

# **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

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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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### 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>
<u>25-10579-01</u>	<u>Ty Rap, W/O Eyelet</u>	<u>4</u>
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>
81-11822-01	<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

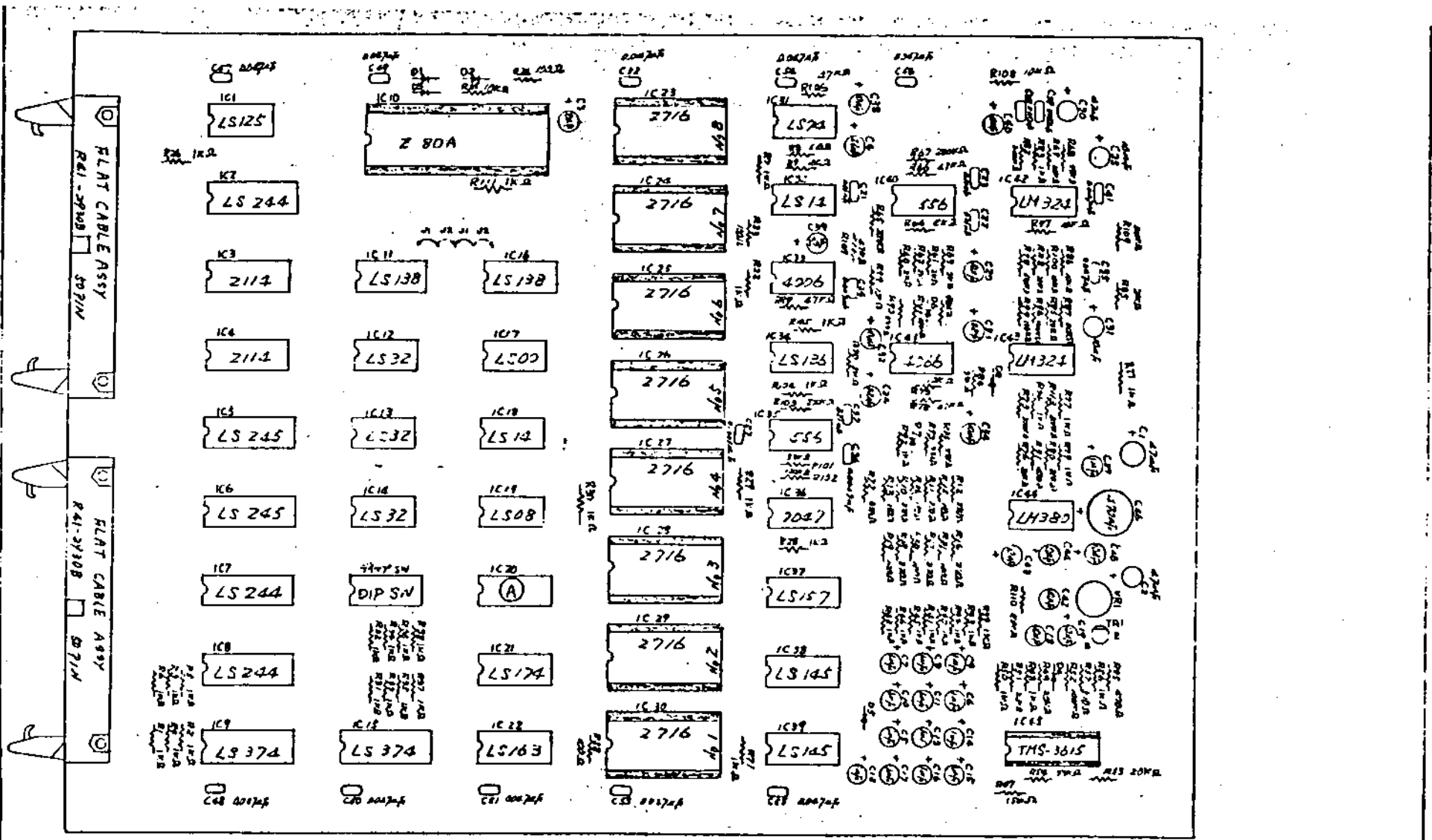
NAUGHTY BOY  
BOARD EDGE CONNECTOR PIN-OUT LIST

<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

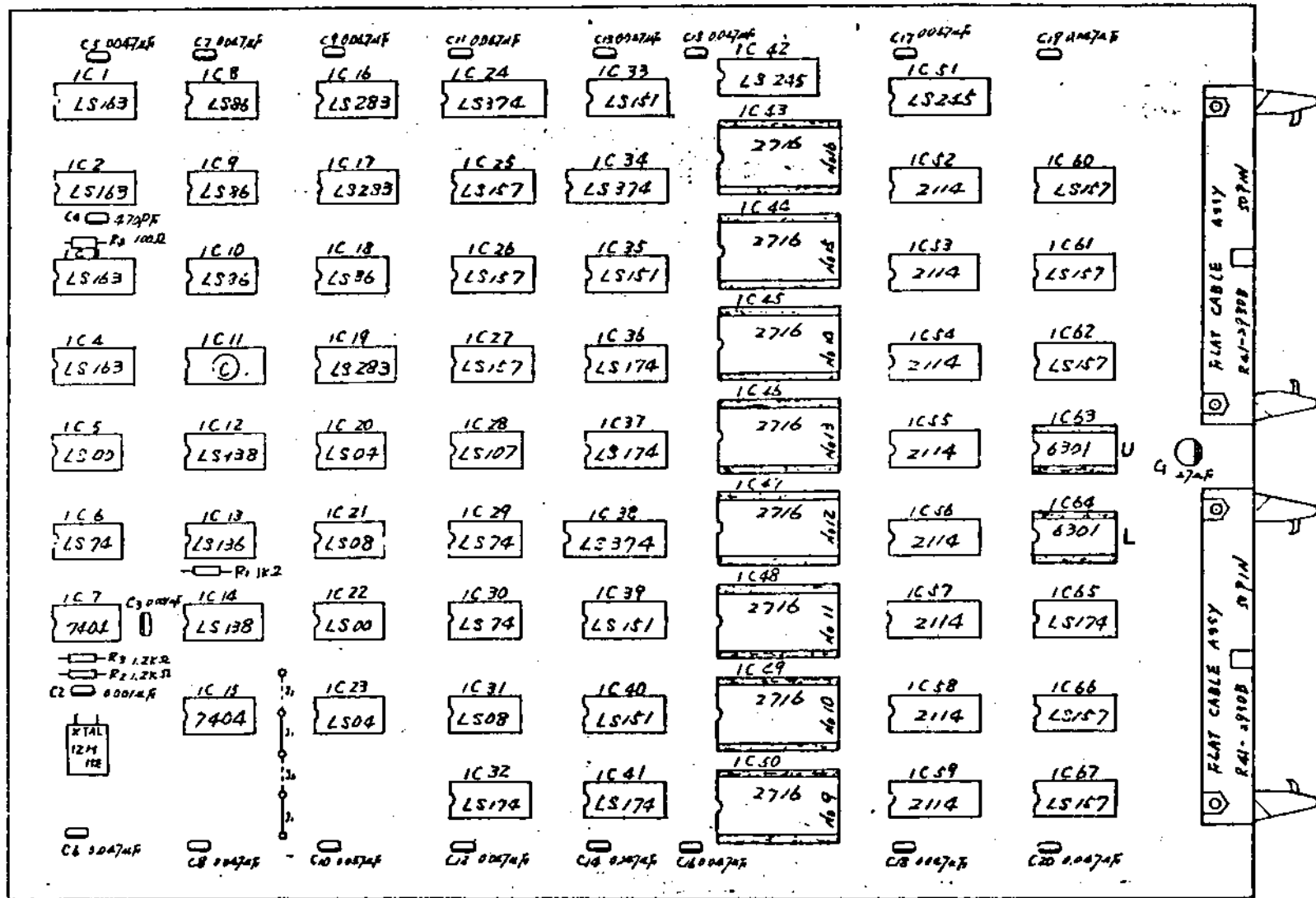
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②、LS714 是付付し。

