCRIPTION	1	2	3	4	5	6	7	8
NUMBER OF NAUGHTY BOYS		2	ON	ON						
	X	3	OFF	ON						
		4	ON	OFF						
		5	OFF	OFF						
EXTRA BOY		10,000 Points			ON	ON				
	X	30,000 Points			OFF	ON				
		50,000 Points			ON	OFF				
		70,000 Points			OFF	OFF				
CREDITS		2 Coin, 1 Play					ON	ON		
	X	1 Coin, 1 Play					OFF	ON		
		1 Coin, 2 Play					ON	OFF		
		4 Coin, 3 Play					OFF	OFF		
DIFFICULTY	X	Easier							ON	
		Harder							OFF	
GAME TYPE		Upright								ON
		Cocktail								OFF

## ROUTINE MAINTENANCE & SERVICE

Because of the solid state electronic circuitry, this machine should require very little maintenance and only occasional adjustments. However, it is necessary to take measures to ensure this.

The volume control is located on the rear of the coin door and can be accessed by opening the coin door.

The video monitor has been properly adjusted before shipping. Occasionally minor adjustments are necessary. See monitor specifications and schematics for technical information. Adjustment controls for the monitor are located at the rear of the monitor.

This machine should be serviced only by a qualified technician.

Do not make any adjustments on this machine while the power is on.

For service information, contact:

CINEMATRONICS, INC.  
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(714) 562-7000

### POWER SUPPLY

The computer board in this game operates most efficiently and reliably when the power supply is set so that the voltage on the board is 5.0 volts,  $\pm 0.1$  volts. To check this, place a meter across 5 volts and ground at the edge connector. If necessary, adjust the screwdriver control on the power supply so the meter reads between 4.9 and 5.1 volts.

NAUGHTY BOY  
PARTS LISTS

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-10640-01</u>	<u>Assy, Fluorescent Lamp</u>	<u>1</u>
01-10505-01	Lamp, Fluorescent	1
26-10588-01	Fixture, Lamp, Fluorescent	1
87-11668-01	Assy, Harn Fluorescent Lamp	1
25-10579-01	Ty Rap, W/O Eyelet	7
25-10580-01	Ty Rap, W/Eyelet	3
34-11271-01	Wire, 18AWG, Twtd, Blk/Wht	
35-10614-01	Pin, Male, Molex	2
<u>38-11698-02</u>	<u>Assy, Coin Door W/Lamps</u>	<u>1</u>
20-10896-11	Coin Door W/Lamps Cocktail	1
22-10899-01	Decal, "Cinematronics"	1
25-10556-01	Nut, Hex #4-40	3
25-10570-01	Washer, Lock #4 Internal	3
38-11702-02	Assy, Coin Meter/Vol Ctl	1
20-10868-11	Brkt, Short Vol. Cntl/Counter	1
25-10557-01	Nut, Hex #6-32	2
25-10563-01	Screw, Machine, #6-32 x 1/2" Pan Hd P	2
25-10571-01	Washer, Lock, #6 Internal	2
<u>38-11757-01</u>	<u>Assy, Coin Meter</u>	<u>1</u>
29-11754-01	Meter, Coin 6 Volt (KEISU NR-06)	1
35-10614-01	Pin, Male, Molex	2
38-10961-04	Assy, Vol Ctl	1
26-10589-01	Knob, Volume	1
51-10722-01	Pot, W. Lk. Wsr/Nut, 10K Ohm	1
87-10955-01	Assy, Har, Vol Ctl	1
34-11719-01	Wire, 22AWG Blue/Red/Blk Twist	
35-10614-01	Pin, Male, Molex	1
35-10615-01	Pin, Female, Molex	2
<u>87-11680-01</u>	<u>Assy, Harn Coin Door</u>	<u>1</u>
25-10579-01	Ty Rap, W/O Eyelet	4
25-10905-01	Clamp, Cable 3/16", Plastic	4
34-10597-01	Wire, 22AWG, Blk	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10906-01	Wire, 22AWG, Twisted, Brown/White	
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1



PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11434-01</u>	<u>Assy, Monitor, Color Raster</u>	<u>1</u>
<u>87-11711-01</u>	<u>Assy, Harn Raster Mon to CPU</u>	<u>1</u>
34-10597-01	Wire, 22AWG, Blk	2
34-10606-01	Wire, 22AWG, Red	
34-10598-01	Wire, 22AWG, Green	
34-10605-01	Wire, 22AWG, Blue	
34-10607-01	Wire, 22AWG, White	
35-10614-01	Pin, Male, Molex	5
35-10615-01	Pin, Female, Molex	7
41-10954-01	Conn, 6 Cir F, Molex 03-09-2062	1
41-10651-01	Conn, Female Crimp Term, Molex	1
41-11724-01	Conn, 6 Cir Crimp Term 09-50-7061	1
25-10579-01	Ty Rap, W/O Eyelet	3
<u>38-11737-01</u>	<u>Assy, Circuit Panel</u>	<u>1</u>
38-11733-02	Assy, Boards W/Vol Mod	1
38-11738-02	Assy, Board MT-09 W/Vol Mod	1
34-10594-01	Wire, 30AWG, Blue, KYNAR	
63-10781-01	Cap, .005mf 50V DISC 20%	1
38-11738-01	Assy, Board MT-09	1
38-11739-01	Assy, Board MT-10	1
20-11687-01	Plate, Mntg Logic/Audio	1
25-10557-01	Nut, Hex #6-32	4
25-11756-01	Screw, Machine #6-32 x 2" PH PN	4
25-11752-01	Washer, #6 Lock (Split Ring)	4
25-11753-01	Spacer, Nylon #6-5/8" (Smith 4025)	8
25-11749-01	Washer, #6 Flat	4
32-11736-01	Cabinet, Upright Color Raster SH	1
<u>38-11673-01</u>	<u>Assy, Ctl Pnl</u>	<u>1</u>
20-11673-01	Ctl Pnl	1
22-11674-01	Decal, Ctl Pnl	1
37-11192-01	Button, Short, White, Cocktail	2
37-11192-02	Button, Short, Red	1

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
37-11373-01	Switch, W/Plastic Mntg Brkt, Short	3
25-10559-01	Nut, Pal 5/8"	3
25-10558-01	Nut, Hex, #10-24	4
25-10572-01	Washer, Lock, #10 Internal	8
25-10909-01	Bolt, Carriage, 3/16" x 3/4", Blk OX	4
50-11763-01	Assy, Joystick 4 Pos WICO 15-9518	1
25-11688-01	Screw, Machine 8-32 x 1/2"	4
<u>87-11679-01</u>	<u>Assy, Harn Ctl Pnl</u>	<u>1</u>
34-10596-01	Wire, 22AWG/TC, Buss	
34-10597-01	Wire, 22AWG, Blk	
34-10607-01	Wire, 22AWG, White	
34-10598-01	Wire, 22AWG, Green	
34-10600-01	Wire, 22AWG, Purple	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10602-01	Wire, 22AWG, Orange	
35-10614-01	Pin, Male, Molex	9
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1
25-10579-01	Ty Rap, W/O Eyelet	8
23-11152-01	Tape, Foam 3/4"	
<u>38-10894-01</u>	<u>Assy, Coin Drawer</u>	<u>1</u>
20-10862-01	Brkt, Coin Box Tong	1
20-10864-01	Handle, Coin Box	1
20-10871-01	Coin Box	1
20-10872-01	Cover, Coin Box	1
<u>38-11700-01</u>	<u>Assy, P.S./Transformer (Raster)</u>	<u>1</u>
20-11606-01	Plate, Mtg, P/S, Transformer	1
25-10551-01	Bolt, Carriage, 3/16" x 1/2" Black O	8
25-11607-01	Stand-Off, Nylon, Locking, DLCBS-14	4
25-11612-01	Washer, Lock #8	8
25-11613-01	Nut, #8-32	8

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11723-01</u>	<u>Assy, Transformer ISOL Ravenswood</u>	<u>1</u>
43-11704-01	Transformer, ISOL Ravenswood	1
<u>87-11688-01</u>	<u>Assy, Harn Trans/Monitor</u>	<u>1</u>
<u>87-11768-01</u>	<u>Assy, Harn Trans/P.S.</u>	<u>1</u>
<u>87-11767-01</u>	<u>Assy, Harn Trans Gnd.</u>	<u>1</u>
<u>81-11685-01</u>	<u>PCA, Regulator +12V, -5V</u>	<u>1</u>
20-10520-01	Heat Sink, Thermalloy 6071B	2
20-10521-01	Heat Sink, Thermalloy 6072B	2
25-10556-01	Nut, Hex #4-40	4
25-10570-01	Washer, Lock, #4 Internal	4
25-10974-01	Screw, Machine 4-40-3/8" Pan HD PH	4
41-10661-01	Conn, 6 Cir WAF, Molex 09-18-506	1
53-10732-01	Res, 470 Ohm 1/4W 5% C	1
53-10734-01	Res, 1K Ohm 1/4W 5% C	1
53-11707-01	Res, 150 Ohm 5W Ceramic "Block"	3
63-10784-01	Cap, .1mf 50V Disc 20%	4
63-11128-01	Cap, 22mf 50V Electrolytic Radial	3
65-10812-01	Diode, 1N4003, Encpl	4
66-11705-01	Trans, 7812	1
66-11706-01	Trans, 7905	1
80-11685-01	PCB, Regulator +12V, -5V	1
82-10842-30	Power Supply, Data Power	1
<u>38-10638-01</u>	<u>Assy, Speaker</u>	<u>1</u>
20-11382-01	Grill, Speaker	1
71-10834-01	Speaker	1
<u>87-11681-02</u>	<u>Assy, Harn Main W/Conn</u>	<u>1</u>
87-11681-01	Assy, Harn Main	1
34-10597-01	Wire, 22AWG, Blk	
34-10598-01	Wire, 22AWG, Green	
34-10599-01	Wire, 22AWG, Yellow	
34-10600-01	Wire, 22AWG, Purple	
34-10602-01	Wire, 22AWG, Orange	
34-10603-01	Wire, 22AWG, Grey	

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10606-01	Wire, 22AWG, Red	
34-10607-01	Wire, 22AWG, White	
34-10608-01	Wire, 18AWG, Red	
34-10610-01	Wire, 18AWG, Black	
34-11407-01	Wire, 18AWG, Yellow	
35-10614-01	Pin, Male, Molex	15
35-10615-01	Pin, Female, Molex	14
41-11746-01	Conn, Edge 36P Sullins EZM18DSEH	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	1
41-10648-01	Conn, 15 Cir F, Molex 03-09-2153	1
41-10883-01	Conn, 3 Cir M, Molex 03-09-1038	1
41-10647-01	Conn, 12 Cir M, Molex 03-09-1122	1
41-10657-01	Conn, 6 Cir M, Molex 03-09-1063	1
<u>87-11677-01</u>	<u>Assy, Harn Ctl Pnl Interface</u>	<u>1</u>
34-10597-01	Wire, 22AWG, BLK	
34-10607-01	Wire, 22AWG, White	
34-10598-01	Wire, 22AWG, Green	
34-10600-01	Wire, 22AWG, Purple	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10602-01	Wire, 22AWG, Orange	
35-10615-01	Pin, Female, Molex	18
41-10660-01	Conn, 15 Cir M, Molex 03-09-1152	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	1
25-10579-01	Ty Rap, W/O Eyelet	6
25-10580-01	Ty Rap, W/Eyelet	3

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>87-11755-01</u>	<u>Assy, Harn Coin Door Inter. Raster</u>	<u>1</u>
34-10597-01	Wire, 22AWG, Blk	
34-10599-01	Wire, 22AWG, Yellow	
34-10600-01	Wire, 22AWG, Purple	
34-10606-01	Wire, 22AWG, Red	
34-11719-01	Wire, 22AWG Blu/Red/Blk Twist	
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	1
35-10614-01	Pin, Male, Molex	9
35-10615-01	Pin, Female, Molex	7
25-10579-01	Ty Rap, W/O Eyelet	5
25-10580-01	Ty Rap, W/Eyelet	2
<u>87-11701-01</u>	<u>Assy, AC Power Cord Harn</u>	<u>1</u>
25-10561-01	Nut, Wire	1
25-10579-01	Ty Rap, W/O Eyelet	15
25-10580-01	Ty Rap, W/Eyelet	5
34-10608-01	Wire, 18AWG, Red	
34-10609-01	Wire, 18AWG, Blue	
34-10610-01	Wire, 18AWG, Black	
34-10908-01	Wire, 18AWG, Orange	
34-11187-01	Wire, Stripe, 18AWG, Red/Black	
34-11412-01	Wire, 18AWG, Brown	
34-11718-01	Wire, 18AWG, Blu/Blk	
35-10614-01	Pin, Male, Molex	14
35-10615-01	Pin, Female, Molex	5
35-10617-01	Terminal, Female, Quick Disconnect	2
41-10647-01	Conn, 12 Cir M, Molex 03-09-1122	1
41-10657-01	Conn, 6 Cir M, Molex 03-09-1063	1
41-10884-01	Conn, 12 Cir F, Molex 03-09-2121	1
87-10967-01	Assy, Cord, AC Power	1

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>87-11692-01</u>	<u>Assy, Harn Speaker</u>	<u>1</u>
34-10906-01	Wire, 22AWG, Twisted, Brown/White	
35-10614-01	Pin, Male, Molex	2
35-10617-01	Terminal, Female, Quick Disconnect	2
25-10580-01	Ty Rap, W/Eyelet	2
41-10659-01	Conn, 3 Cir F, Molex 03-09-2038	1
<u>38-10892-01</u>	<u>Assy, Interlock Swt, Back Panel</u>	<u>1</u>
20-10863-01	Brkt, Interlock Switch	1
37-10893-01	Switch, Interlock	1
20-11376-02	Retainer, Marquee Plexi Upper 23	1
20-11377-02	Retainer, Marquee Plexi Lower 23	1
21-11666-03	Plexi, Front Screened	1
21-11694-01	Plexi Smoked 23. 75 x 20	1
21-11741-02	Plexi, Marquee Screened	1
22-11742-01	Decal, Side	2
25-10553-01	Bolt, Carriage, 3/16" 2", Black OX	4
25-10560-01	Nut, Wing, 3/16" #10-24	6
25-10568-01	Washer, Flat, #10 x 1/2"	23
25-10551-01	Bolt, Carriage, 3/16" x 1/2" Black O	1
25-11392-01	Bolt, Carriage, 3/16" x 1 1/4", Blk	16
25-10566-01	Screw, Wood, #8 x 5/8", Bx Dr Blk, OX	22
25-11613-01	Nut, #8-32	24
25-11721-01	Hook, Key	1
<u>38-11728-02</u>	<u>Kit, Spares</u>	<u>1</u>
18-11732-01	Screwdriver, BX DR #8 VACO TR-2	1
25-10566-01	Screw, Wood, #8 x 5/8", BX DR BLK, OX	6
67-11580-01	Fuse, 5AMP Slow Blow	1
67-10832-01	Fuse, 5AMP, 3AG	1

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
21-10831-01	Bezel, CRT, Formed	1
22-10542-01	Label, "Patent Notice"	1
22-10544-01	Label, "Unit Wired For"	1
34-10903-01	Braid, Flat, Tinner Copper, 3/16"	10
35-11096-01	Lug, Ground	6
72-11734-01	Manual, Operator	1
<u>38-11758-02</u>	<u>Assy, Shipping Cont. Raster Short</u>	<u>1</u>
15-11179-01	Cap	2
15-11180-01	Pads, Corner	4
15-11181-01	Pallet Foam	1
15-11759-01	Sleeve, Game (29x33x72) 600DW	1
15-11760-01	Banding, Plastic 3/8"	
	The following parts are used on the Cocktail Table game cabinet ONLY:	
20-11420-01	Rail, CRT Mtg	2
21-11715-01	Plexi, Smoked Top	1
32-11427-01	Cabinet, W/Back	1
32-11428-01	Bracket, Glass Holder	1
32-11556-01	Bkt, Speaker	1
25-11722-01	Leveler, Leg	4
38-11439-01	Assy, Speaker	1
25-11414-01	Screw, Wood, #8-1 1/4", BX DR, BLK O	2
71-10834-01	Speaker	1
<u>38-11441-01</u>	<u>Assy, Coin Box</u>	<u>1</u>
20-10871-02	Coin Drawer	1
20-10872-02	Cover, Coin Drawer	1
<u>38-11691-01</u>	<u>Assy, Ctl Pnl Plyr #1</u>	<u>1</u>
20-11691-01	Ctl Pnl Plyr #1	1
22-11744-01	Decal, Ctl Pnl Plyr #1	1

PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11691-02</u>	<u>Assy, Ctl Pnl Plyr #2</u>	<u>1</u>
20-11691-02	Ctl Pnl Plyr #2	1
22-11744-02	Decal, Ctl Pnl Plyr #2	1
<u>38-11716-01</u>	<u>Assy, Power Supply Raster</u>	<u>1</u>
20-11709-01	Plate, Mntg P/S & Trans	1
<u>87-11710-01</u>	<u>Assy, Harn Ctl Pnl Inter</u>	<u>1</u>
25-10579-01	Ty Rap, W/O Eyelet	5
25-10580-01	Ty Rap, W/Eyelet	2
34-10597-01	Wire, 22AWG, Blk	
34-10598-01	Wire, 22AWG, Green	
34-10599-01	Wire, 22AWG, Yellow	
34-10600-01	Wire, 22AWG, Purple	
34-10602-01	Wire, 22AWG, Orange	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10607-01	Wire, 22AWG, White	
35-10614-01	Pin, Male, Molex	1
35-10615-01	Pin, Female, Molex	30
41-10648-01	Conn, 15 Cir F, Molex 03-09-2153	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	2
<u>87-11708-01</u>	<u>Assy, Harn Ctl Pnl #1</u>	<u>1</u>
<u>87-11708-02</u>	<u>Assy, Harn Ctl Pnl #2</u>	<u>1</u>
34-10596-01	Wire, 22AWG/TC, Buss	
34-10597-01	Wire, 22AWG, Black	
34-10607-01	Wire, 22AWG, White	
34-10598-01	Wire, 22AWG, Green	
34-10600-01	Wire, 22AWG, Purple	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	