③、 IC SOCKET使用。

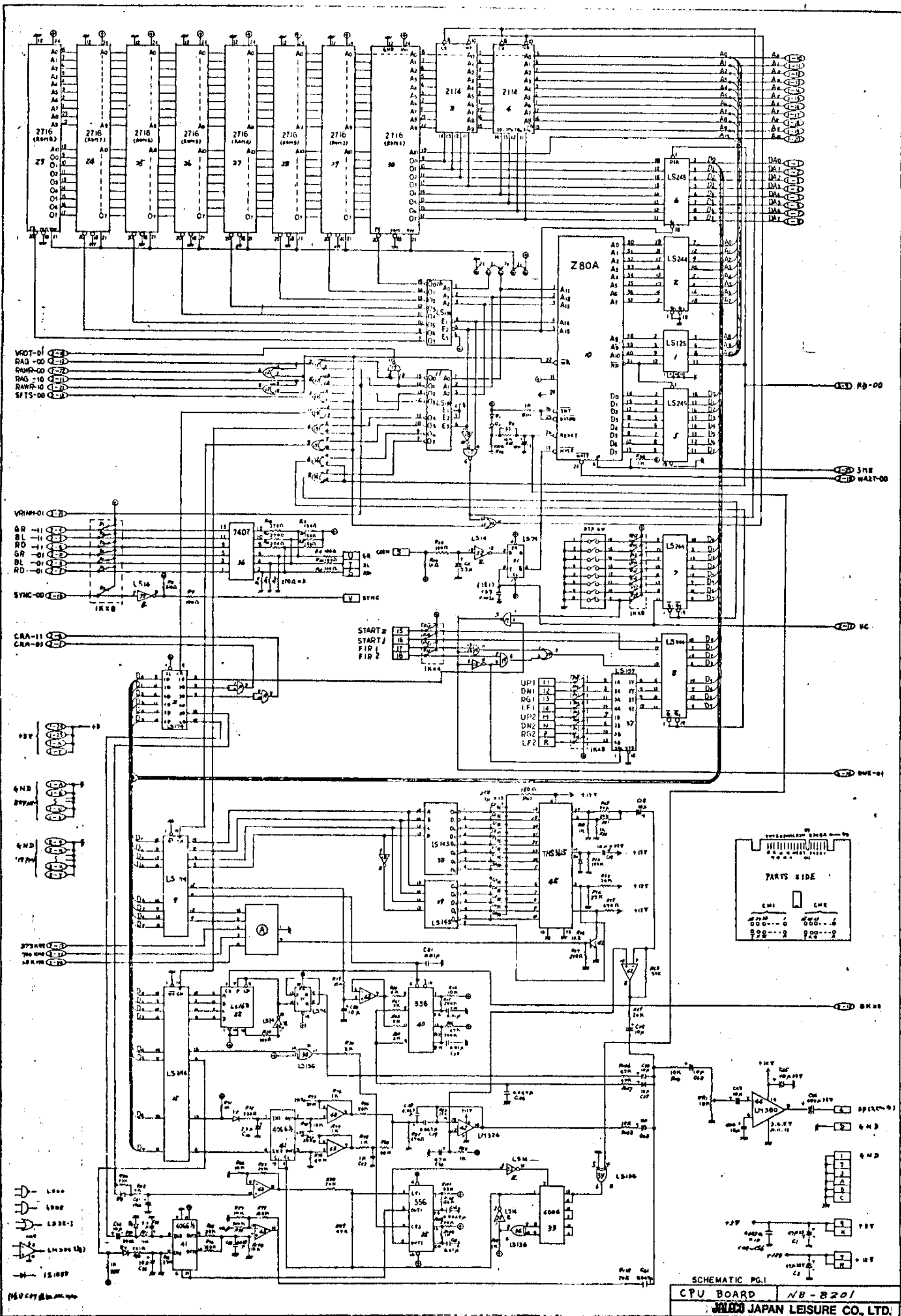
No.	CHG. DATE	CHG.	MATERIAL	DATE 10-12-81	DRAWING NAME
△	.	.	TREAT	THIRD ANGLE P.	CPU BD.
△	.	.	COM. DIFF ±	SCALE 1/1	ALIGNMENT-No.1
記	証	無	査	設	計
				DRAWING No.	CHG. No.
				NB-8201	



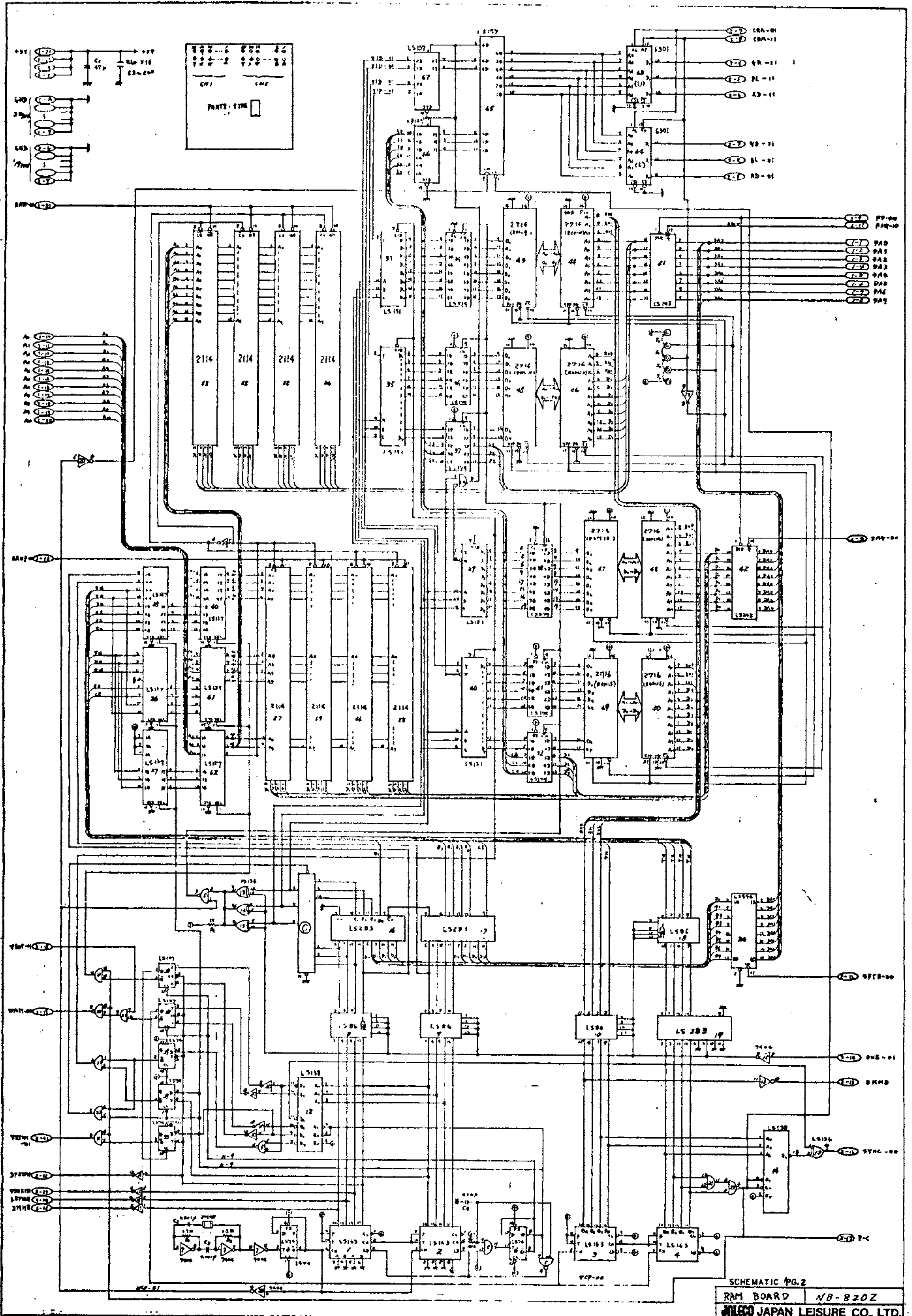
① IC SOCKET (使用)

NO	ENG. DATE	SIGN	MATERIAL	DATE 11-11-82	DRAWING NAME
1			TREAT	THIRD ANGLE	RAM BD. ALIGNMENT - No.2
2			CON. DIA	SCALE 1/1	
設計 照査 技 師 長 田				DRAWING No.	
				No. 8202	
				CHG. NO.	

SOLECO JAPAN LEISURE CO., LTD.