PARTS LIST  
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
34-10605-01	Wire, 22AWG, Blue	
34-10602-01	Wire, 22AWG, Orange	
35-10614-01	Pin, Male, Molex	9
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1
25-10579-01	Ty Rap, W/O Eyelet	8
92-11740-01	Glass, Top Screened	1
20-11156-01	Grill, Heat Vent	2
23-11425-01	Tape, Foam 1.5"	

PARTS LIST  
ELECTRONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11733-01</u>	<u>Assy, Boards NB</u>	
<u>38-11820-01</u>	<u>Assy, Game NB 8201 (NB)</u>	<u>1</u>
<u>81-11821-01</u>	<u>Assy, Game NB 8201</u>	<u>1</u>
36-10621-01	Socket, 24 Pin, IC Dip Solder Tail	8
36-11784-01	Socket, 40 Pin Diptail	1
37-11824-01	Switch, Dip 8 Pos DC5V 1A Uni-Aut	1
44-10679-01	IC, 74LS04	1
44-10680-01	IC, 74LS08	1
44-10683-01	IC, 74LS32	3
44-10689-01	IC, 74LS157	1
44-10690-01	IC, 74LS163	1
44-11028-01	IC, 74LS74	1
44-11029-01	IC, 74LS138	2
44-11036-01	IC, 7407	1
44-11340-01	IC, 74LS125	1
44-11343-01	IC, LM556	2
44-11478-01	IC, 74LS153	1
44-11483-01	IC, 74LS174	1
44-11486-01	IC, 74LS244	3
44-11487-01	IC, 74LS245	2
44-11492-01	IC, 74LS374	2
44-11825-01	IC, 74LS14	2
44-11827-01	IC, 74LS145	2
44-11828-01	IC, LM324	2
44-11829-01	IC, LM380	1
44-11830-01	IC, I4006B	1
44-11831-01	IC, I4066B	1
44-11832-01	IC, TMS-3615	1
44-11833-01	IC, Z-80A	1
44-11834-01	IC, 2114/4	2
53-10726-01	RES, 100 OHM 1/4W 5% C	7
53-10727-01	RES, 150 OHM 1/4W 5% C	4

PARTS LIST  
ELECTRONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
53-10731-01	RES, 330 OHM 1/4W 5% C	3
53-10732-01	RES, 470 OHM 1/4W 5% C	2
53-10735-01	RES, 1.5K OHM 1/4W 5% C	41
53-10737-01	RES, 2K OHM 1/4W 5% C	6
53-10746-01	RES, 10K OHM 1/4W 5% C	10
53-10749-01	RES, 20K OHM 1/4W 5% C	10
53-10756-01	RES, 47K OHM 1/4W 5% C	5
53-10924-01	RES, 33K OHM 1/4W 5% C	5
53-10928-01	RES, 100K OHm 1/4W 5% C	4
53-10931-01	RES, 200K OHM 1/4W 5% C	6
53-11308-01	RES, 510K OHM 1/4W 5% C	1
53-11836-01	RES, 510 OHM 1/4W 5% C	2
63-10782-01	CAP, .01mf 50V Disc 20%	1
63-10940-01	CAP, .001mf 50V Disc 20%	1
63-10993-01	CAP, 47mf 50V Electrolytic Radial	3
63-11100-01	CAP, .01uf 50V Film	3
63-11370-01	CAP, 10mf 50V Electrolytic	15
63-11837-01	CAP, 1mf 50V Electrolytic	14
63-11838-01	CAP, 2.2mf 50V Electrolytic	3
63-11839-01	CAP, 470mf 50V Electrolytic	1
63-11840-01	CAP, .047mf 50V Disc	15
66-11841-01	Trans, 2SC-1815	1
80-11821-01	Board, NB-8201	1
87-11842-01	Assy, R. Cble Flat 50 Cir	2
44-11826-01	IC, 74LS136	1
05-11823-01	Assy, E Prom Kit NB-8201 (NB)	1
02-11823-01	E Prom, #1 NB	1
02-11823-02	E Prom, #2 NB	1
02-11823-03	E Prom, #3 NB	1
02-11823-04	E Prom, #4 NB	1
02-11823-05	E Prom, #5 NB	1
02-11823-06	E Prom, #6 NB	1
02-11823-07	E Prom, #7 NB	1
02-11823-08	E Prom, #8 NB	1

PARTS LIST  
ELECTRONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11820-02</u>	<u>Assy, Game NB 8202 (NB)</u>	<u>1</u>
<u>81-11822-01</u>	<u>Assy, Game NB 8202</u>	1
36-10620-01	Socket, 16 Pin, IC, Dip Solder Tail	2
36-10621-01	Socket, 24 Pin, IC, Dip Solder Tail	8
44-10677-01	IC, 74LS00	2
44-10679-01	IC, 74LS04	2
44-10680-01	IC, 74LS08	2
44-10686-01	IC, 74LS86	4
44-10687-01	IC, 74LS107	1
44-10688-01	IC, 74LS151	4
44-10689-01	IC, 74LS157	9
44-10690-01	IC, 74LS163	4
44-11028-01	IC, 74LS74	3
44-11029-01	IC, 74LS138	2
44-11032-01	IC, 74LS174	5
44-11341-01	IC, 7404	2
44-11487-01	IC, 74LS245	2
44-11490-01	IC, 74S283	3
44-11492-01	IC, 74LS374	3
44-11826-01	IC, 74LS136	1
44-11843-01	IC, 6301	2
44-11834-01	IC, 2114/4	8
53-10726-01	RES, 100 OHM 1/4W 5% C	1
53-10734-01	RES, 1K OHM 1/4W 5% C	1
53-11306-01	RES, 1.2K OHM 1/4W 5% C	2
63-10780-01	CAP, 470PF 50V Disc 20%	1
63-10790-01	CAP, 47mf 50v Electrolytic Axial	1
63-10940-01	CAP, .001mf 50V Disc 20%	2
63-11840-01	CAP, .047mf 50V Disc	16
69-11844-01	Crystal, 12 MHZ HC-18/U	1
80-11822-01	Board, NB-8202	1
05-11823-02	Assy, E Prom Kit NB-8201 (NB)	1
02-11823-09	E Prom, #9 NB	1
02-11823-10	E Prom, #10 NB	1

PARTS LIST  
ELECTRTONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
02-11823-11	E Prom, #11 NB	1
02-11823-12	E Prom, #12 NB	1
02-11823-13	E Prom, #13 NB	1
02-11823-14	E Prom, #14 NB	1
02-11823-15	E Prom, #15 NB	1
02-11823-16	E Prom, #16 NB	1

NAUGHTY BOY  
BOARD EDGE CONNECTOR PIN-OUT LIST

<u>EDGE CONN. PIN (J1)</u>	<u>FUNCTION</u>	<u>TO</u>	<u>WIRE COLOR</u>
J1-A	Ground, Monitor	J6-1	Black
J1-1	Ground, Power Supply	J5-1	Black
J1-B	Ground, Volume Pot	J2-7	Black
J1-2	Ground, Connector Switch	J2-1	Black
J1-C	Not Used		
J1-3	Ground, Control Panel	J3-7	Black
J1-D	Speaker Ground	J4-1	Black
J1-4	Speaker Output	J4-2	Brown
J1-E	Not Used		
J1-5	Coin Switch	J2-2	Yellow
J1-F	Not Used		
J1-6	Not Used		
J1-H	+12 Volts	J5-4	Yellow
J1-7	+12 Volts	--	--
J1-J	Volume Pot	J2-5	Red
J1-8	Volume Pot	J2-6	Blue
J1-K	+5 Volts	J5-2	Red
J1-9	+5 Volts, Counter	J2-4	Red
J1-L	Not Used		
J1-10	Not Used		
J1-M	Player Two - Up	J3-6	Violet
J1-11	Player One - Up	J3-10	Violet
J1-N	Player Two - Down	J3-4	Gray
J1-12	Player One - Down	J3-12	Gray
J1-P	Player Two - Right	J3-2	Blue
J1-13	Player One - Right	J3-14	Blue
J1-R	Player Two - Left	J3-1	Orange
J1-14	Player One - Left	J3-15	Orange

NAUGHTY BOY  
BOARD EDGE CONNECTOR PIN-OUT LIST

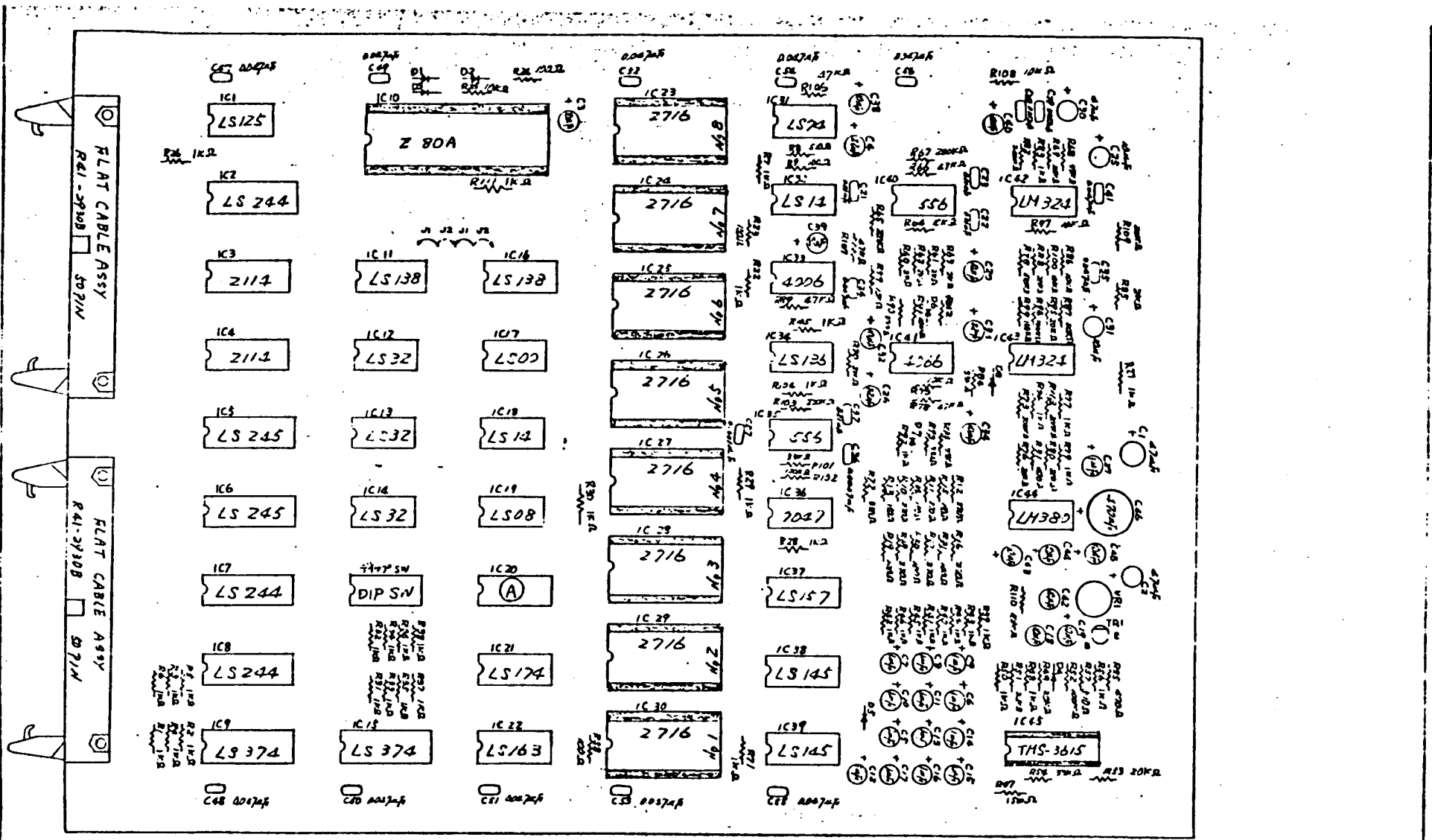
<u>EDGE CONN. PIN (J1)</u>	<u>FUNCTION</u>	<u>TO</u>	<u>WIRE COLOR</u>
J1-S	Monitor - Red	J6-2	Red
J1-15	Player Two - Start	J3-8	White
J1-T	Monitor - Blue	J6-4	Blue
J1-16	Player One - Start	J3-9	Green
J1-U	Monitor - Green	J6-3	Green
J1-17	Player One - Fire	J3-11	Yellow
J1-V	Monitor Sync.	J6-5	White
J1-18	Player Two - Fire	J3-5	Yellow

# APPENDIX A

Assembly Drawings  
Schematics  
and  
Wiring Diagrams

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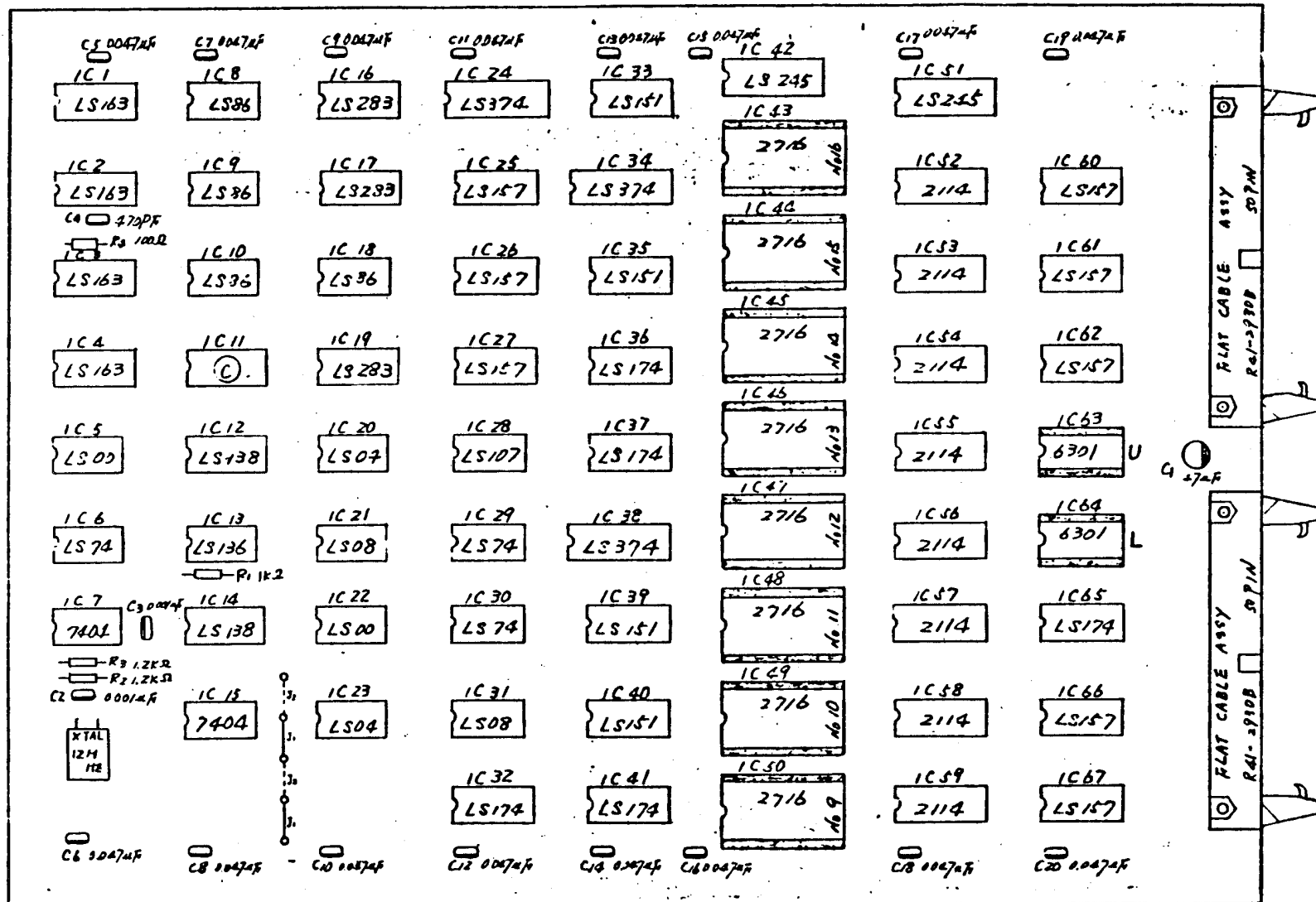


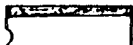
①, C5713 及び付付と。

② IC SOCKET 採用。



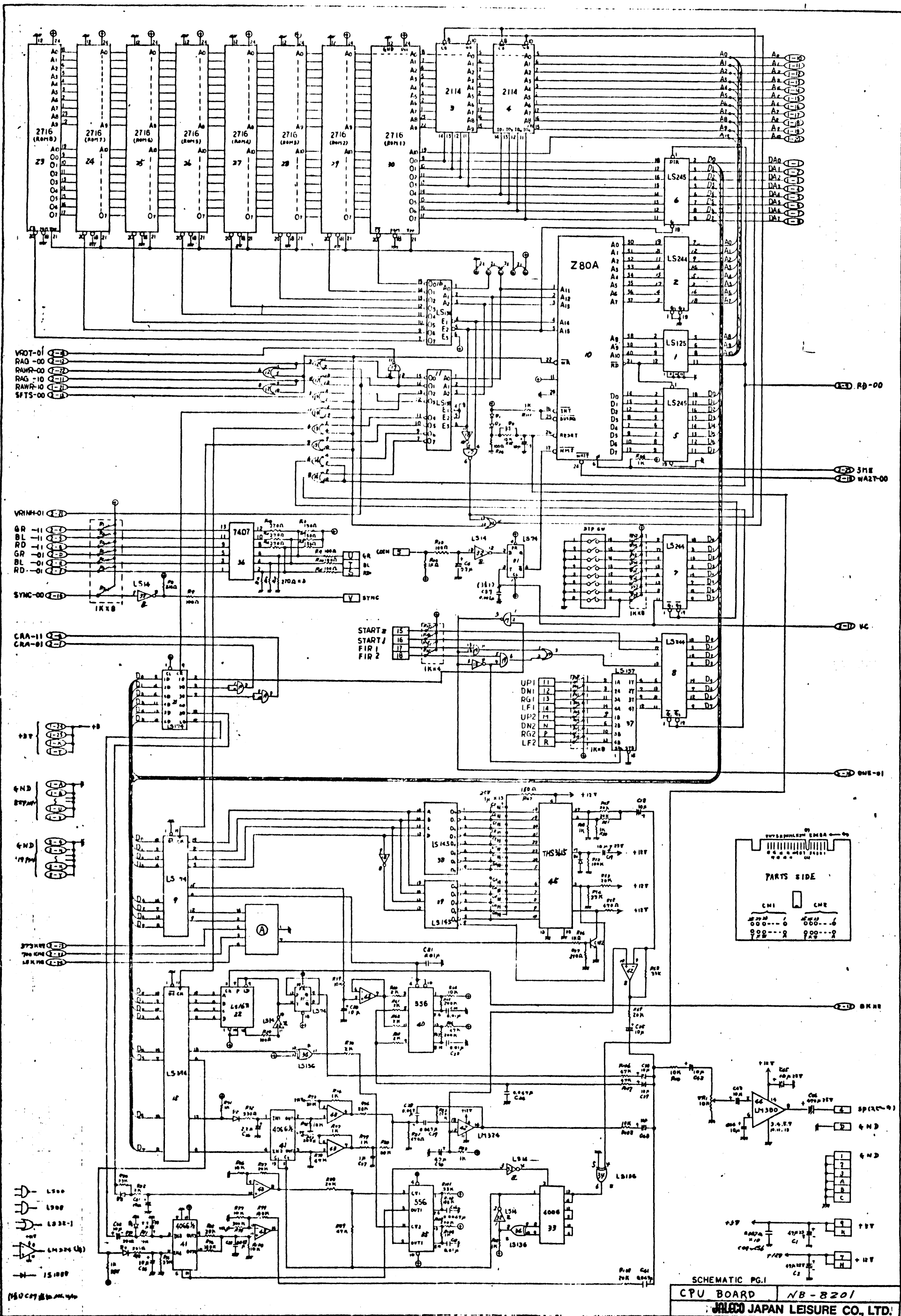
No.	CHG. DATE	CHG.	MATERIAL	DATE 10-12-81	DRAWING NAME
Δ	.	.	TREAT	THIRD ANGLE P.	CPU BD.
Δ	.	.	COM. DIFF ±	SCALE 1/1	ALIGNMENT-No.1
記	註	無	査	設	計
				DRAWING No.	CHG. No.
				NB-8201	



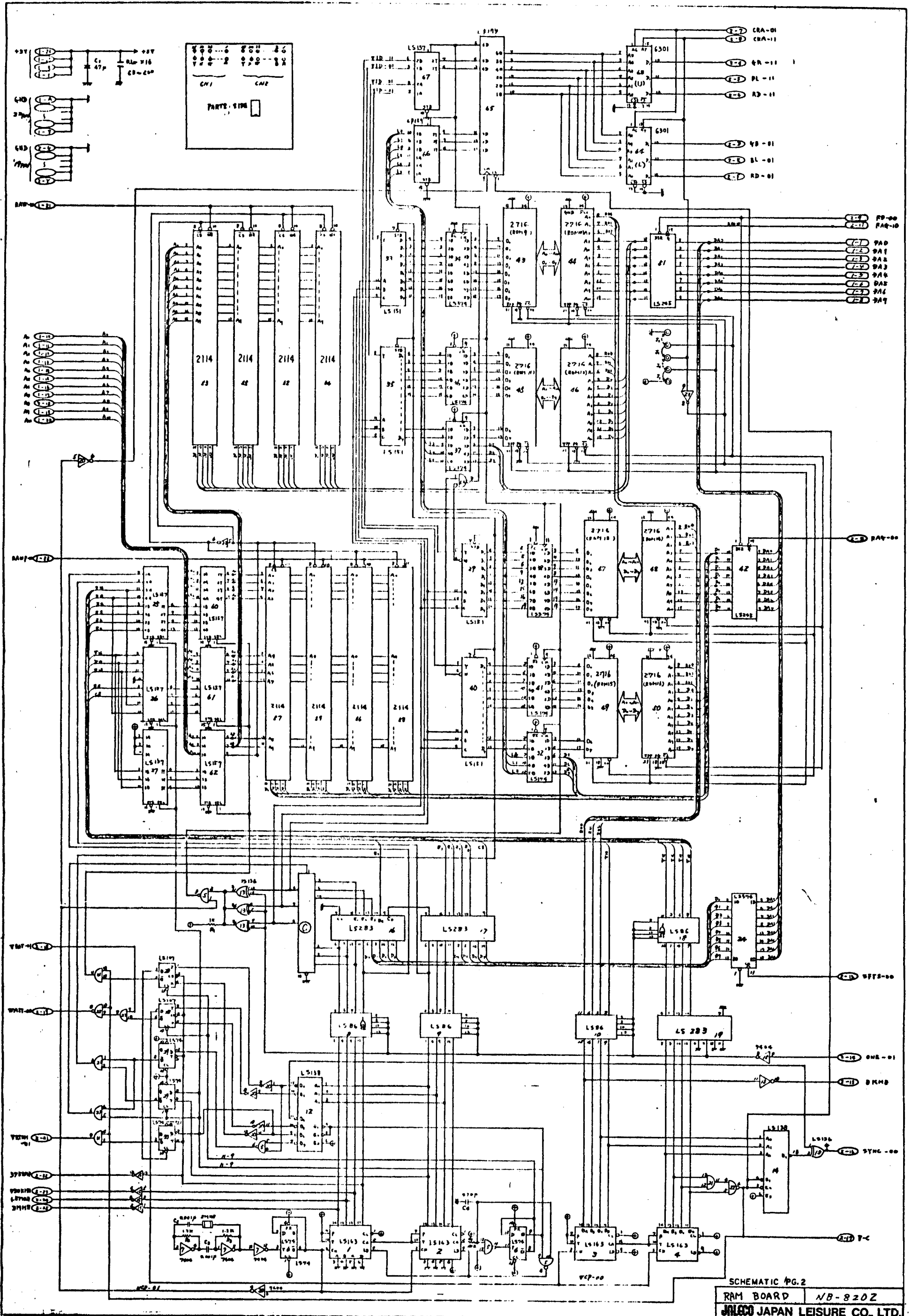
注)  IC SOCKET (使用)

NO	CHK. DATE	SIGN	MATERIAL	DATE M-12-81	DRAWING NAME
1	..		TREAT	THIRD ANGLE P.	RAM BD.
2	..		COM. DIFF	SCALE 1/1	ALIGNMENT - No.2
3	..				
説 明 書 照 査 技 術 課				DRAWING No.	CHK. No.
				NR-8202	

JOLCO JAPAN LEISURE CO., LTD.



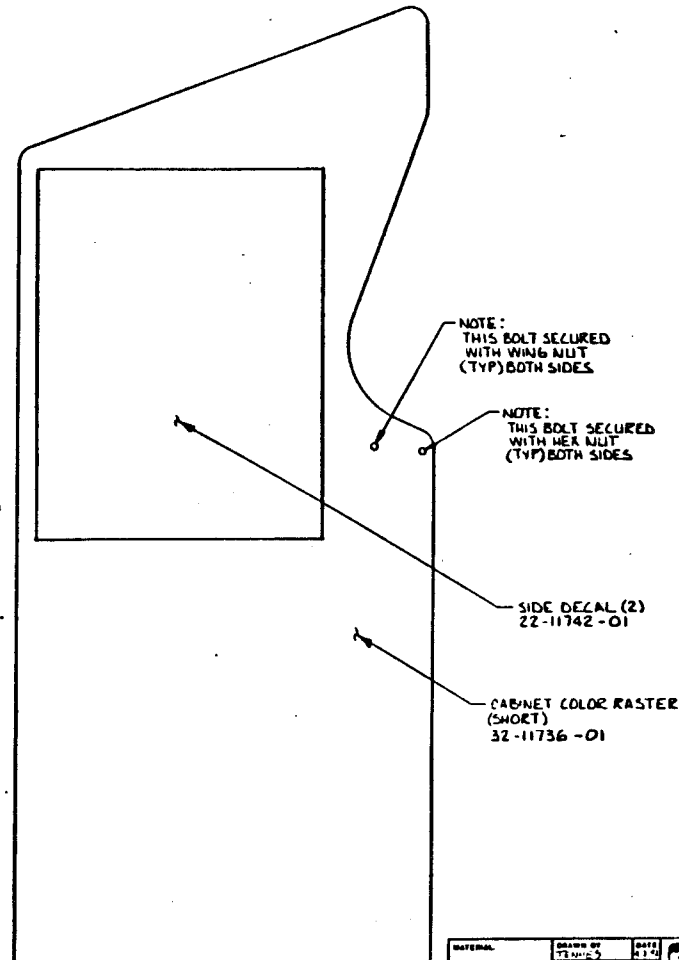
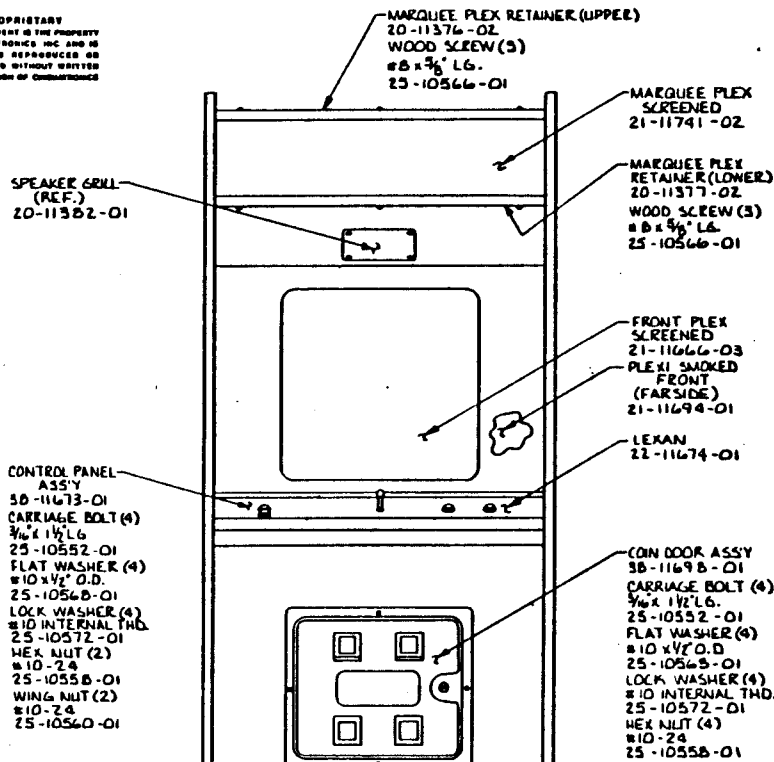
SCHEMATIC PG.1  
 CPU BOARD NB-8201  
 JALCO JAPAN LEISURE CO., LTD.



SCHEMATIC PG.2  
 RAM BOARD NB-8202  
 JALCO JAPAN LEISURE CO., LTD.

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INC.

REVISIONS				
REV	DESCRIPTION	DATE	APPROVED	
A	ORIG. P.O. ERN # 014	4-5-62		
	RICHY PER. EGO	ECO# 70	4-13-62	2977



NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DRAWN BY TENNIS	DATE 4-13-62	CINCINNATI OHIO INC C. OHIO
PROJECT ENG H.P.S.	DATE 4-13-62	DWG TITLE TOP ASSY (N.B.) (SHORT CABINET)	REV 0
DESIGNED BY H.P.S.	DATE 4-13-62	DO NOT SCALE DWG	MODEL NO 10-11734-01B
PRODUCTION SCALE 1-3/4" = 1"	SCALE Vg	CODE IDENT	SHEET 1 OF 2

8

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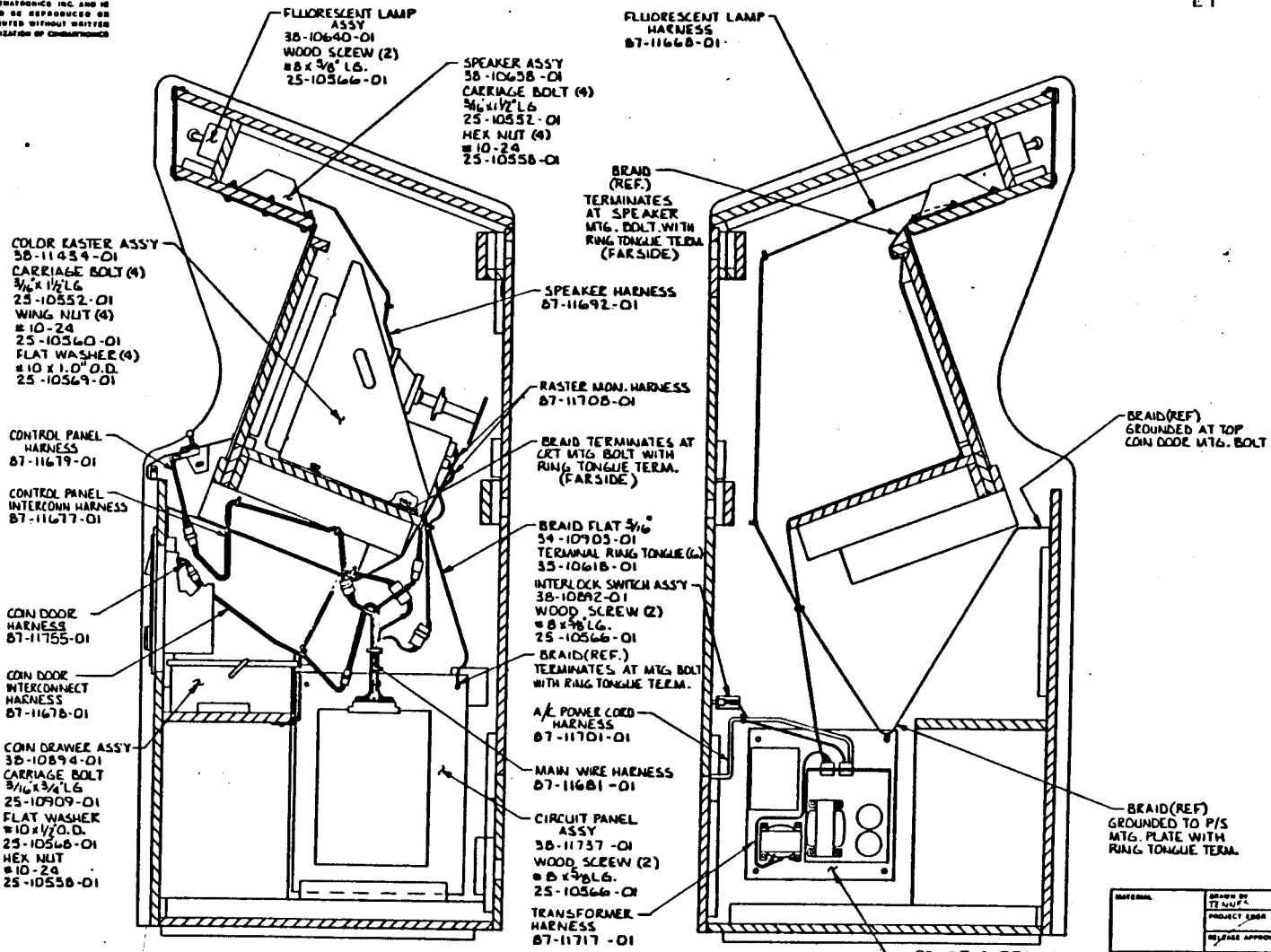
3

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DRAWN BY TE/MLP	DATE 2-7-51	CINCINNATI ELECTRONICS INC. 2500 CINCINNATI, OHIO	BY CHG. C. WARD
PROJECT	PROJECT ENGR. M/J/MLP	DATE		REV. 0
PROB.	DO NOT SCALE DWG. TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE 1/4"	DWG. TITLE TOP ASSEMBLY (N.B.) UPRIGHT (SHOET CABINET)	
	MODEL NO. D	DWG. NO. 11734-01	REV. 0	SHEET 2 OF 2

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 INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG. REL. ERN *019	4-5-82	<i>[Signature]</i>

D  
C  
B  
A

D  
C  
B  
A

A  
DRAWING NO. 31-40253

NOTES: UNLESS OTHERWISE SPECIFIED

SPEAKER  
38-10638-01

REGULATOR  
BOARD  
ASSY  
81-11685-01

CONT. PNL  
ASSY  
UPRIGHT  
38-11673-01

COIN DOOR  
ASSY  
38-11698-01

FLOOR. LAMP  
ASSY  
38-10640-01

TRANSFORMER  
ASSY  
38-11723-02

ASSY, BOARD  
WITH VOL. MOD. (N.B.)  
38-11733-02

RASTER COLOR  
MON. ASSY  
38-11434-01

POWER  
SUPPLY ASSY  
38-11700-01  
38-11700-02  
38-11700-03

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE 5-24-82	<b>CINEMATRONICS</b> INC El Cajon Ca 92020
	PROJECT ENGR:	DATE 4-5-82	
FINISH:	RELEASE APPROV:	DATE 4-5-82	DWG TITLE INTERCONNECT DIAGRAM UPRIGHT (N.B.)
	DO NOT SCALE DWG		MODEL NO. DWG NO. DWG NO. C 11-11734-01 A
TOLERANCE UNLESS OTHERWISE SPECIFIED		PROJECTION: SCALE: NONE	REV. A
		CODE IDENT	SHEET 1 OF 1

4

3

2

1

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1

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AUTHORIZATION OF CHEMTRONICS  
INC