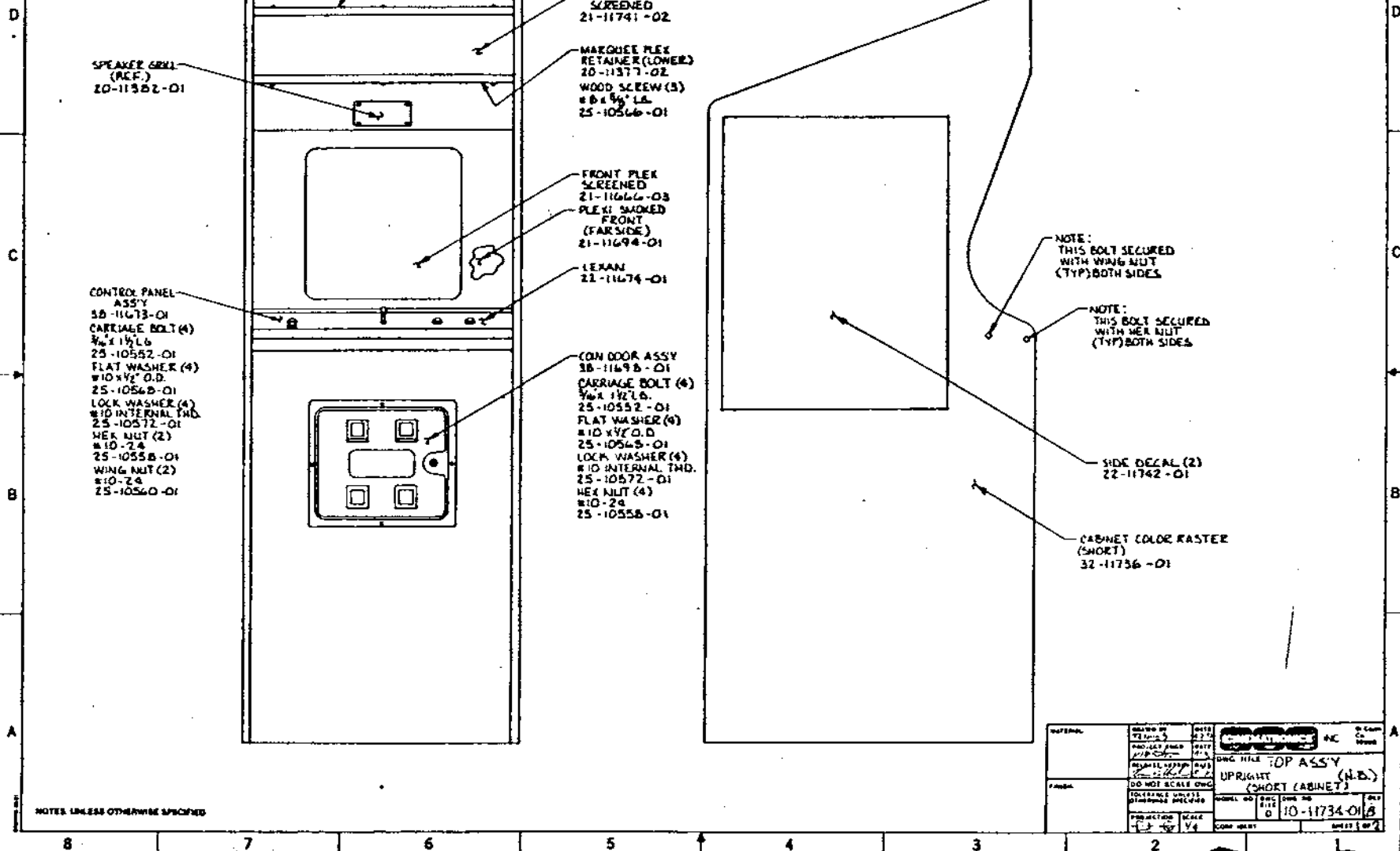
SCHEMATIC PG.1  
 CPU BOARD NB-B201  
 SHILCO JAPAN LEISURE CO., LTD.



SCHEMATIC PG.2  
 RAM BOARD NB-820Z  
 JALCO JAPAN LEISURE CO., LTD.

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CORP.

REVISIONS			
REV.	DESCRIPTION	DATE	BY
A	ORIG. CD. REV. 014	4-75	2-11
B	RECD PER ECD	ECD 11/10/75	2-11



SPEAKER GRILL  
(RCF)  
20-11582-01

CONTROL PANEL  
ASSY  
20-11673-01  
CARRIAGE BOLT (4)  
3/8 x 1 1/2 L6  
25-10552-01  
FLAT WASHER (4)  
WID x 1/2" O.D.  
25-10548-01  
LOCK WASHER (4)  
WID INTERNAL THD.  
25-10572-01  
HEX NUT (2)  
#10-24  
25-10558-01  
WING NUT (2)  
#10-24  
25-10560-01

MAQUÉE PLEX RETAINER (UPPER)  
20-11376-02  
WOOD SCREW (3)  
#8 x 3/8" L6  
25-10566-01

MAQUÉE PLEX  
SCREENED  
21-11741-02

MAQUÉE PLEX  
RETAINER (LOWER)  
20-11377-02  
WOOD SCREW (3)  
#8 x 3/8" L6  
25-10566-01

FRONT PLEX  
SCREENED  
21-11666-03  
PLEXI-SMOKED  
FRONT  
(FAR SIDE)  
21-11694-01

LEXAN  
22-11674-01

CON DOOR ASSY  
38-11698-01  
CARRIAGE BOLT (4)  
3/8 x 1 1/2 L6  
25-10552-01  
FLAT WASHER (4)  
#10 x 1/2" O.D.  
25-10548-01  
LOCK WASHER (4)  
#10 INTERNAL THD.  
25-10572-01  
HEX NUT (4)  
#10-24  
25-10558-01