CONNECTOR	FROM	TO	COLOR	AWG	PN	LENGTH	REMARKS
PI	PI-1	J5-1	BLACK	18	SC	11.0	MINI 6WD
	PI-A	J6-1		22			
	PI-2	J2-1					
	PI-B	J2-7	(TW)				
	PI-3	J5-7	BLACK	22	SC	11.0	MINI 6WD
	PI-C						NOT USED
	PI-4	J4-2	BROWN	22	SC	11.0	SPKR OUTPUT
	PI-D	J4-1	BLACK	22	SC	11.0	SPKR 6WD
	PI-E	J2-2	YELLOW	22	SC	11.0	CONJ 6WD
	PI-F						NOT USED
	PI-G						NOT USED
	PI-H	J5-4	YELLOW	18	SC	11.0	+12V
	PI-B	J2-6	BLUE (TW)	22			DEL CT MOD
	PI-J	J2-5	RED (TW)				VOL CT MOD
	PI-K	J2-4	RED				+5V
	PI-L	J6-2	RED	22	SC	11.0	+5V
	PI-M						NOT USED
	PI-N	J3-10	VIOLET	22	SC	11.0	PLR 1 UP
	PI-O	J3-6	VIOLET				PLR 2 UP
PI-P	J3-12	GRAY				PLR 1 DN	
PI-Q	J3-4	GRAY				PLR 2 DN	
PI-R	J3-14	BLUE				PLR 2 DN	
PI-S	J5-2	BLUE				PLR 2 DN	
PI-T	J3-15	ORANGE				PLR 1 LEFT	
PI-U	J3-1	ORANGE				PLR 2 LEFT	
PI-V	J3-5	WHITE				PLR 2 RIGHT	
PI-W	J6-2	RED				LET RED	
PI-X	J3-9	GREEN				PLR 1 RIGHT	
PI-Y	J6-4	BLUE				CRT BLUE	
PI-Z	J5-11	YELLOW				PLR 1 RIGHT	
PI-AA	J6-3	GREEN				CRT GREEN	
PI-AB	J3-5	YELLOW				PLR 2 RIGHT	
PI-AC	J6-5	WHITE	22	SC	11.0	TV 4VDC	

CONNECTOR	FROM	TO	COLOR	AWG	PN	LENGTH	REMARKS
J2 COIN DOOR MOLEY P/N 03-09-1093 OR EQUIV. OUR P/N 41-10649-01 9 CIR. MALE	J2-1	PI-1	BLACK	22	M		
	J2-2	PI-6	YELLOW		F		
	J2-3						NOT USED
	J2-4	PI-9	RED		M		
	J2-5	PI-3	RED (TW)		F		
	J2-6	PI-8	BLUE (TW)		M		
	J2-7	PI-5	BLACK (TW)	22	F		
	J2-8						NOT USED
	J2-9						NOT USED
J3 CNTRL PNL MOLEY P/N 03-09-7153 OR EQUIV. OUR P/N 41-10645-01 15 CIR FEMALE	J3-1	PI-2	ORANGE	22	F		
	J3-2	PI-P	BLUE	22	M		
	J3-3						NOT USED
	J3-4	PI-N	GRAY	22	M		
	J3-5	PI-18	YELLOW				
	J3-6	PI-M	VIOLET				
	J3-7	PI-3	BLACK				
	J3-8	PI-16	WHITE				
	J3-9	PI-16	GREEN				
	J3-10	PI-11	VIOLET				
J3-11	PI-17	YELLOW					
J3-12	PI-12	GRAY	22	M			
J3-13						NOT USED	
J3-14	PI-13	BLUE	22	M			
J3-15	PI-14	ORANGE	22	M			
J4 ▲	J4-1	PI-D	BLACK	22	F		
	J4-2	PI-4	BROWN	22	F		
	J4-3						NOT USED
J5 POWER SUPPLY MOLEY P/N 03-09-1172 OR EQUIV. OUR P/N 41-10647-01 12 CIR. MALE	J5-1	PI-1	BLACK	18	F		
	J5-2	PI-K	RED	22	F		
	J5-3						NOT USED
	J5-4	PI-H	YELLOW	18	M		
	J5-5						NOT USED
	J5-6						NOT USED
	J5-7						NOT USED
	J5-8						NOT USED
	J5-9						NOT USED
	J5-10						NOT USED
J5-11						NOT USED	
J5-12						NOT USED	
J6 MONITOR MOLEY P/N 03-09-1063 OR EQUIV. OUR P/N 41-10647-01 6 CIR. MALE	J6-1	PI-A	BLACK	22	F		
	J6-2	PI-S	RED				
	J6-3	PI-U	GREEN				
	J6-4	PI-T	BLUE				
	J6-5	PI-V	WHITE	22	F		
	J6-6						NOT USED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL	ERN 18	4-7-81

7. WIRE TO PI PINS B,B+J ARE TWISTED WIRES.

6. EDGE CONNECTOR PI PINS 7 + 11 ARE JUMPER.

5. REF. 87-11681-01 FOR DATA DRAWING.

4. SC - SOLDER CONNECT / AIRINK TUPING.

3. F - FEMALE SOCKET MOLEY P/N 02-09-1118 OUR P/N 35-10615-01.

2. M - MALE PIN MOLEY P/N 02-09-2118 OUR P/N 35-10614-01.

▲ J4 SPEAKER MOLEY P/N 03-09-1058 OR EQUIV. OUR P/N 41-10653-01 3 CIR. MALE.

NOTES: UNLESS OTHERWISE SPECIFIED

EXTERNAL	DESIGNED BY	DATE	CHEMTRONICS INC	BY	DATE
	PROJECT ENG	DATE			
INTERNAL	RELEASED BY	DATE	DWG TITLE		
	DO NOT SCALE DWG		WIRE LIST - MAIN HARNESS		
TOL:	TOLERANCE UNLESS OTHERWISE SPECIFIED	MODEL NO	DWG NO	REV	DATE
+1.0		SIZE	D	88-11681-01	A
-0.0		PROJECTION	SCALE	CON. NEXT	SHEET 1 OF 1
		1:1			



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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG. DES. ERN #016	8-5-67	[Signature]

BOLT, CARTRIDGE, BLK OX. 5/16" X 1/2"  
 25-10561-01 (4)  
 WASHER, FLAT, NO. 10, 25-10568-01 (4)  
 NUT, HEX. 10-24, 25-10558-01 (4)

BOLT, CARTRIDGE, PLK OX. 5/16" X 3/4"  
 25-10709-01 (4)  
 WASHER, FLAT, NO. 10, 25-10568-01 (4)  
 NUT, HEX. 10-24, 25-10558-01 (4)

BUTTON MOUNT SOCKET (RED)  
 37-11192-02  
 SWITCH W/MTRG 37-11573-01  
 PAL, NUT 25-10559-01

BUMPS (REF)

WIRE, PLAIN 24-10590-01

GREEN

(PB4)

(PB1)

(PB2)

LEXAN OVERLAY (REAR)  
 22-11674-01

ORANGE

VIOLET

BUMPS (REF)

WASHERS, CONTROL PANEL  
 27-11679-01

BLACK

WHITE

BUTTON MOUNT SOCKET (WHITE)  
 37-11192-01 (2)  
 SWITCH W/MTRG 37-11573-01 (2)  
 PAL, NUT 25-10559-01 (2)

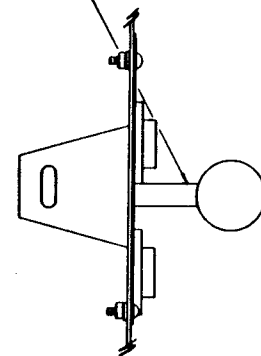
GRAY

YELLOW

BRN (NOT USED)

WIRE LIST			
FROM	TO	WIRE	LENGTH
PB2-1	PB1-1	24	2.0
PB1-1	T21/41-B	24	5.0
T21/41-B	T21/42-B	24	4.0
T21/42-B	T21/43-B	24	4.0
T21/43-B	T21/44-B	24	4.0
T21/44-B	PB4-1	BUMPS	9.0

JOYSTICK B POSITION  
 50-11745-01



REF DIA SHOWN FOR REFERENCE ONLY AND DOES NOT APPEAR ON PART.

L. CINEMATRONICS PART NO.

NOTE: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY F. RAINIER	DATE 1/1/68	CINEMATRONICS INC 3500 CA 94060
	PROJECT ENGR M. S. B.	DATE 1/1/68	
FINISH:	RELEASE APPROV [Signature]	DATE 1/1/68	DWG TITLE CONTROL PANEL (N.B.) UPRIGHT (N.B.)
	TOLERANCE UNLESS OTHERWISE SPECIFIED	PROJECTION SCALE FULL	MODEL NO 35-11673-01
CODE SHEET			SHEET 1 OF 1

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIG REL ERN # 013	3/25/82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
<u>P13</u>  MOLEX P/N 03-09-1093 OR EQUIV. OUR P/N  9 CIR. RECEPT.	P13-1	P3-7	BLACK	22	F	36.0	GND
	P13-2	P3-8	WHITE				2 PLYR START
	P13-3	P3-9	GREEN				1 PLYR START
	P13-4	P3-10	VIOLET				CONT. LEVEL UP
	P13-5	P3-11	YELLOW				JUMP
	P13-6	P3-12	GREY				CONT. LEVEL DN
	P13-7	P3-13	BROWN				FIRE
	P13-8	P3-14	BLUE				CONT. LEVEL RIGHT
	P13-9	P3-15	ORANGE				CONT. LEVEL LEFT
<u>P3</u>  MOLEX P/N 03-09-1152 OR EQUIV. OUR P/N  15 CIR. RECEPTACLE	P3-1						NOT USED
	P3-2						NOT USED
	P3-3						NOT USED
	P3-4						NOT USED
	P3-5						NOT USED
	P3-6						NOT USED
	P3-7	P13-1	BLACK	22	F	36.0	GND
	P3-8	P13-2	WHITE				2 PLYR START
	P3-9	P13-3	GREEN				1 PLYR START
	P3-10	P13-4	VIOLET				CONT. LEVEL UP
	P3-11	P13-5	YELLOW				JUMP
	P3-12	P13-6	GREY				CONT. LEVEL DN
	P3-13	P13-7	BROWN				FIRE
	P3-14	P13-8	BLUE				CONT. LEVEL RIGHT
	P3-15	P13-9	ORANGE				CONT. LEVEL LEFT

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE 3/24/82	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 3/25/82	
FINISH:	RELEASE APPROV:	DATE	DWG TITLE WIRE LIST- CONTROL PANEL INTERCONN. UPRIGHT (J.G.)
	DO NOT SCALE DWG TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. C 88-11677-01
PROJECTION:		SCALE:	REV. B
TOL. +1.0" -0.0"		CODE IDENT.	SHEET 1 OF 1

NOTES: UNLESS OTHERWISE SPECIFIED

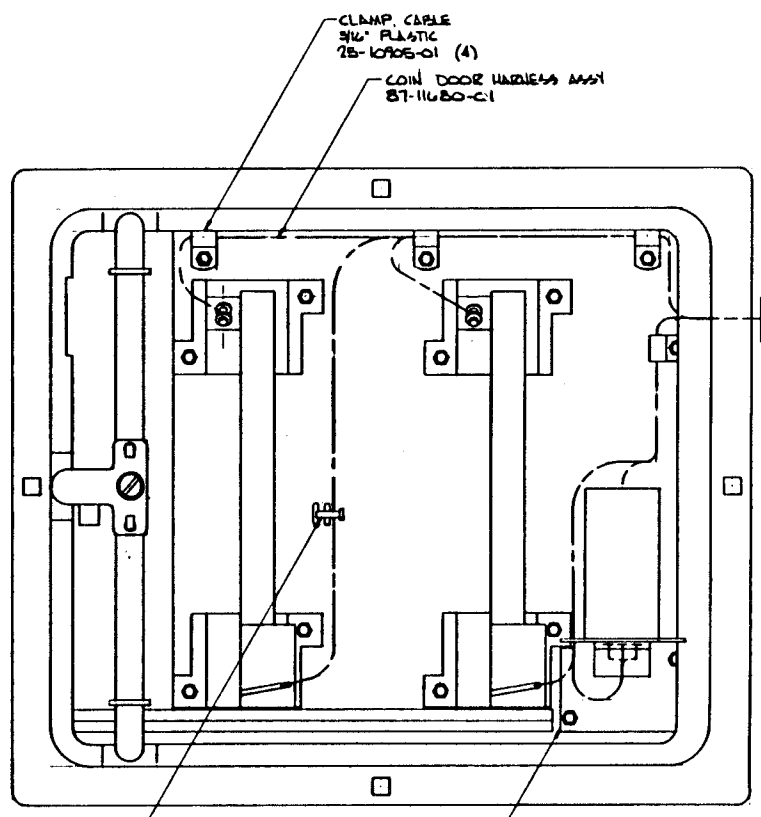
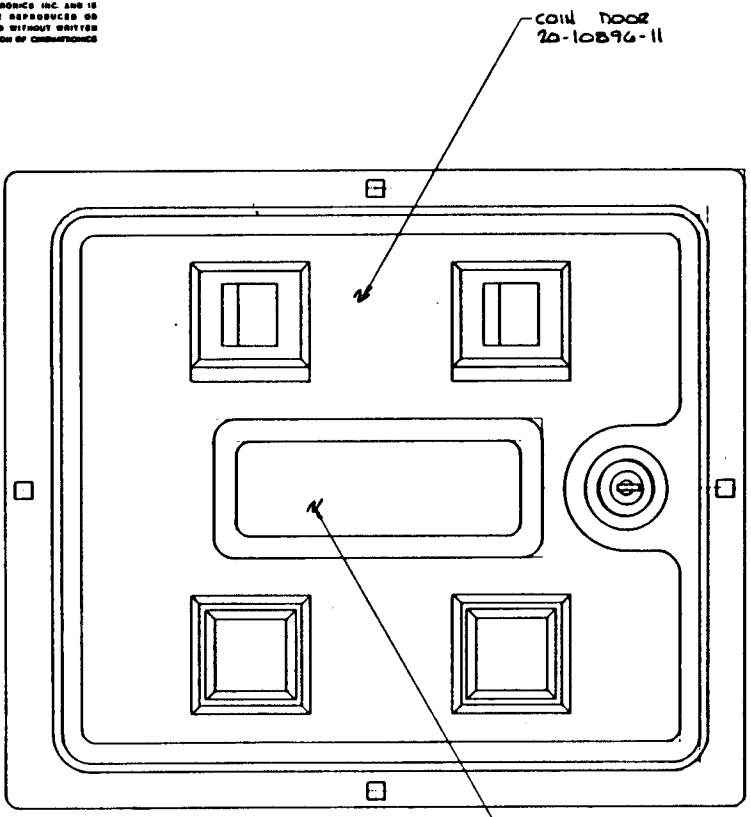
DRAWING 03-11-00333

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	DWG REL	ERN 15 11-72	<i>[Signature]</i>

D  
C  
B  
A



NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	PART NO	DATE	CINEMATRONICS INC	© Copy CA 92606	
	38-11702-01	11/72			
PROJECT	PROJECT ENG	DATE	DWG TITLE		
	38-11702-01	11/72	COIN DOOR ASSY W/LAMP COCKTAIL/UPRIGHT (A.G.)		
PROJEN	RELEASE APPROV	DATE	MODEL NO	DWG NO	REV
	38-11702-01	11/72			
DO NOT SCALE DWG			SIZE	0	
TOLERANCE UNLESS OTHERWISE SPECIFIED			PROJECTION	SCALE	
			1/4" = 1"	FULL	
			CONV	100%	SHEET 1 OF 1

8 7 6 5 4 3 2 1

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIG. REL. ERN #013	3-25-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS	
<b>J1</b> CDIN DDR INTERFACE MDLEX # 03-09-2092 ⚠ 41-10885-01	J1-1	(VOL)	(BLK)	(22)	(F)		⚠	
	J1-2	(COUNTER)		(22)	(M)		⚠	
	J1-3	RT. SWITCH	GRY	22	M	20.0"		
	J1-3	LFT. SWITCH	YELLOW	22	M	24.75"		
	J1-4	(COUNTER)		(22)	(M)		⚠	
	J1-5	(VOL)	(RED)	(22)	(F)		⚠	
	J1-6	(VOL)	(BLUE)	(22)	(F)		⚠	
	J1-7	RT. SWITCH	BLK	22	F	20.0"	SWITCH GND	
	J1-8	LAMP 1	WHT	⚠	22	M	14.25"	LIGHT
	J1-8	LAMP 2	WHT	⚠	22	M	19.25"	LIGHT
	J1-9	LAMP 1	BRN	⚠	22	M	14.25"	LIGHT
	J1-9	LAMP 2	BRN	⚠	22	M	19.25"	LIGHT
	LFT. SWITCH	RT. SWITCH	BLK	⚠	22	30.75"	JUMPER	

- ⚠ TO BE ADDED AT NEXT ASSEMBLY.
- ⚠ STRIP BACK 3/8" FOR SOLDER
- ⚠ CINEMATRONICS PART NO.

NOTES

TOL.  
+1.0"  
-0.0"

MATERIAL:	DRAWN BY: TENJES	DATE 3/14/82	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 3/25/82	
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV:	DATE	DWG TITLE WIRE LIST CDIN DDR HARNESS UPRIGHT / COCKTAIL JG
	DO NOT SCALE DWG		MODEL NO.
	TOLERANCE: UNLESS OTHERWISE SPECIFIED	SCALE:	DWG NO. 88-11680-01
	PROJECTION:	SCALE:	REV. B
			CODE IDENT.
			SHEET 1 OF 1

BRUNING 40-21 40423

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## REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A	ORIG. REL. #016	4-14-82	<i>[Signature]</i>
B	LENGTH CHG'D ELO#173	4-16-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS	CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
P1 COIN DOOR MOLEX P/N 03-09-1093 △41-10649-01	P1-1 △	P2-7	BLACK	22	M	34.25		P2 MAIN WIRE HARZ MOLEX P/N 03-09-2092 △41-10885-01	P2-1	P1-7	BLACK		F		
	P1-2	P2-4	WHITE	22	F	34.25			P2-1	P1-9	BROWN		-		
	P1-2	CRI-CATHODE							P2-2	P1-3	YELLOW		M		
	P1-3	P1-4	YELLOW	22	F	3.0			P2-3	P1-4	GREY		M		
	P1-3	P2-2	YELLOW		-	34.25			P2-4	P1-2	WHITE		F		
	P1-4	P2-3	GREY		F	34.25			P2-4	CRI-ANODE					
	P1-4	P1-3	YELLOW	22	-				P2-5 △	P1-5	RED		M		
	P1-4	CRI-ANODE							P2-6 △	P1-6	BLUE		F		
	P1-5 △	P2-5	RED	22	M	34.25			P2-7 △	P1-1	BLACK		M		
	P1-6 △	P2-6	BLUE		M				P2-8	CRI-CATHODE					
P1-7	P2-1	BLACK		M			P2-8	P1-8	RED		M				
P1-8	P2-8	RED		F			P2-9						NOT USED		
P1-9	P2-1	BROWN	22	F	34.25										

- △ THIS WIRES ARE TWISTED.  
2. CATHODE SIDE  ANODE SIDE OF DIODE.  
△ CINEMATRONICS INC. PART NO.  
NOTES: UNLESS OTHERWISE SPECIFIED

TOL:  
+1.0  
-0.0

MATERIAL:	DRAWN BY: P. ZAMIREZ	DATE 4-15-82		El Cajon Ca 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 4/16/82		DWG TITLE WIRE LIST - COIN DOOR INTERCONNECT UPRIGHT/COCKTAIL (J.G.#N.B.)
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE 4/17/82	MODEL NO.	DWG NO. 88-11755-01
	DO NOT SCALE DWG		DWG SIZE C	REV. B
TOLERANCE: UNLESS OTHERWISE SPECIFIED		PROJECTION: 	SCALE: FULL	SHEET 1 OF 1
CODE IDENT.				

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN #13	3-26-81	<i>[Signature]</i>
B	ECO 164 ADD 21A To PB	3-24-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
<u>P6</u>	P6-1	P7-3	BLK	22	M	15.75	
CPU BD	P6-1	P8-3	BLK	22	M	↑ ↓ 15.75	
MOLEX #	P6-2	P8-6	RED	22	M		
03-09-2062	P6-3	P8-5	GRN	22	M		
⚠ 41-10954-01	P6-4	P8-4	BLU	22	M		
	P6-5	P7-1	WHT	22	M		
	P6-5	P7-2	WHT	22	M		15.75
	P6-6						NOT USED
<u>P7</u>							
RASTER MON	P7-1	P6-5	WHT	22	F	} ⚠	
MOLEX #	P7-2	P6-5	WHT	22	F		
09-50-7031	P7-3	P6-1	BLK	22	F		
⚠ 41-11727-01							
<u>P8</u>	P8-1						NOT USED
	P8-2						NOT USED
RASTER MON	P8-3	P6-1	BLK	22	F	} ⚠	
MOLEX #	P8-4	P6-4	BLUE	22	F		
09-50-7061	P8-5	P6-3	GRN	22	F		
⚠ 41-11724-01	P8-6	P6-2	RED	22	F		

3. M = MALE PIN, MOLEX P/N 02-09-2118.  
 ⚠ F = CRIMP TERMINALS MOLEX P/N 08-50-0106  
 ⚠ P/N 35-10880-01.

⚠ CINEMATRONICS PART NO.

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY:	DATE:	<b>CINEMATRONICS</b> INC. El Cajon Ca 92020
	TENNIS	3-9-81	
FINISH:	PROJECT ENGR:	DATE:	DWG TITLE WIRE LIST- RASTER MONITOR TO GAME BD UPRIGHT/COCKTAIL (J.G.)
		1/15/81	
TOLERANCE	RELEASE, APPROV:	DATE:	MODEL NO. DWG SIZE DWG NO. REV. 88-11711-01 B
		4/1/82	
+ 1.0 - 0.0	DO NOT SCALE DWG	TOLERANCE: UNLESS OTHERWISE SPECIFIED	CODE IDENT. SHEET OF
	PROJECTION:	SCALE:	

4

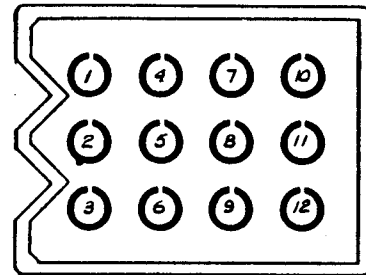
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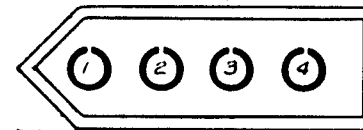
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



J1

J1 CONNECTOR DATA		
PIN NO.	WIRE COLOR	FUNCTION
J1-1	GRN	CHASSIS GND
J1-2	WHT	TXFMR LUG #3
△ J1-3	RED/BLK	TXFMR LUG #1
J1-4	BROWN (2)	6.3VAC GND
J1-5	WHITE (2)	6.3VAC
△ J1-6	YEL	SPOT KILL (250uF)
△ J1-7	RED/GRAY	+25V
△ J1-8	BLU (2)	-25V
J1-9	ORG (2)	+5V
J1-10	ORG	+5V
J1-11	BLK (2)	+5V RETURN
J1-12	BLK/WHT	-25V RETURN

- △ SAMP INLINE FUSE.
- △ .5AMP INLINE FUSE.
- △ SAMP INLINE CIRCUIT BREAKER CB 1.
- △ SAMP INLINE CIRCUIT BREAKER CB 2.



J2

J2 CONNECTOR DATA		
PIN NO.	WIRE COLOR	FUNCTION
J2-1	BLACK	TXFMR LUG #1
J2-2	WHITE	TXFMR LUG #3
J2-3	BLACK	TXFMR LUG #2
J2-4	WHITE	TXFMR LUG #4

POWER SUPPLY CONNECTORS  
 BOTH J1 & J2 AS VIEWED FROM THE  
 FRONT OF POWER SUPPLY.

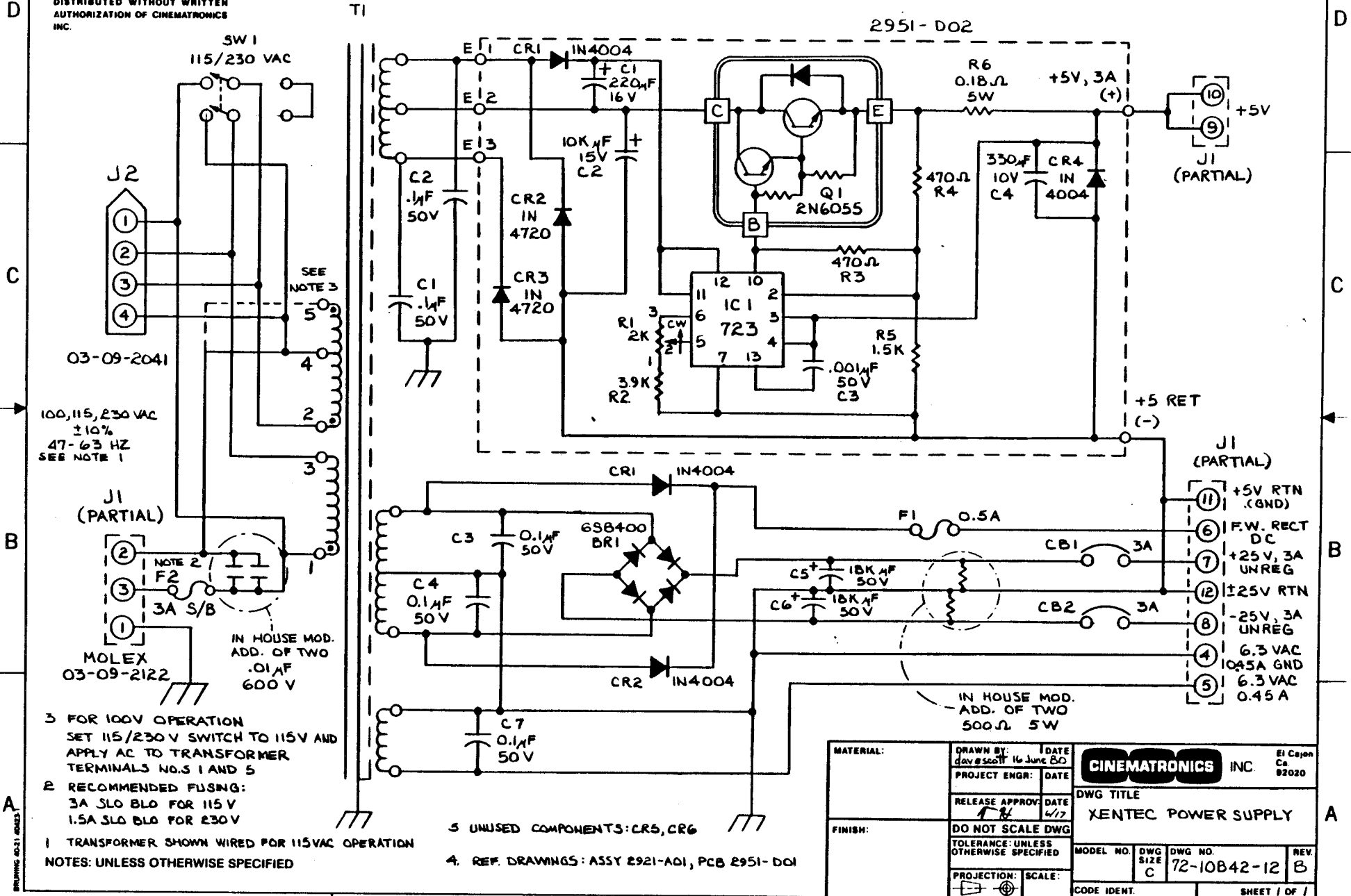
NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY: C. Williams	DATE 2/22/77		El Cajon Ca 92020
	PROJECT ENGR:	DATE 9-29		DWG TITLE POWER SUPPLY PINOUT ILLUSTRATION
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV: CEW	DATE 9-29	MODEL NO.	DWG NO. 72-10877-03
	DO NOT SCALE DWG TOLERANCE: UNLESS OTHERWISE SPECIFIED		DWG SIZE C	REV. A
PROJECTION: FIRST ANGLE	SCALE:	CODE IDENT.	SHEET / OF /	

DRAWING 40-21-4023

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



100, 115, 230 VAC  
 ±10%  
 47-63 HZ  
 SEE NOTE 1

- 3 FOR 100V OPERATION  
 SET 115/230 V SWITCH TO 115V AND  
 APPLY AC TO TRANSFORMER  
 TERMINALS NO. 5 1 AND 5
- 2 RECOMMENDED FUSING:  
 3A SLO BLO FOR 115V  
 1.5A SLO BLO FOR 230V

1 TRANSFORMER SHOWN WIRED FOR 115VAC OPERATION  
 NOTES: UNLESS OTHERWISE SPECIFIED

- 5 UNUSED COMPONENTS: CR5, CR6
- 4. REF. DRAWINGS: ASSY 2921-A01, PCB 2951-DO1

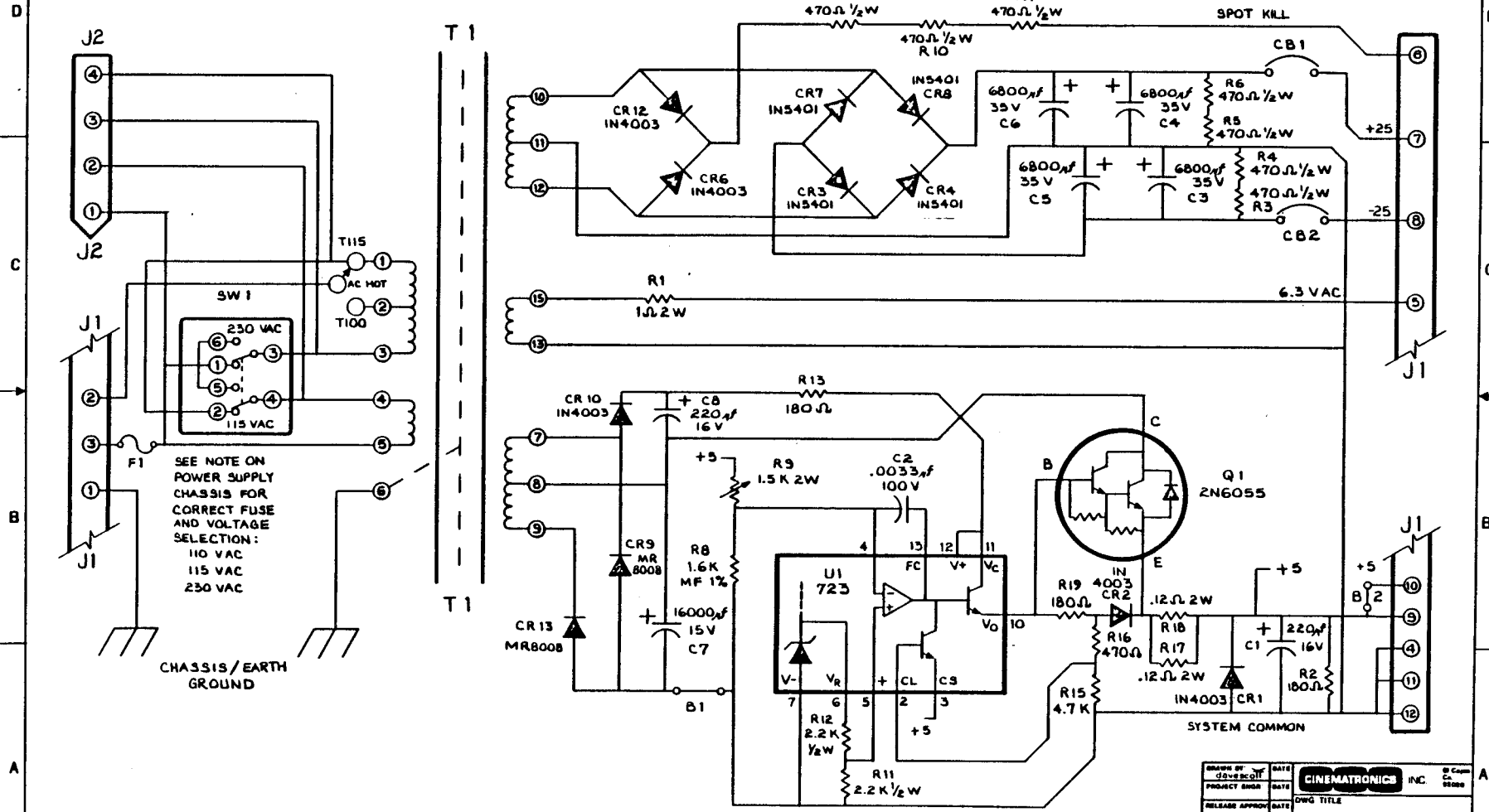
MATERIAL:	DRAWN BY: dav@scott 16 June 80	DATE	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
	PROJECT ENGR:	DATE	
FINISH:	RELEASE APPROV: [Signature]	DATE: 4/77	DWG TITLE: XENTEC POWER SUPPLY
	DO NOT SCALE DWG		MODEL NO. DWG NO. REV.:
TOLERANCE: UNLESS OTHERWISE SPECIFIED		SCALE:	72-10B42-12 B
PROJECTION: [Symbol]		CODE IDENT.	SHEET / OF /

BRUNING 40-31 40453



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REV	DESCRIPTION	DATE	APPROVED



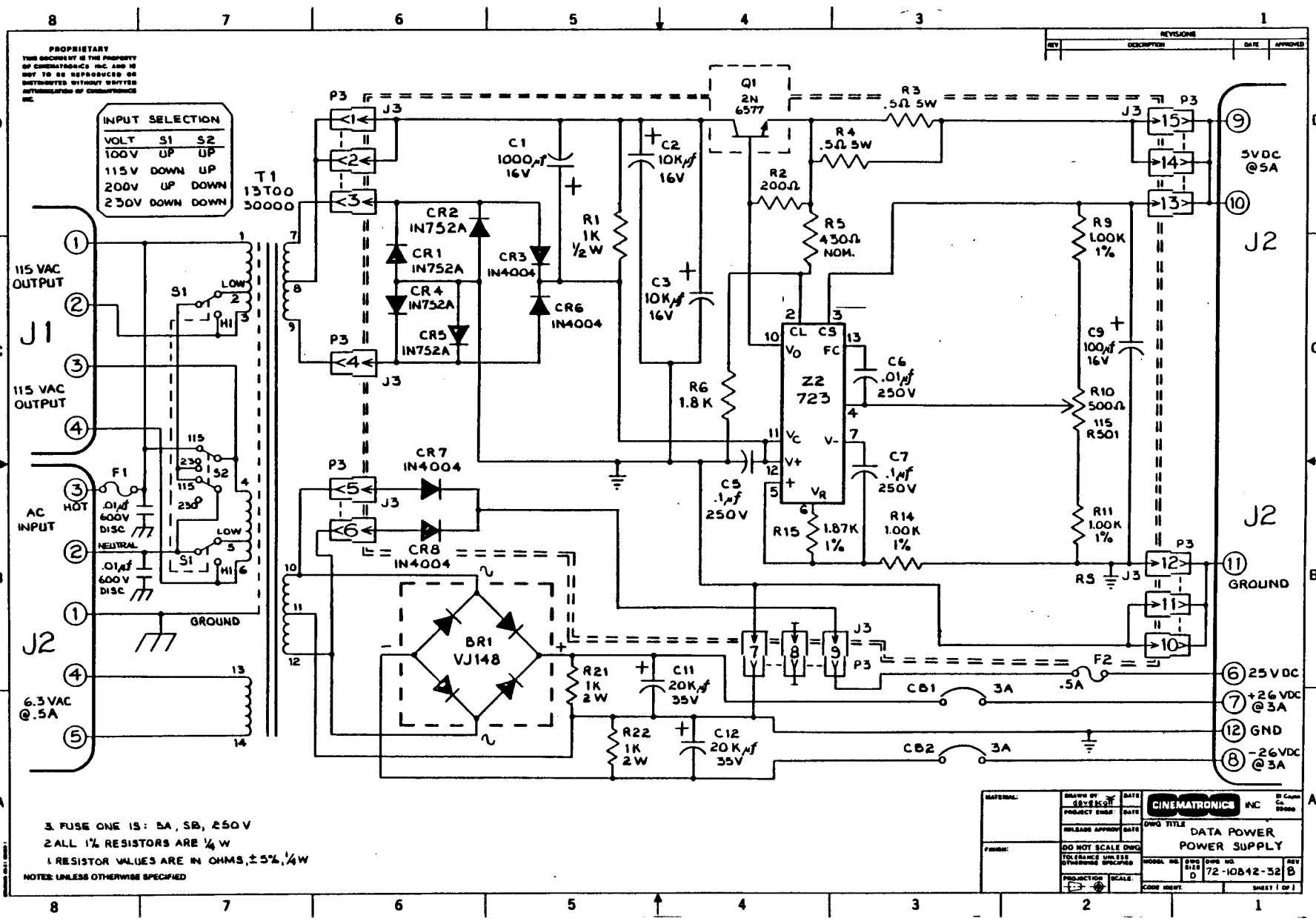
SEE NOTE ON  
POWER SUPPLY  
CHASSIS FOR  
CORRECT FUSE  
AND VOLTAGE  
SELECTION:  
110 VAC  
115 VAC  
230 VAC