NOTE:  
THIS BOLT SECURED  
WITH WING NUT  
(TYP) BOTH SIDES

NOTE:  
THIS BOLT SECURED  
WITH HEX NUT  
(TYP) BOTH SIDES

SIDE DECAL (2)  
22-11742-01

CABINET COLOR RASTER  
(SHORT)  
32-11736-01

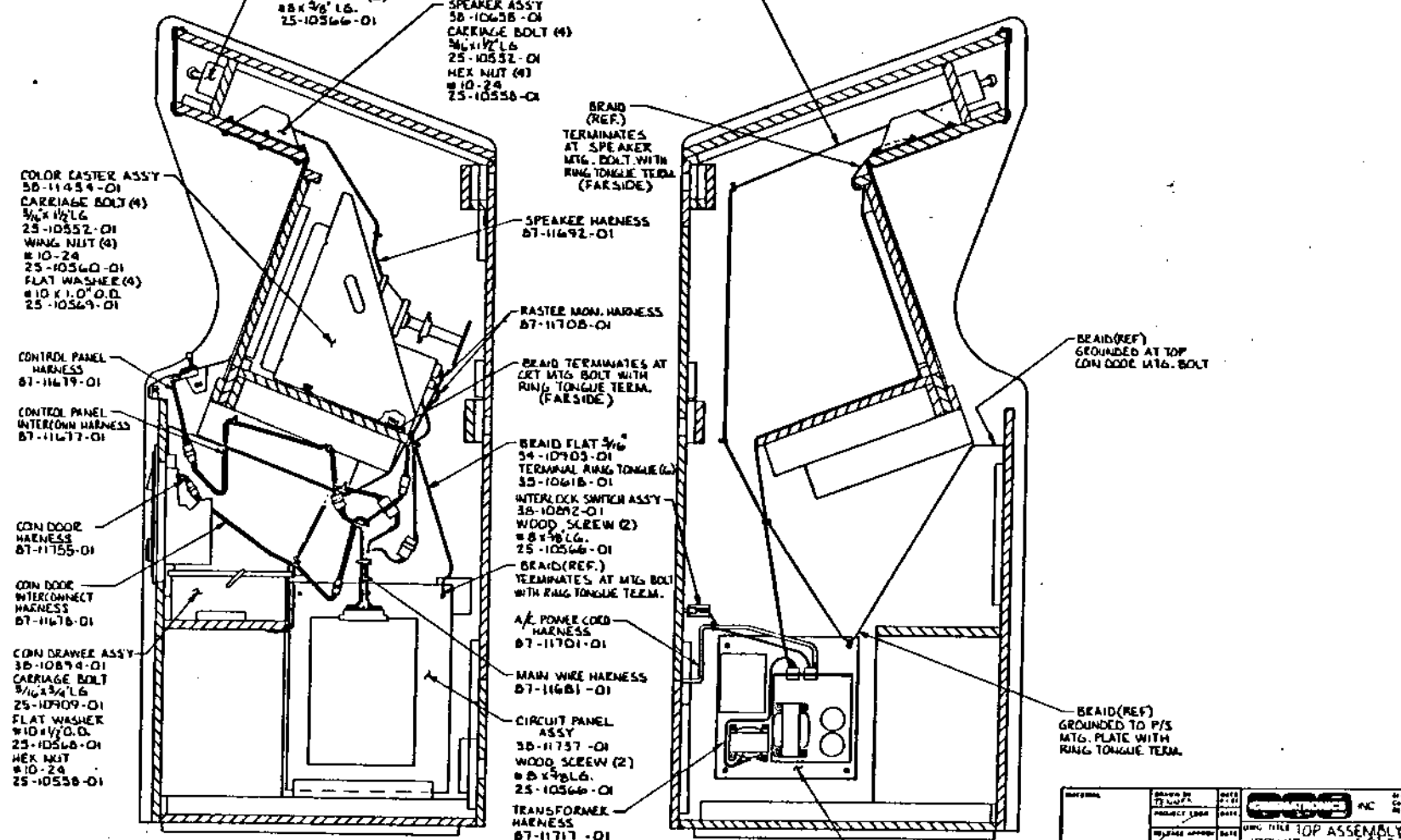
NOTES UNLESS OTHERWISE SPECIFIED

DATE	REV.	DATE	REV.	DATE	REV.
11/10/75	014	11/10/75	014	11/10/75	014
DRAWN BY: J.P. [Signature]			CHECKED BY: [Signature]		
TITLE: UPRIGHT (SHORT CABINET)			PART NO: 10-11734-01A		
SCALE: 1/2" = 1"			SHEET: 1 OF 2		

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 ELECTRIC INC.

REVISIONS		
REV.	DESCRIPTION	DATE

8 7 6 5 4 3 1

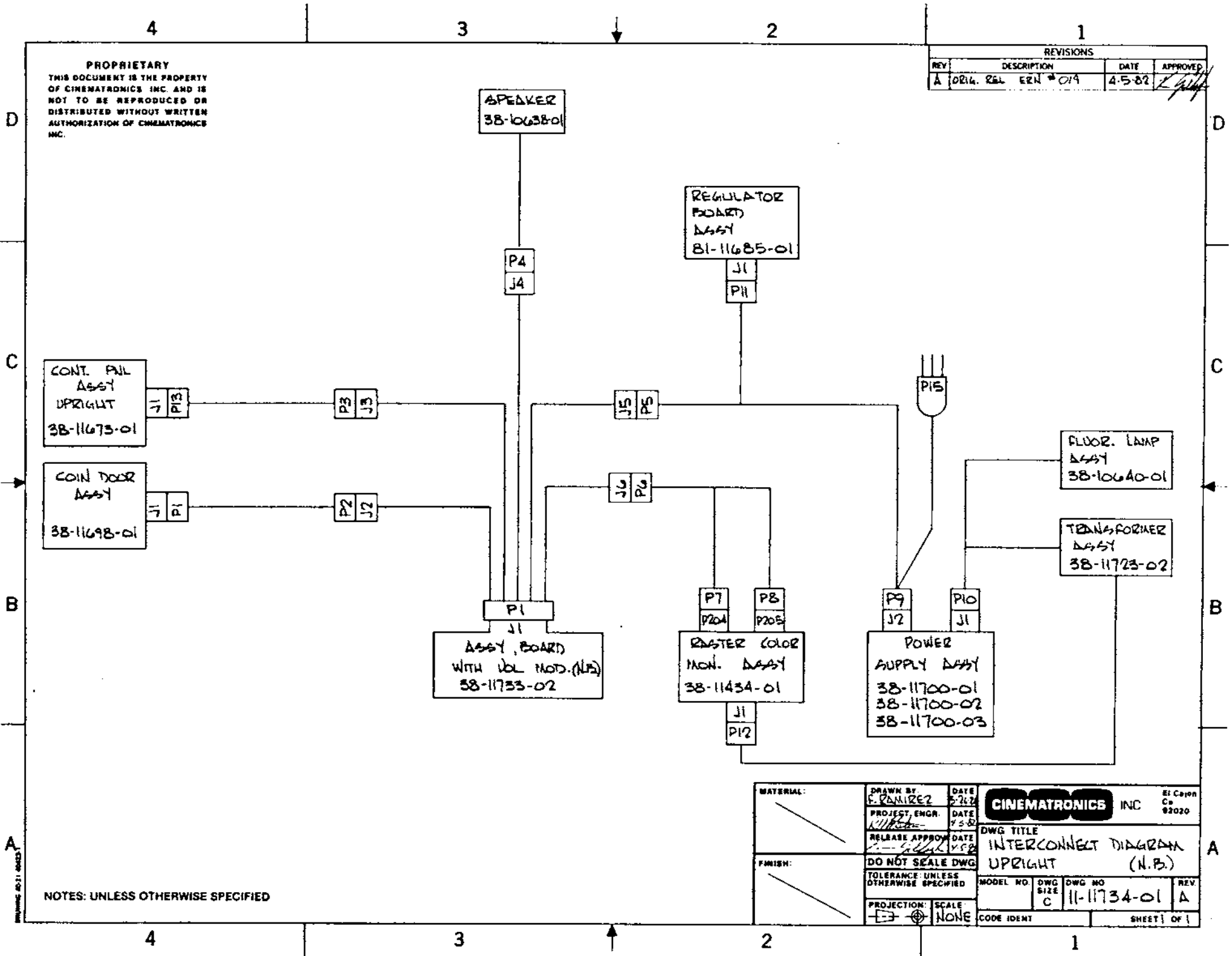


NOTES: UNLESS OTHERWISE SPECIFIED

DESIGNED BY TS/MLP	DATE 11/81	DRW. NO. 10-11734-01/8	REV. 1
PRODUCT CODE 11734	DATE 11/81	INC. CO. MODEL	
DESIGNED BY TS/MLP	DATE 11/81	TOP ASSEMBLY UPRIGHT (SHORT CABINET)	
DO NOT SCALE DWT.	SCALE 1/4"	10-11734-01/8	
PRODUCTION SCALE 1/4"	SCALE 1/4"	10-11734-01/8	

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 INC.

REVISIONS				
REV	DESCRIPTION	DATE	APPROVED	
A	ORIG. REL. ERN *01A	4-5-82	<i>[Signature]</i>	



NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY E. RAMIREZ	DATE 2-24-82	<b>CINEMATRONICS</b> INC El Cajon Ca 92020
	PROJECT ENGR.	DATE 7-5-82	
FINISH:	RELEASE APPROV. DATE 1-1-82	DWG TITLE INTERCONNECT DIAGRAM UPRIGHT (N.B.)	MODEL NO. DWG NO. DWG NO. REV. C 11-11734-01 A
	DO NOT SCALE DWG	TOLERANCE UNLESS OTHERWISE SPECIFIED	
	PROJECTION: SCALE NONE	CODE IDENT	SHEET 1 OF 1

8

7

6

5

4

3

1

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INC

CONNECTOR	FROM	TO	COLOR	AWG	PN	LENGTH	REMARKS
	PI-1	J5-1	BLACK	18	AC	11.0	ANAL. GND
	PI-A	J6-1		22			
	PI-2	J2-1					
	PI-B	J2-7	(TW)				
	PI-3	J5-7	BLACK	22	AC	11.0	110V GND
	PI-C						NOT USED
	PI-4	J4-7	BROWN	22	AC	11.0	SPKR OUTPUT
	PI-D	J4-1	BLACK	22	AC	11.0	SPKR GND
	PI-E	J2-2	YELLOW	22	AC	11.0	CON. PIN
	PI-F						NOT USED
	PI-G						NOT USED
	PI-H						+12V
	PI-I	J5-4	YELLOW	18	AC	11.0	DEL. (L) GND
	PI-B	J2-6	BLUE (TW)	22			DEL. (L) GND
	PI-J	J2-3	RED (TW)				VOL. CT. MOD
	PI-K	J2-4	RED				+5V
	PI-L	J6-2	RED	22	AC	11.0	+5V
	PI-M						NOT USED
	PI-N	J3-10	VIOLET	22	AC	11.0	PLR 1 UP
	PI-O	J3-6	VIOLET				PLR 2 UP
	PI-P	J3-7	GRAY				PLR 1 TW
	PI-Q	J3-4	GRAY				PLR 2 DN
	PI-R	J3-14	BLUE				PLR 1 GND
	PI-S	J5-2	PURPLE				PLR 2 GND
	PI-T	J3-15	ORANGE				PLR 1 LEFT
	PI-U	J3-1	ORANGE				PLR 2 LEFT
	PI-V	J3-8	WHITE				PLR 1 GND
	PI-W	J6-2	RED				DET. RED
	PI-X	J3-9	GREEN				PLR 1 GND
	PI-Y	J6-4	PURPLE				CR1 BLUE
	PI-Z	J3-11	YELLOW				PLR 1 PURP
	PI-AA	J6-3	GREEN				CR1 BROWN
	PI-AB	J3-5	YELLOW				PLR 2 DIR
	PI-AC	J6-5	WHITE	22	AC	11.0	TV ANK

PI  
EDGE CONN.  
MULLINA PIN  
E84167-100-100  
OR EQUIV.  
OUR PIN  
41-11740-01

CONNECTOR	FROM	TO	COLOR	AWG	PN	LENGTH	REMARKS
J2	J2-1	PI-7	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
	J5-1	PI-2	ORANGE	22	F		
	J5-2	PI-P	BLUE	22	M		
	J5-3						NOT USED
J3	J3-4	PI-N	GRAY	22	M		
	J3-5	PI-10	YELLOW				
	J3-6	PI-M	VIOLET				
	J3-7	PI-3	BLACK				
	J3-8	PI-15	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		
	J4-1	PI-D	BLACK	22	F		
	J4-2	PI-4	BROWN	22	F		
	J4-3						NOT USED
J5	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	J6-1	PI-A	BLACK	22	F		
	J6-2	PI-B	RED				
	J6-3	PI-U	GREEN				
	J6-4	PI-T	BLUE				
	J6-5	PI-V	WHITE	22	F		
	J6-6						NOT USED

REV	DESCRIPTION	DATE	APPROVED
1	ORIG. REL.	ERN 15	1-7-83

- WIRE TO PI PINS B, B + J ARE WANTED WIRES.
  - EDGE CONNECTOR PI PINS 7 + 8 ARE WIPER.
  - REF. 87-11081-01 FOR BAY DRAWING.
  - AC - SOLDER CONNECT / AIRLINK TURNING.
  - F - FEMALE MOLEXT MOLEXT PIN 02-09-1112 OR PIN 35-10615-01.
  - M - MALE PIN MOLEXT PIN 02-09-1112 OR PIN 35-10614-01.
  - J4 SPEAKER MOLEXT PIN 02-09-1052 OR EQUIV. OUR PIN 41-10853-01 5 CIR. MALE.
- NOTES UNLESS OTHERWISE SPECIFIED

TOL:  
+1.0  
-0.0

DATE	1-7-83	SCALE	AS SHOWN
DESIGNED BY	J. GARRETT	CHECKED BY	
DRAWN BY		DATE	
REVISIONS		DATE	
DO NOT SCALE DIMS			
TOLERANCE UNLESS OTHERWISE SPECIFIED		REV	
PRODUCTION		REV	
DATE		REV	
WORK		REV	
DATE		REV	
WORK		REV	