CHASSIS/EARTH  
GROUND

1. SCHEMATIC SET FOR 115 VAC OPERATION

NOTES: UNLESS OTHERWISE SPECIFIED

DRAWN BY dave boett	DATE	CINEMATRONICS INC © Copyright Ca. 1988
PROJECT ENGR	DATE	
RELEASE APPROV	DATE	DWG TITLE CONDOR POWER SUP
DO NOT SCALE DWG		MODEL NO D
TOLERANCE UNLESS OTHERWISE SPECIFIED		DWG NO 72-10842-22
PROJECTION SCALE	SCALE	REV A
CONV SHEET		SHEET 1 OF 1



**INPUT SELECTION**

VOLT	S1	S2
100V	UP	UP
115V	DOWN	UP
200V	UP	DOWN
230V	DOWN	DOWN

3 FUSE ONE IS: 5A, SB, 250V  
 2 ALL 1% RESISTORS ARE 1/4 W  
 1 RESISTOR VALUES ARE IN OHMS, ±5%, 1/4 W  
 NOTES: UNLESS OTHERWISE SPECIFIED

REV	DESCRIPTION	DATE	APPROVED

MATERIAL:	DRAWN BY: <b>REVISED:</b>	DATE:	<b>CINEMATRONICS INC</b> © Copy 00000
PROJECT ENG:	DATE:	DATE:	
RELEASE APPROV:	DATE:	DHW TITLE	
<b>DATA POWER POWER SUPPLY</b>			
DO NOT SCALE DWG	TOLERANCE UNLESS OTHERWISE SPECIFIED	MODEL NO:	DWG NO:
PRODUCTION SCALE:	DATE:	72-10842-32 B	REV:
CONV. UNIT:	DATE:	0	7
SHEET 1 OF 1			

4

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1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	O1	PROTOTYPE	4 DEC 80	RA
	A	PRODUCTION RELEASE	13 JAN 81	RA
	B	ADD C9,10 - SEE ECO 0025 "A"	29 JAN 81	RA

D

D

C

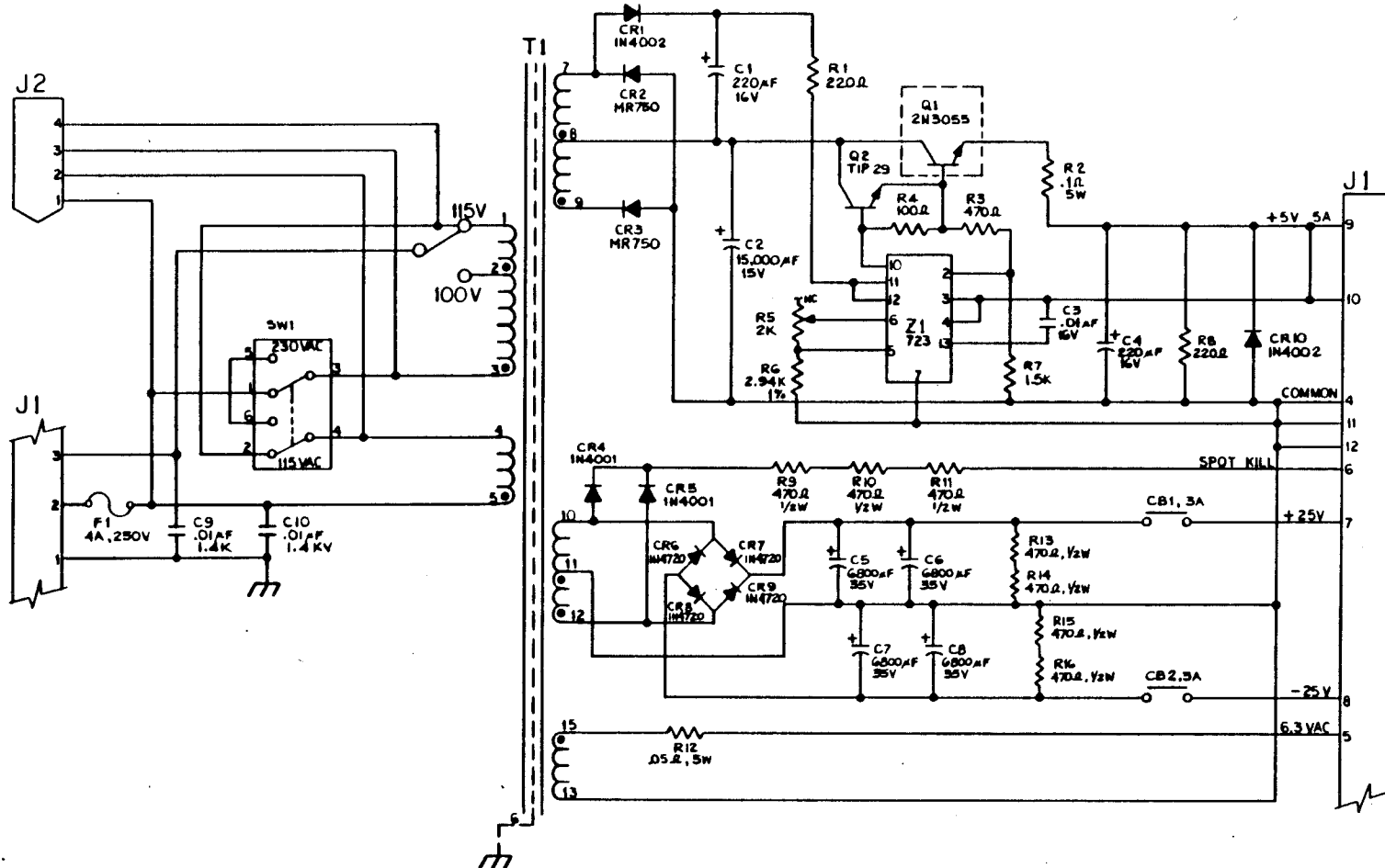
C


B

B

A

A



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES ± ± ± XXX ±		CONTRACT NO	
MATERIAL		APPROVALS	DATE
FINISH		DRAWN C. ESCALERAS	4 DEC 80
62A0013-00 0025		CHECKED R. Prohm	12/4/80
NEXT ASSY USED ON		 <b>SCHEMATIC</b>	
APPLICATION			
DO NOT SCALE DRAWING		SIZE C	CODE IDENT NO 12A0028-00
		SCALE NONE	DRAWING NO 12A0028-00
		REV B	
		SHEET 1 of 1	

8

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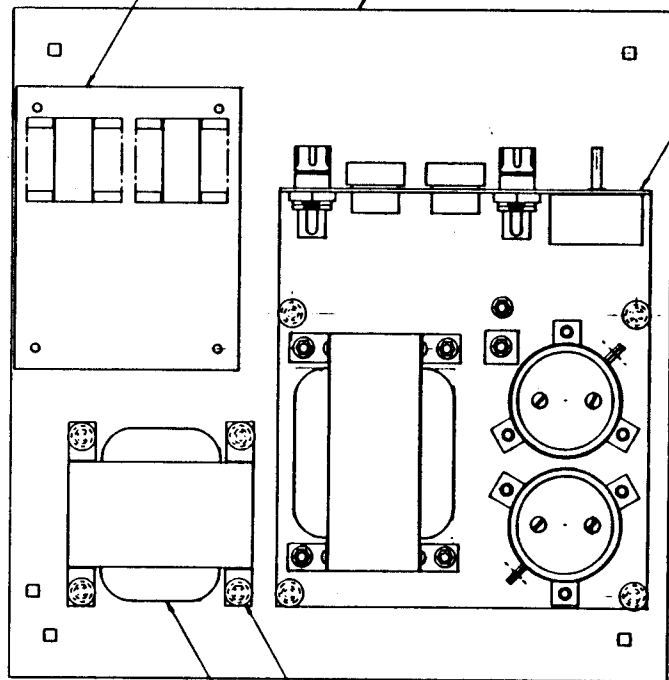
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DESK REL	1-15-61	[Signature]

REGULATOR P.C. BOARD  
 38-11605-01

MOUNTING PLATE - PWR SUPPLY & TRANS  
 20-11606-01

POWER SUPPLY  
 27-10547-50  
 BOLT, CARBIDE, 3/16" x 1/2", 25-10551-01 (4)  
 WASHER, FLAT, No. 10 x 1/2", 25-10548-01 (4)  
 WASHER, LOCK, No. 10 INTERNAL, 25-10572-01 (4)  
 NUT, HEX, No. 10-24, 25-10555-01 (4)



SEE DETAIL "B"

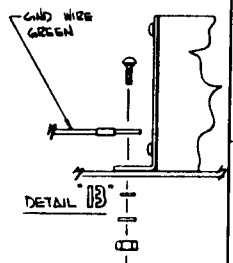
TRANSFORMER  
 27-11717-01  
 BOLT, CARBIDE, 3/16" x 1/2"  
 25-10551-01 (4)  
 WASHER, FLAT, No. 10 x 1/2", 25-10548-01 (4)  
 WASHER, LOCK, No. 10 INTERNAL, 25-10572-01 (4)  
 NUT, HEX, No. 10-24, 25-10555-01 (4)



VIEW A-A

DUAL LOCKING PCB  
 SPACER (4)  
 P/N 25-11607-01

Ø SHOWN



DETAIL B-B

NOTES: UNLESS OTHERWISE SPECIFIED

8

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1

MATERIAL:	DESIGNED BY	DATE	CINEMATRONICS INC 51 CAMP CA 94020
	P. SCHLES	1/2/61	
FINISH:	PROJECT CODE	DATE	DWG TITLE
	1175	1/2/61	
	RELEASE AUTHORITY	DATE	MODEL NO.
	DO NOT SCALE DWG		SIZE
	TOLERANCE UNLESS OTHERWISE SPECIFIED		38-11700-01
	PROJECTION	SCALE	REV
	1-3	FULL	A
			SHEET 1 OF 2

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	616 PCL	22N 75	4-1-82

BOLT, ARRANGE, 3/16" X 1/2", 25-10561-01 (4)  
WASHER, FLAT, NO. 10 X 1/2", 25-10568-01 (4)  
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
NUT, HEX, NO. 10-24, 25-10565-01 (4)

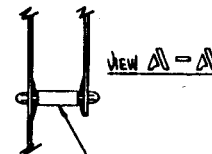
ROUTING PLATE- PWR SWY & TERM.  
20-11606-01

SEE DETAIL 'D'

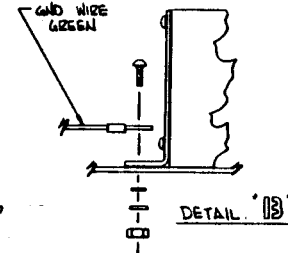
TRANSFORMER, 87-11717-01  
BOLT, ARRANGE, 3/16" X 1/2", 25-10561-01 (4)  
WASHER, FLAT, NO. 10 X 1/2", 25-10568-01 (4)  
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
NUT, HEX, NO. 10-24, 25-10565-01 (4)

REGULATOR P.C. Assy  
20-11606-01

POWER SUPPLY- CONDOR (-02)  
82-10847-20  
POWER SUPPLY- MILIT POWER (-03)  
82-10847-40



DUAL LOCKING P.C.B.  
SPACER  
25-11607-01 (4)



= (1) 2 NOTED  
= (1) 3 NOTED

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DESIGNED BY S. RAJWAZ	DATE 1/82	© CINEMATRONICS INC Co. 80000
	PROJECT ENGINEER	DATE	
FINISH:	RELEASE APPROVED	DATE	DWG TITLE POWER SUPPLY Assy
	DO NOT SCALE DWG		NO. 10847-20
	TOLERANCE UNLESS OTHERWISE SPECIFIED		DWG NO D 38-11700
	PROJECTION SCALE FULL		REV A
			SHEET 2 OF 2

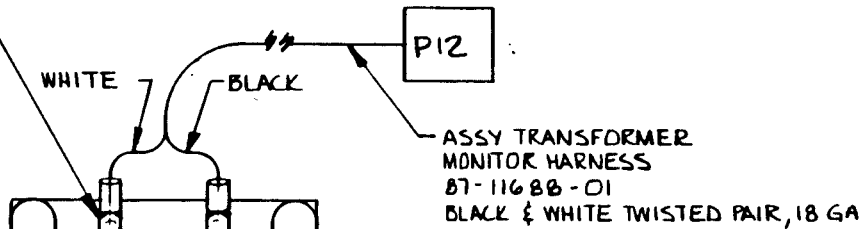
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN#018	4-16-82	<i>[Signature]</i>

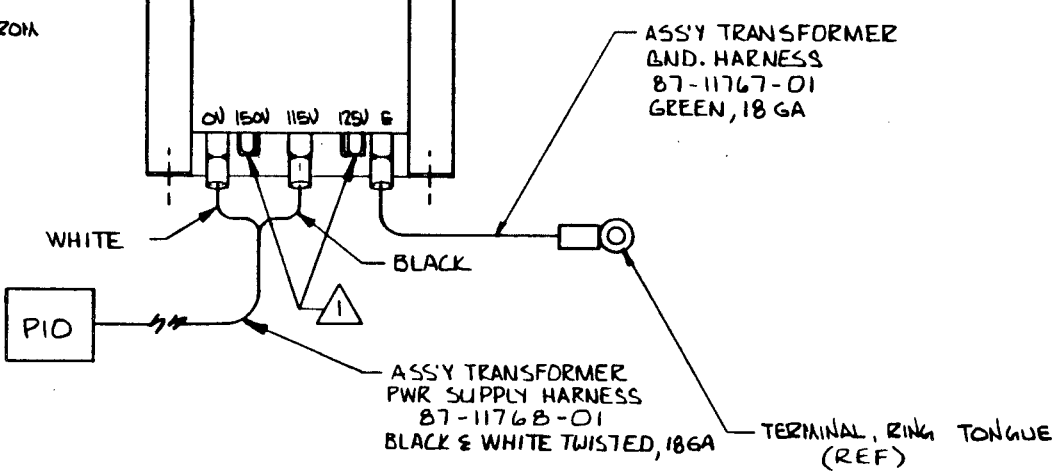
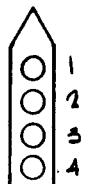
AS VIEWED FROM  
WIRE SIDE.



FEMALE QUICK  
DISCONNECTS  
(REF)



AS VIEWED FROM  
WIRE SIDE.



⚠ ADD 3/32 HEAT SHRINK TUBING TO ALL TERMINALS.

NOTES: UNLESS OTHERWISE SPECIFIED

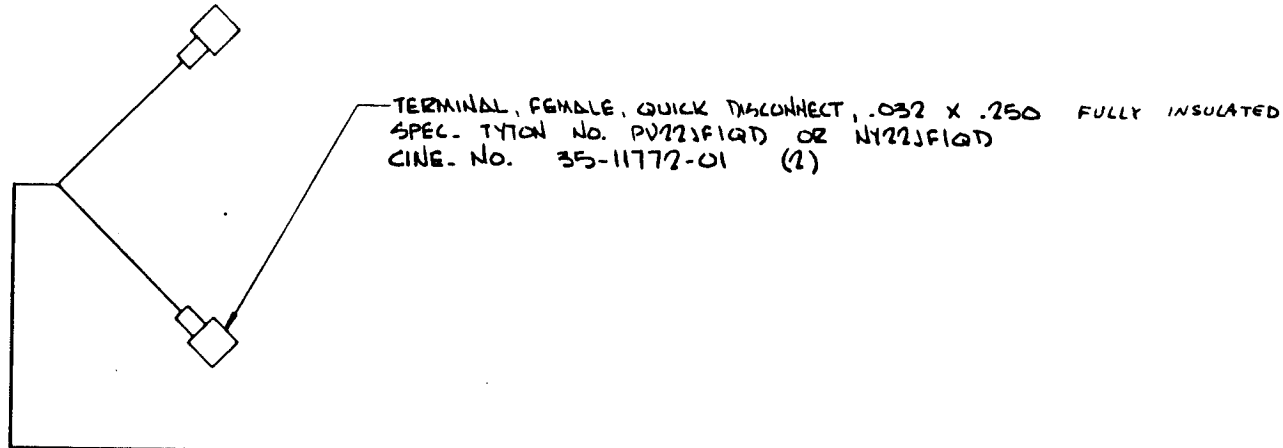
TOLERANCE  
+1.0  
-0.0

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE 4-16-82	<b>CINEMATRONICS</b> INC. El Cajon Ca 92020
	PROJECT ENGR: K. F. G.	DATE 4-16-82	
FINISH:	RELEASE APPROV:	DATE	DWG TITLE ASSY, TRANSFORMER & color PASTER (J.G.)
	DO NOT SCALE DWG		MODEL NO
TOLERANCE: UNLESS OTHERWISE SPECIFIED		PROJECTION:	SCALE: NONE
PROJECTION:		SCALE: NONE	MODEL NO
DWG SIZE C		DWG NO. 38-11723-01	REV. A
CODE IDENT.		SHEET 1 OF 1	

DRAWING 4021 40223

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERU #018	4-16-82	<i>[Signature]</i>



PI2



PI2  
2 CIR MALLG.  
MOLEX NO. 19-09-1029  
CINE. NO. 41-11766-01

PIN	COLOR	AWG	PIN	LENGTH	FUNCTION
1	BLACK	18	F	26.0	
2	WHITE	18	F	26.0	

1. F = FEMALE SOCKET, MOLEX NO. 02-09-1118.  
NOTES: UNLESS OTHERWISE SPECIFIED

TOL
+1.0
-0.0

MATERIAL:	DRAWN BY: F. RAJAN	DATE: 4/16/82		El Cajon Ca 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 4/16/82		
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE: 4/16/82	DWG TITLE HARNESS ASSY - TRANSF. * MONITOR	
	DO NOT SCALE DWG		MODEL NO	DWG NO
TOLERANCE: UNLESS OTHERWISE SPECIFIED		SCALE: FULL	SIZE C	REV A
PROJECTION:			CODE IDENT.	SHEET 1 OF 1