COMPANY: COMBATRONICS INC  
 DRAWN TITLE: WIRE LIST - MAIN HARNESS  
 UPRIGHT/COXETAIL (N.B.)  
 PART NO: 85-11081-01  
 SHEET 1 OF 1

8

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

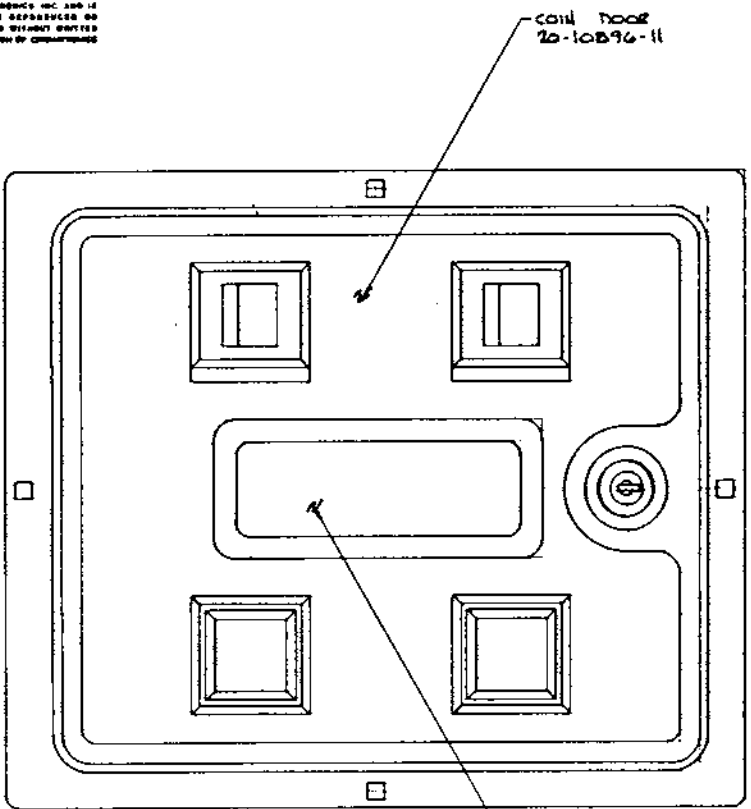
NOTES: UNLESS OTHERWISE SPECIFIED

TOL.  
+1.0"  
-0.0"

8 7 6 5 4 3 1

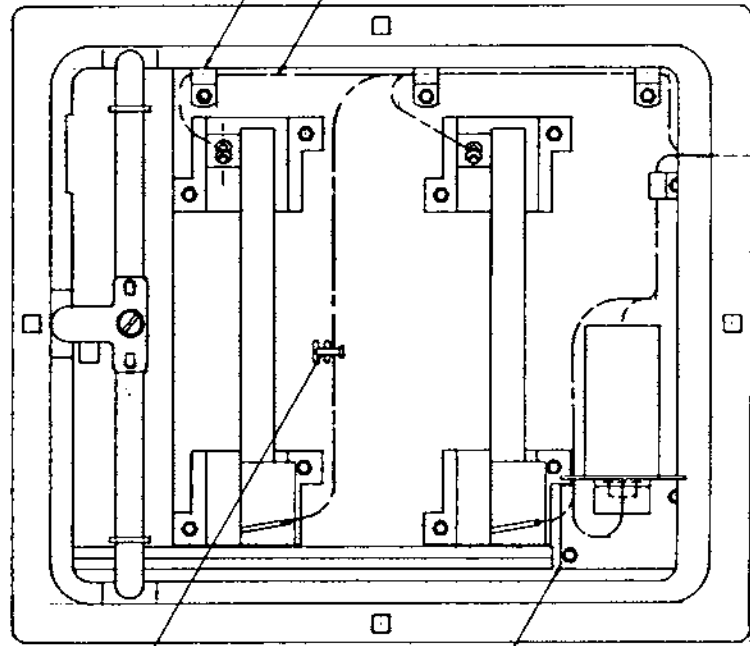
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	STG REC	LEN 15 11-73E	<i>[Signature]</i>



coil door  
 26-10896-11

DECAL  
 22-10899-01



CLAMP CABLE  
 3/16" PLASTIC  
 78-10905-01 (4)

COIL DOOR WADERS ASSY  
 87-11680-01

TI-RAP  
 26-10571-01

COIL METER/VOL CONTROL ASSY  
 36-11702-01  
 NUT, HEX. NO. 4-40, 25-10656-01 (2)  
 WASHER, LOCK, No. 4 UNF/BLK  
 25-10570-01 (2)

NOTES: UNLESS OTHERWISE SPECIFIED

DATE	11-73	BY	LEN
PROJECT	STG REC	DATE	11-73
DESIGNER	LEN	DATE	11-73
CHECKED	LEN	DATE	11-73
DO NOT SCALE THIS			
PRODUCTION	SCALE	DATE	11-73
1-3	FULL		
CINEMATRONICS INC		DATE	11-73
38-11678-01		DATE	11-73
38-11678-01		DATE	11-73
38-11678-01		DATE	11-73

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 DDDR INTERFACE MOLEX # 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: TENAJES	DATE 3/18/82	<b>CINEMATRONICS</b> INC. Et Cañon 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 COIN DDDR HARNESS UPRIGHT / COCKTAIL JG
	DO NOT SCALE DWG TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. 88-11680-01
PROJECTION: 	SCALE:	REV. B	CODE IDENT.
		SHEET 1 OF 1	

DRAWING 88-21-0043

4

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1

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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 HARD 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	CR1-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			△41-10885-01 P2-4	CR1-ANODE					
	P1-4	P1-3	YELLOW	22	-				P2-5 △	P1-5	RED		M		
	P1-4	CR1-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	CR1-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: F. ZAIREZ	DATE: 4-20-82	CINEMATRONICS INC El Cerrito Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 9/1/82	
FINISH:	RELEASE APPROV. DATE: <i>[Signature]</i>		DWG TITLE WIRE LIST - COIN DOOR INTERCONNECT UPRIGHT/COCKTAIL (J.G.#N.B.)
	DO NOT SCALE DWG		MODEL NO. DWG NO. DWG NO. C 88-11755-01 B
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		REV. B
	PROJECTION: SCALE: FULL		SHEET 1 OF 1