DRAWING 02-31-00423

4

3

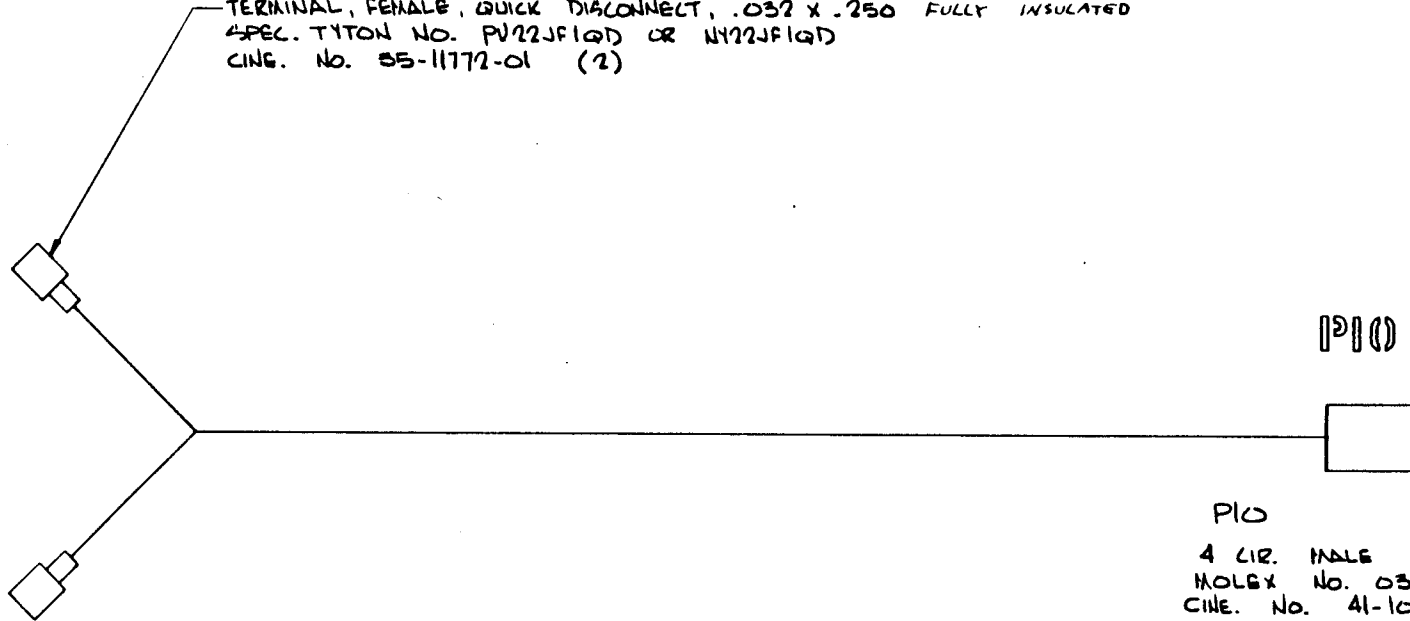
2

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	0216 REL	ERN #018	4-16-82 <i>[Signature]</i>

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TERMINAL, FEMALE, QUICK DISCONNECT, .032 x .250 FULLY INSULATED  
 SPEC. TYTON NO. PV22JF1QD OR NY22JF1QD  
 CING. No. 85-11772-01 (2)



P10  
 4 CIR. MALE  
 MOLEX No. 03-09-1042  
 CINE. No. 41-10658-01

PIN	COLOR	AWG	PIN	LENGTH	FUNCTION
1	BLACK	18	M	15.0	NOT USED
2	WHITE	18	M	15.0	NOT USED
3					
4					

1. M = MALE PIN, MOLEX No. 02-09-211B.  
 NOTES: UNLESS OTHERWISE SPECIFIED

TOL.
+1.0
-0.0

MATERIAL:	DRAWN BY: F. RUIZ	DATE: 4/1/82	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
FINISH:	PROJECT ENGR: [Signature]	DATE: 4/6/82	
DO NOT SCALE DWG			DWG TITLE HARNESSES BASSY- TRANSF. * POWER SUPPLY
TOLERANCE: UNLESS OTHERWISE SPECIFIED			MODEL NO
PROJECTION:  FULL			DWG NO 87-11768-01
SCALE:			REV A
CODE IDENT.			SHEET 1 OF 1

DRAWING 80-11-00001

4

3

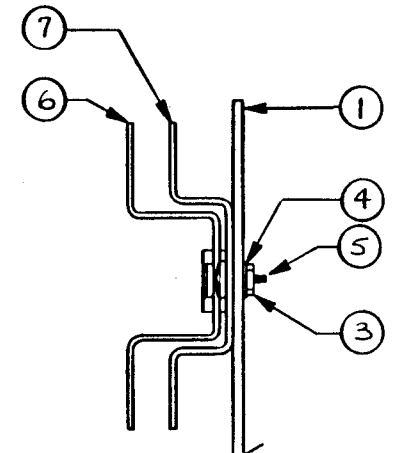
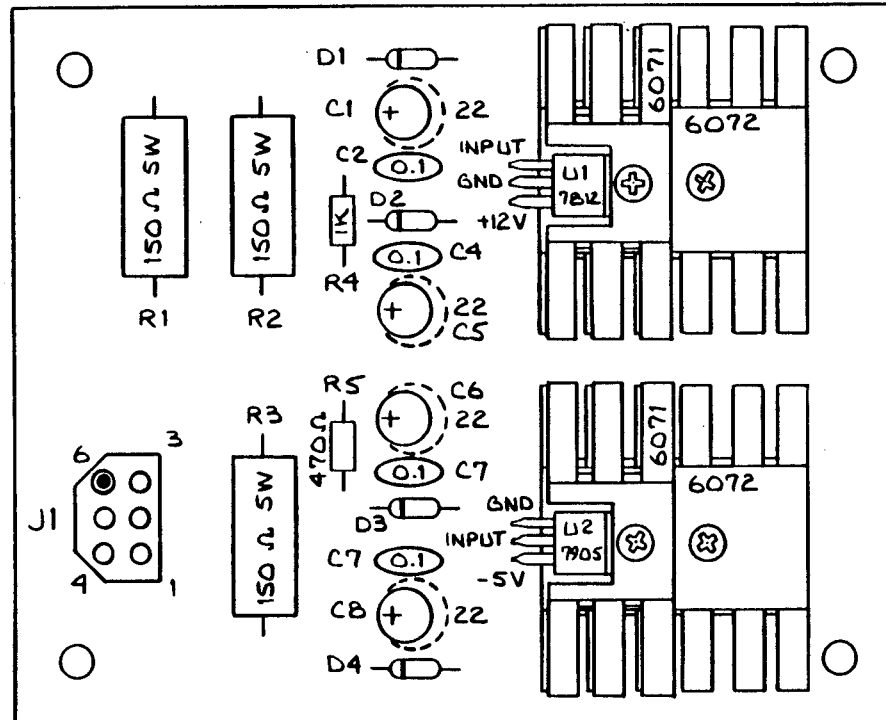
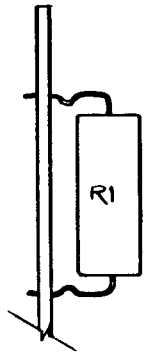
2

1



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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIGINAL RELEASE ERN 012	19 MAR 1982	<i>[Signature]</i>



REFERENE OF  
 ITEM NUMBER ON  
 ENGINEERING  
 PARTS LIST  
 PL 11685

5. R4 AND R5 ARE 1/4WATT, 5% CARBON, VALUES ARE IN OHMS

4. ELECTROLYTIC CAPACITOR  
 WITH POLARITY MARK  
 AND LOCATION FOR OVERSIZED CAPACITOR

3. IS A DISK CAPACITOR

2. CAPACITOR VALUES ARE IN MICRO FARADS, 50 V

1. ALL DIODES ARE 1N4003

NOTES: UNLESS OTHERWISE SPECIFIED

16 MARCH 1981

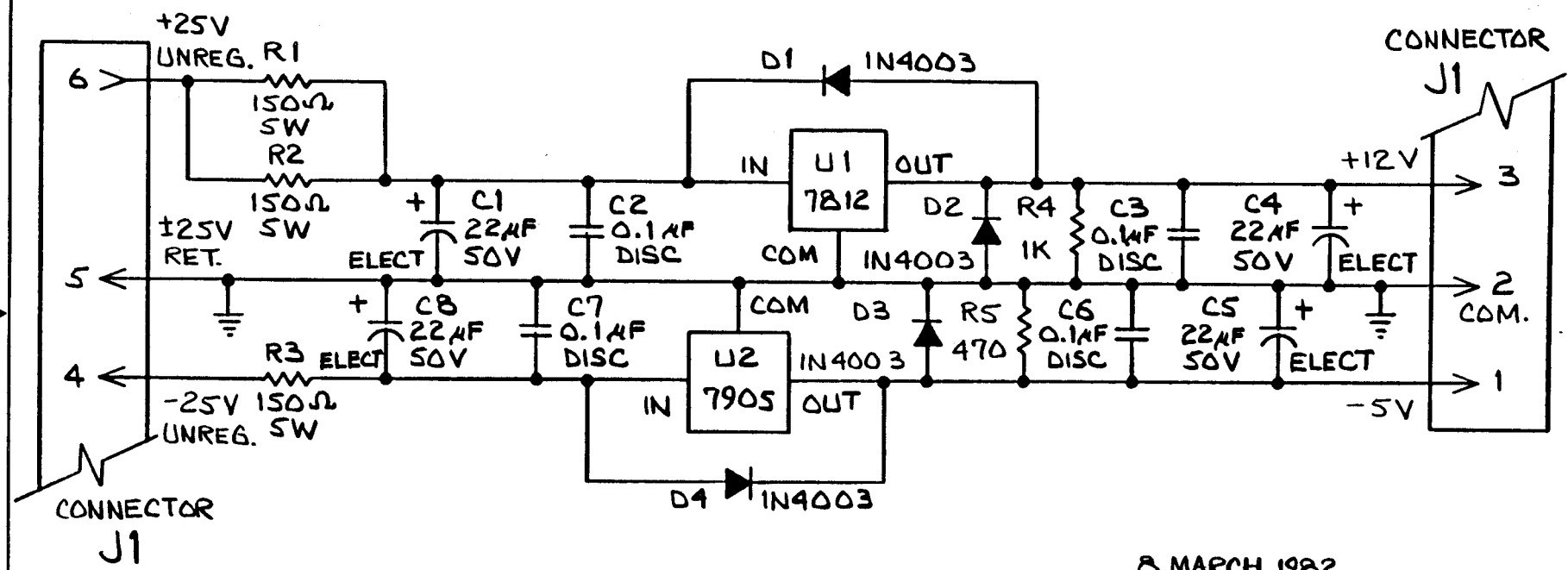
MATERIAL:	DRAWN BY: <i>[Signature]</i>	DATE: <i>[Signature]</i>		El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: <i>[Signature]</i>		DWG TITLE
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE: <i>[Signature]</i>	P.C.A. REGULATOR + 12 AND -5 VOLTS	
	DO NOT SCALE DWG		MODEL NO.	DWG NO.
TOLERANCE: UNLESS OTHERWISE SPECIFIED		PROJECTION:	SCALE: 2:1	REV. B
CODE IDENT.			81-11685-01	SHEET 1 OF 7

DRAWING 40-21-04013

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIGINAL RELEASE ERN 012	19 MAR 1982	<i>[Signature]</i>



8 MARCH 1982

2. R4 AND R5 VALUES ARE IN OHMS  
 1. R4 AND R5 ARE 1/4 WATT, 5% CARBON  
 NOTES: UNLESS SPECIFIED OTHERWISE

MATERIAL:	DRAWN BY: <i>dawson</i>	DATE: <i>3/1/82</i>	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020	
	PROJECT ENGR: <i>[Signature]</i>	DATE: <i>3/1/82</i>		
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV: <i>[Signature]</i>	DATE: <i>3/1/82</i>	DWG TITLE <b>REGULATOR +12, -5 VOLTS</b>	
	DO NOT SCALE DWG		MODEL NO.	DWG NO.
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		SIZE B	72-11685-00
PROJECTION:	SCALE:	CODE IDENT.		SHEET 1 OF 1

BRUNING 40-21 40423

4

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL	ERN 15	4-7-67 <i>[Signature]</i>

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D

D

C

C

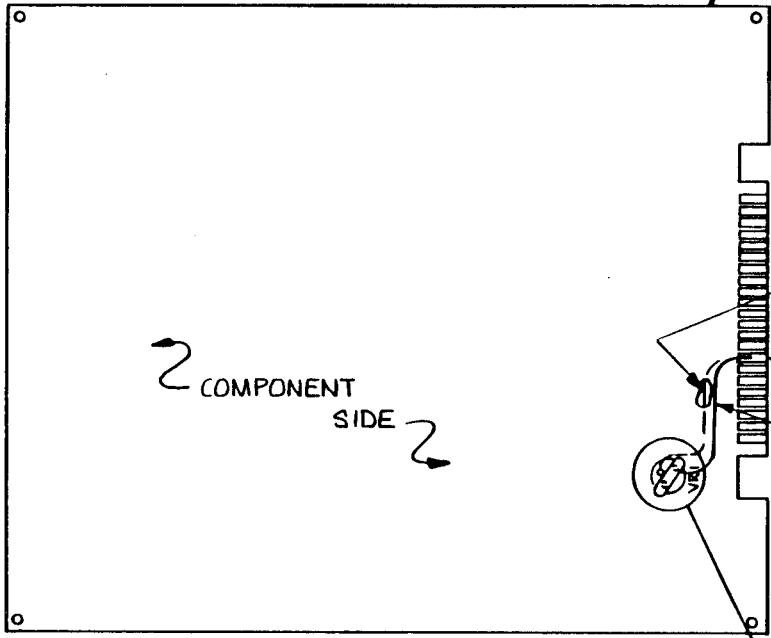
B

B

A

A

ASS'Y BOARD (N.B.)  
 38-11733-01



INSTALL THIS WIRE  
 FROM FAR SIDE

SOLDER TO PIN B (COMP. SIDE) & PIN J (CIR. SIDE).  
 BOTH SIDES AS SHOWN.

USE BUSSWIRE  
 P/N 34-10596-01  
 2 PLACES

⚠ REMOVE POT FROM VRI LOCATION AND INSTALL  
 CAPACITOR, .005 MF, 50V, DISC AS SHOWN  
 P/N 63-11584-01

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY: TENNES	DATE 4-6-67	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 7-62	
	RELEASE APPROV: <i>[Signature]</i>	DATE 7-72	
FINISH:	DO NOT SCALE DWG		DWG TITLE ASS'Y BOARD W/VOLUME MOD (N.B.)
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. SIZE C 38-11733-02
	PROJECTION: [Symbol]	SCALE: [Symbol]	REV. A
CODE IDENT.		SHEET 1 OF 1	

4

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BRUNING 4031 40433

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG RELEASE ERN #013	3/25/82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
P4							
MAIN WIRE HARN	P4 - 1	SPEAKER	BRN	22	M	45.0	△
MOLEX P/N 03-09-2038	P4 - 2	SPEAKER	WHT	22	M	45.0	△
△ 41-10659-01	P4 - 3						NOT USED

△ 2 CINEMATRONICS PART NO.

△ 1 WIRES TERMINATE AT SPEAKER END WITH FEMALE QUICK DISCONNECTS, CINEMATRONICS P/N 35-10617-01

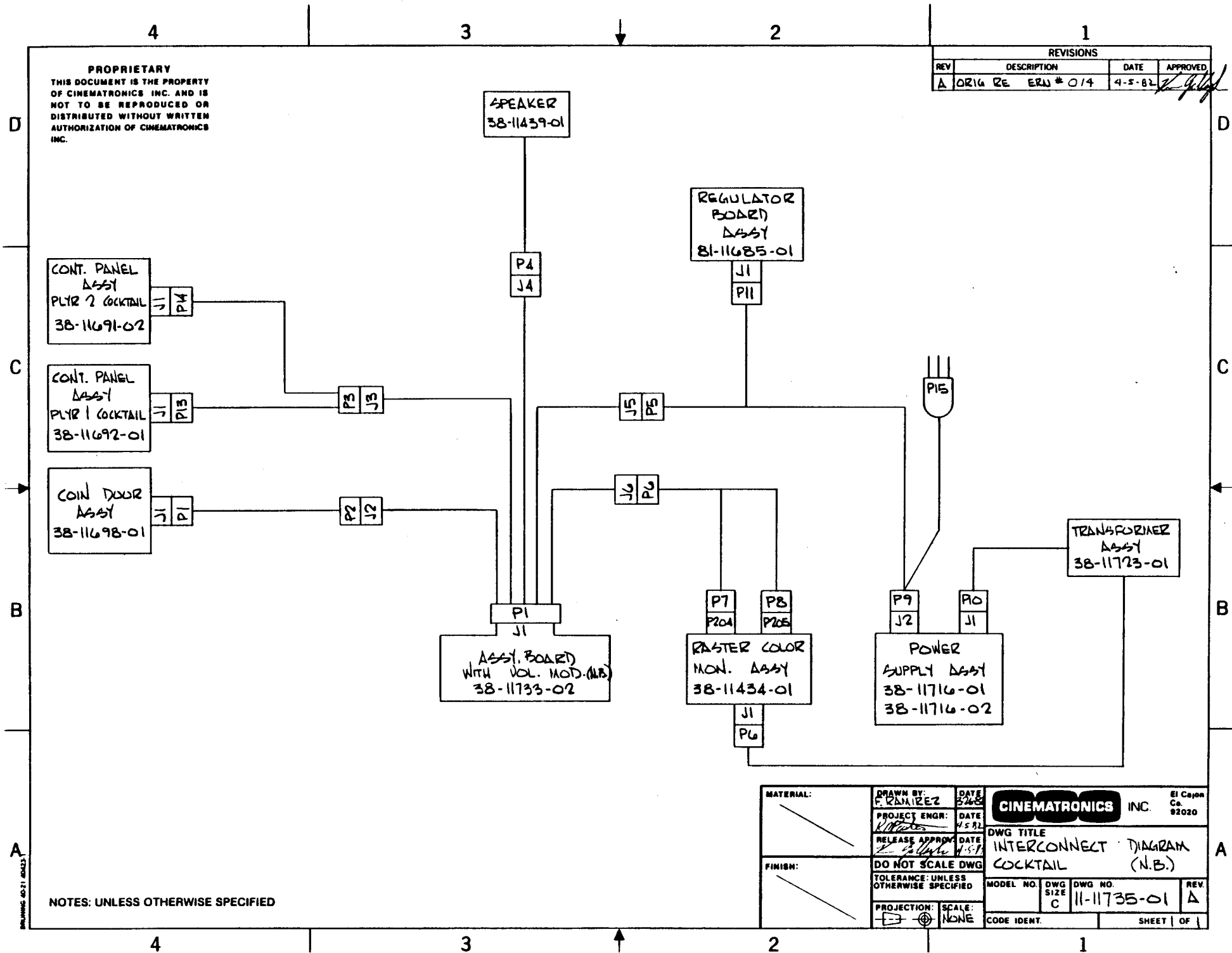
NOTES:

TOL.  
 +1.0"  
 -0.0"

MATERIAL:	DRAWN BY: TEJNES	DATE 7/15/82	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 7/15/82	
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV:	DATE	DWG TITLE WIRE LIST-(COCKTAIL) SPEAKER HARNESS (JG)
	DO NOT SCALE DWG TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. REV. 80-11692-01 A1
PROJECTION: <input checked="" type="checkbox"/>	SCALE:	CODE IDENT.	SHEET 1 OF 1

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG RE ERW # 014	4-5-82	<i>[Signature]</i>



NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE: 5/82	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 4/5/82	
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE: 4/5/82	DWG TITLE INTERCONNECT DIAGRAM COCKTAIL (N.B.)
	DO NOT SCALE DWG TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. DWG SIZE 11-11735-01 C
PROJECTION: FIRST ANGLE		SCALE: NONE	REV. A
CODE IDENT.		SHEET 1 OF 1	

DRAWING 4021 40433

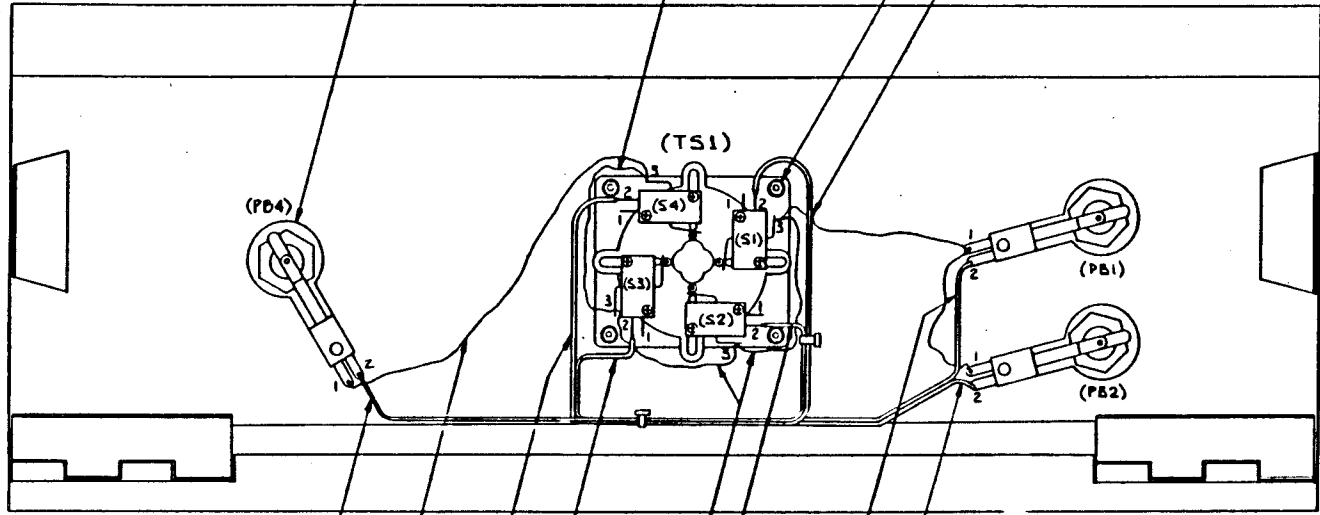
8 7 6 5 4 3 1

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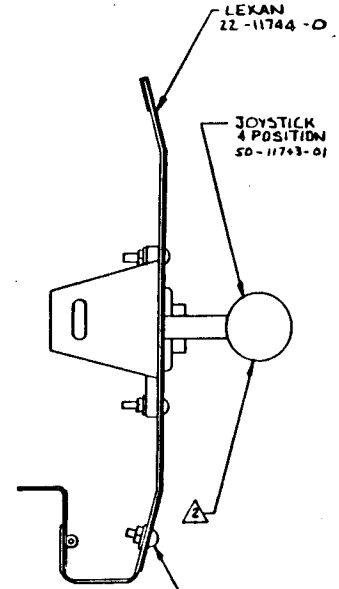
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DEK. REL.	LEN 15	4-1-81

- BUTTON ASSY SHORT (RED)  
57-11192-02  
SWITCH W/MT6.  
57-11573-01  
PAL NUT  
25-10559-01
- BUS WIRE  
34-10396-01
- BOLT CARRIAGE (BLK DX) (4)  
3/16x3/4 LG  
25-10909-01  
WASHER FLAT (4)  
#10-24  
25-10566-01  
HEX NUT (4)  
#10-24  
25-10556-01
- BLUE

D  
C  
B



- YELLOW
- BUS (REF)
- GREY
- ORANGE
- VIOLET
- BUS (REF)
- GREEN
- WHITE



- LEXAN  
22-11744-0
- JOYSTICK  
4 POSITION  
50-11793-01
- BOLT CARRIAGE (5)  
3/16x1/2 LG  
25-10551-01  
WASHER FLAT (3)  
#10-24  
25-10566-01  
NUT HEX (3)  
#10-24  
25-10556-01

**-01 ASSY  
PLAYER I**

WIRE LIST			
FROM	TO	WIRE	LENGTH
PB2-1	PB1-1	BUS	3.0
PB1-1	TS1/S1-3		5.0
TS1/S1-3	TS1/S2-3		4.0
TS1/S2-3	TS1/S3-3		4.0
TS1/S3-3	TS1/S4-3		4.0
TS1 34-3	PB4-1	BUS	9.0

3 REF. DES. SHOWN FOR REFERENCE ONLY AND DO NOT APPEAR ON PART.

⚠ BALL END OF JOYSTICK MUST BE REMOVED BEFORE PLACEMENT. APPLY LOCKTITE ON THE END AND REPLACE BALL.

⚠ CINEMATONICS PART NO.

NOTES UNLESS OTHERWISE SPECIFIED

MATERIAL	DRAWN BY TJL/BJ	DATE 11/80	INC CINEMATONICS	BY CA
PROJECT ENGR DATE	DATE	DWG TITLE ASSY PLYR CONTROL PANEL COCKTAIL (N.B)		
PROJ. MGR DATE	DATE	MODEL NO 0	DWG NO 38-11673	REV A
PRODUCTION SCALE	SCALE	CODE	DATE	SHEET OF 2

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
	SEE CHG. 1		

BUTTON ASSY SHORT (RED)  
 57-11192-02  
 SWITCH W/MT6.  
 57-11373-01  
 PAL NUT  
 25-10559-01

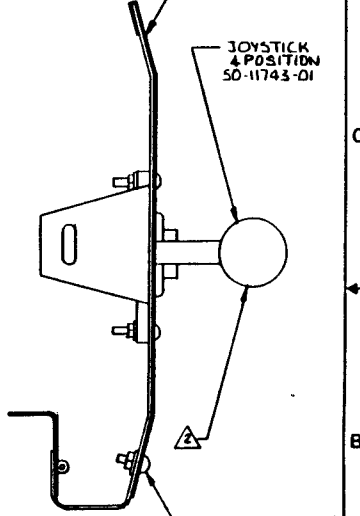
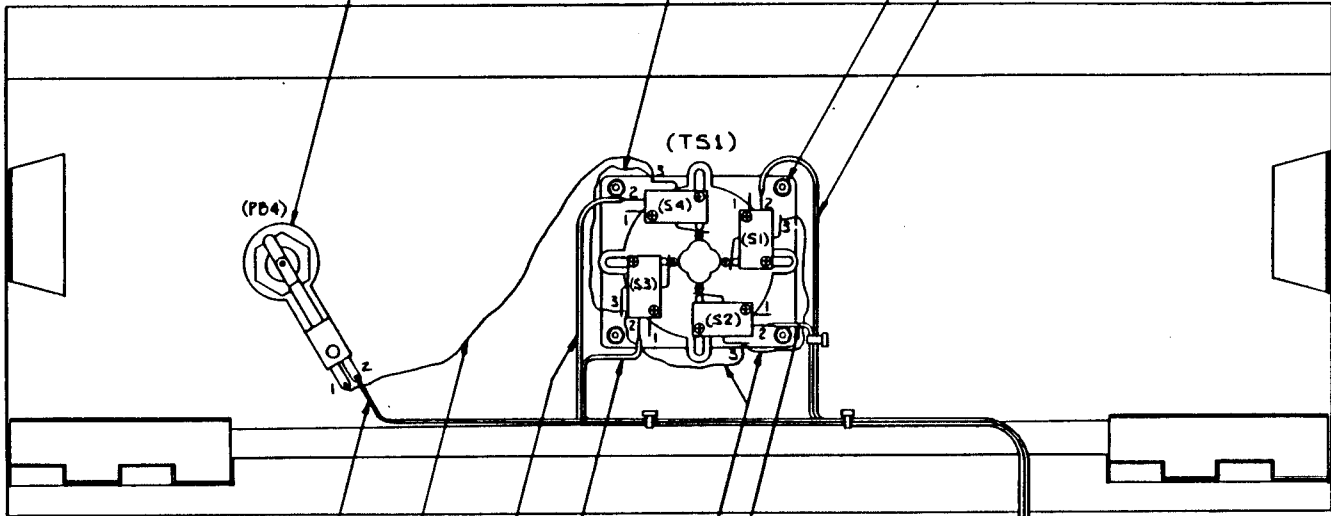
BOLT CARRIAGE (BLK DX) (4)  
 3/16 X 3/4 LG  
 25-10909-01  
 WASHER FLAT (4)  
 #10-24  
 25-10568-01  
 HEX NUT (4)  
 #10-24  
 25-10558-01

BUS WIRE  
 54-10396-01

BLUE

LEKAN  
 22-11744-02

JOYSTICK  
 & POSITION  
 50-11743-01



BOLT CARRIAGE (5)  
 3/16 X 1/2 LG  
 25-10551-01  
 WASHER FLAT (3)  
 #10-24  
 25-10568-01  
 NUT HEX (3)  
 #10-24  
 25-10558-01

YELLOW  
 BUS (REF)  
 GREY  
 ORANGE  
 VIOLET  
 BUS (REF)

-02 ASSY  
 PLAYER 2

FROM	TO	WIRE	LENGTH
TS1/S1-3	TS1/S2-3	BUS	4.0
TS1/S2-3	TS1/S3-3	↑	4.0
TS1/S3-3	TS1/S4-3	↓	4.0
TS1/S4-3	PB4-1	BUS	9.0

3 REF. DES. SHOWN FOR REFERENCE  
 ONLY AND DO NOT APPEAR ON PART.

⚠ BALL END OF JOYSTICK MUST BE REMOVED  
 BEFORE PLACEMENT. APPLY LOCKTITE ON  
 THREAD END AND REPLACE BALL.

⚠ CINEMATRONICS PART NO.

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DRAWN BY TJEMUE'S	DATE 1-31-65	CINEMATRONICS INC Co. 81028
	PROJECT ENGR	DATE	
FINISH	RELEASE APPROV	DATE	DWG TITLE ASSY PLYR 2 CONTROL PANEL COCKTAIL (N.B)
	DO NOT SCALE DWG TOLERANCES UNLESS OTHERWISE SPECIFIED		MODEL NO D
PRODUCTION SCALE		DWG NO 38-11673	REV A
CODE IDENT		SHEET 2 OF 2	

8

7

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5

4

3

2

1

4

3

2

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN # 012	3-25-82	

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AUTHORIZATION OF CINEMATRONICS  
INC.

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
P3 EDGE CONN. MOLEX P/N 03-09-1152 OR EQUIV. OUR P/N 41-10660-01 15 CIR. MALE	P3-1	P14-9	ORANGE	22	M	28.0	
	P3-2	P14-8	BLUE		F		
	P3-3	P14-7	BROWN				
	P3-4	P14-6	GRAY				
	P3-5	P14-5	YELLOW				
	P3-6	P14-4	VIOLET				
	P3-7	P14-1	BLACK			28.0	GND NO.2
	P3-7	P13-1	BLACK			10.0	GND NO.1
	P3-8	P13-2	WHITE				
	P3-9	P13-3	GREEN				
	P3-10	P13-4	VIOLET				
	P3-11	P13-5	YELLOW				
	P3-12	P13-6	GREY				
	P3-13	P13-7	BROWN				
	P3-14	P13-8	BLUE				
P3-15	P13-9	ORANGE	22	F	10.0		
P13 PLAYER NO.1 MOLEX P/N 03-09-1093 OR EQUIV. OUR P/N 41-10649-01 9 CIR. MALE	P13-1	P3-7	BLACK	22			GND NO.1
	P13-2	P3-8	WHITE				
	P13-3	P3-9	GREEN				
	P13-4	P3-10	VIOLET				
	P13-5	P3-11	YELLOW				
	P13-6	P3-12	GREY				
	P13-7	P3-13	BROWN				
	P13-8	P3-14	BLUE				
	P13-9	P3-15	ORANGE	22			
P14 PLAYER NO.2 MOLEX P/N 03-09-1093 OR EQUIV. OUR P/N 41-10649-01 9 CIR. MALE	P14-1	P3-7	BLACK	22			GND NO.2 NOT USED
	P14-2						NOT USED
	P14-3						
	P14-4	P3-6	VIOLET				
	P14-5	P3-5	YELLOW				
	P14-6	P3-4	GREY				
	P14-7	P3-3	BROWN				
	P14-8	P3-2	BLUE				
	P14-9	P3-1	ORANGE	22			

NOTES: UNLESS OTHERWISE SPECIFIED

TOLERANCE  
+1.0  
-0.0

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE: 3-9-82		El Cajon Ca. 92020
	PROJECT ENGR: <i>R. Lopez</i>	DATE: 3/5/82		DWG TITLE WIRE LIST - CONTROL PNL INTERCONN. COCKTAIL (J.G.)
FINISH:	RELEASE APPROV:	DATE:	MODEL NO.:	DWG NO.:
	DO NOT SCALE DWG	TOLERANCE: UNLESS OTHERWISE SPECIFIED	SIZE C	88-11710-01
PROJECTION:	SCALE:	CODE IDENT.	REV. A	SHEET   OF

4

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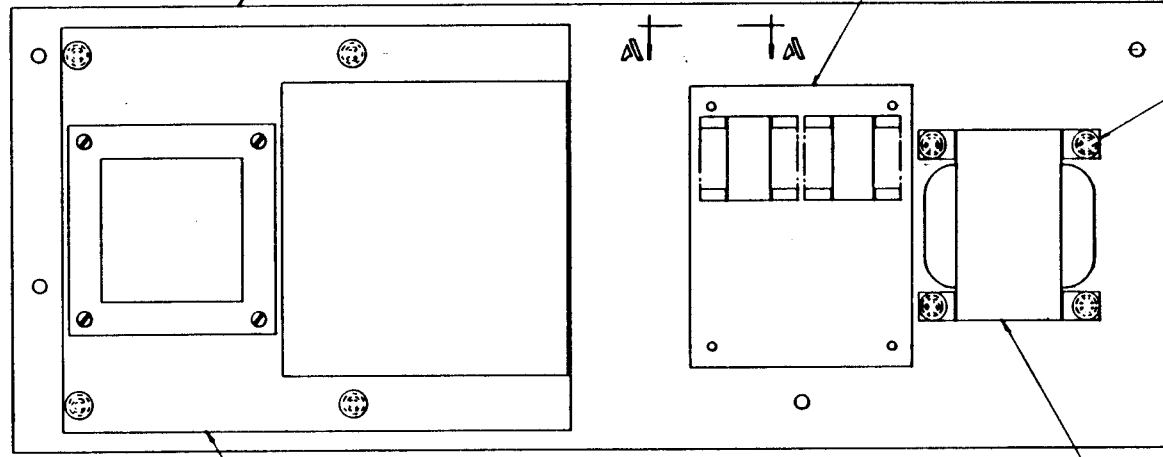
8 7 6 5 4 3 1

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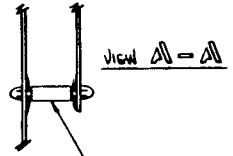
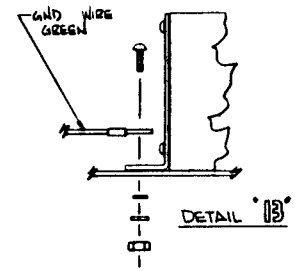
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	DRW REL	EXN 14	4-7-61 <i>E. Kelly</i>

MOUNTING PLATE - PWR SUPPLY & TRANS  
 20-11709-01

REGULATOR P.C. MOUNT  
 58-11656-01



SEE DETAIL 'B'



DUAL LOCKING P.C.B.  
 SPACER (4)  
 P/N 25-11607-01

POWER SUPPLY 82-10842-20 CALDOR (-01)  
 POWER SUPPLY 82-10842-40 NAT'L POWER (-02)  
 BOLT, CARRIAGE, 3/16" x 1/4", 25-10564-01 (4)  
 WASHER, FLAT, NO. 10 x 1/2", 25-10568-01 (4)  
 WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
 NUT, HEX, NO. 10-7A, 25-10566-01 (4)

TRANSFORMER, 87-11717-02  
 BOLT, CARRIAGE, 3/16" x 1/2", 25-10561-01 (4)  
 WASHER, FLAT, NO. 10 x 1/2", 25-10568-01 (4)  
 WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
 NUT, HEX, NO. 10-7A, 25-10566-01 (4)

⌀ 1 NOTED  
 ⌀ 2 NOTED

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY E. KELLY	DATE 7/25	<b>CINEMATRONIC INC</b> INCL. CO. 95000
	PROJECT ENGR E. KELLY	DATE 7/11	
FINISH:	DWG TITLE POWER SUPPLY & TRANS COCKTAIL (N.B.) (J.G.)		REV A
	TOLERANCE UNLESS OTHERWISE SPECIFIED	MODEL NO D	
PROJECTION FIRST ANGLE	SCALE FULL	CODE IDENT	SHEET 1 OF 1

8 7 6 5 4 3 2 1