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN #13	5-26-81	<i>[Signature]</i>
B	ECO 164 ADD 21A To PB	5-21-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	FIN	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: JENNIES	DATE: 3-2-81	CINEMATRONICS INC. El Cajon Ca 92020
	PROJECT ENGR:	DATE: 7/2/81	
	RELEASE APPROV:	DATE: 7/1/81	DWG TITLE WIRE LIST- RASTER MONITOR TO GAME PD UPRIGHT/COCKTAIL (J.G.)
	DO NOT SCALE DWG		MODEL NO. DWG SIZE DWG NO. REV 88-11711-01 B
TOLERANCE: + 1.0 - 0.0	FINISH:	TOLERANCE: UNLESS OTHERWISE SPECIFIED	PROJECTION: SCALE: [Symbol]
		CODE IDENT.	SHEET   OF

4

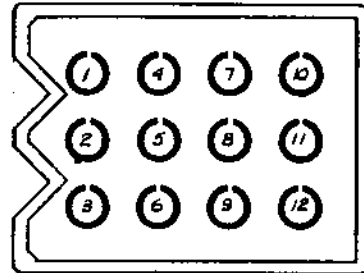
3

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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	+2.5V
△ 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

- △ 3AMP INLINE FUSE.
- △ .3AMP INLINE FUSE.
- △ 3AMP INLINE CIRCUIT BREAKER CB 1.
- △ 3AMP 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

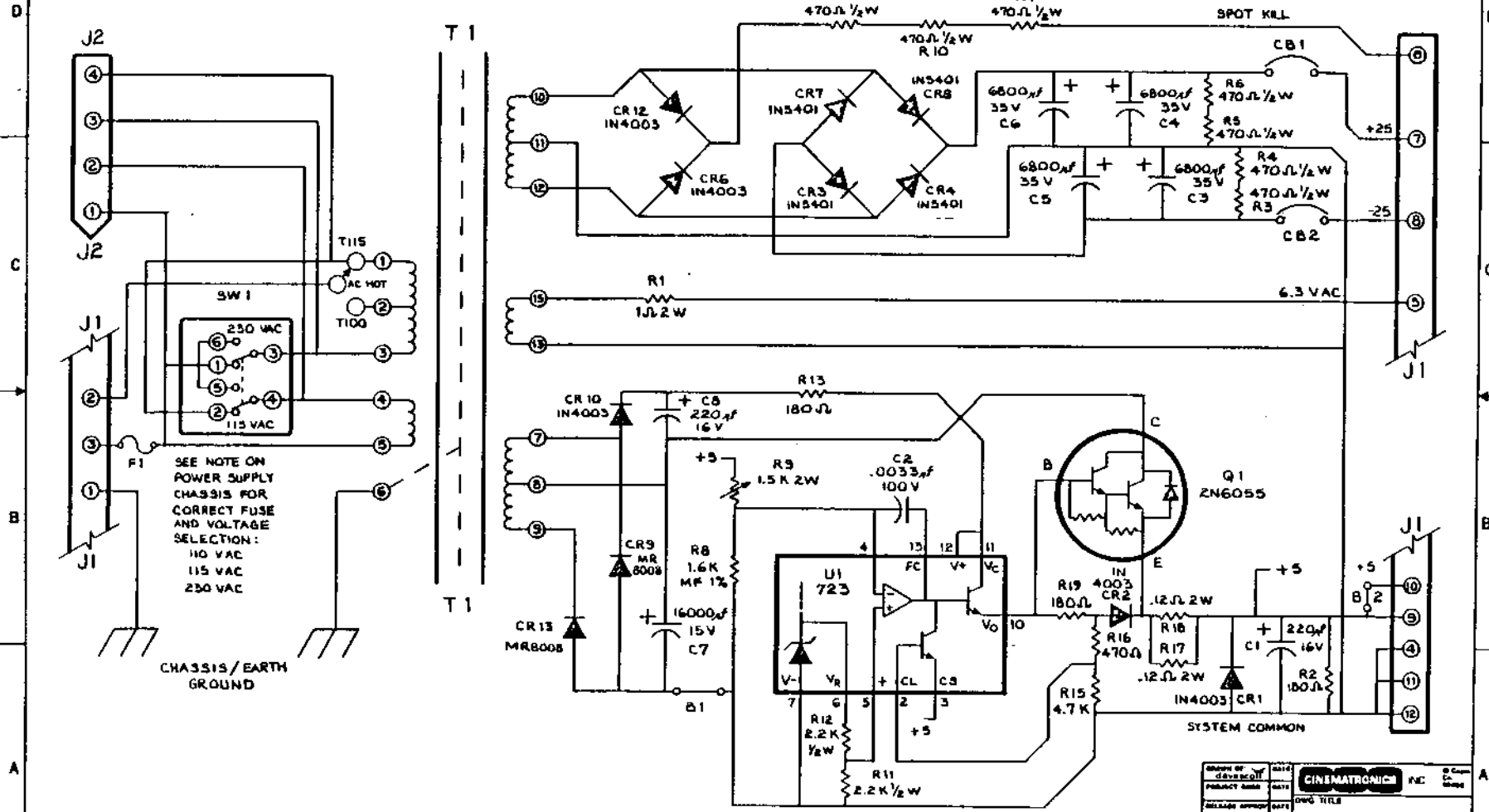
MATERIAL:	DRAWN BY: C. Williams	DATE: 7-77	<b>CINEMATRONICS</b> INC. <small>El Com Co 82020</small>
	PROJECT ENGR: C. Williams	DATE: 9-76	
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV: CFL	DATE: 9-79	DWG TITLE <b>POWER SUPPLY PINOUT ILLUSTRATION</b>
	DO NOT SCALE DWG		MODEL NO. DWG NO. 2 72-10877-03
TOLERANCE: UNLESS OTHERWISE SPECIFIED		PROJECTION: -E- ⊕	REV: A
SCALE:		CODE IDENT.	SHEET / OF /

DRAWING 40-31-0002



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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

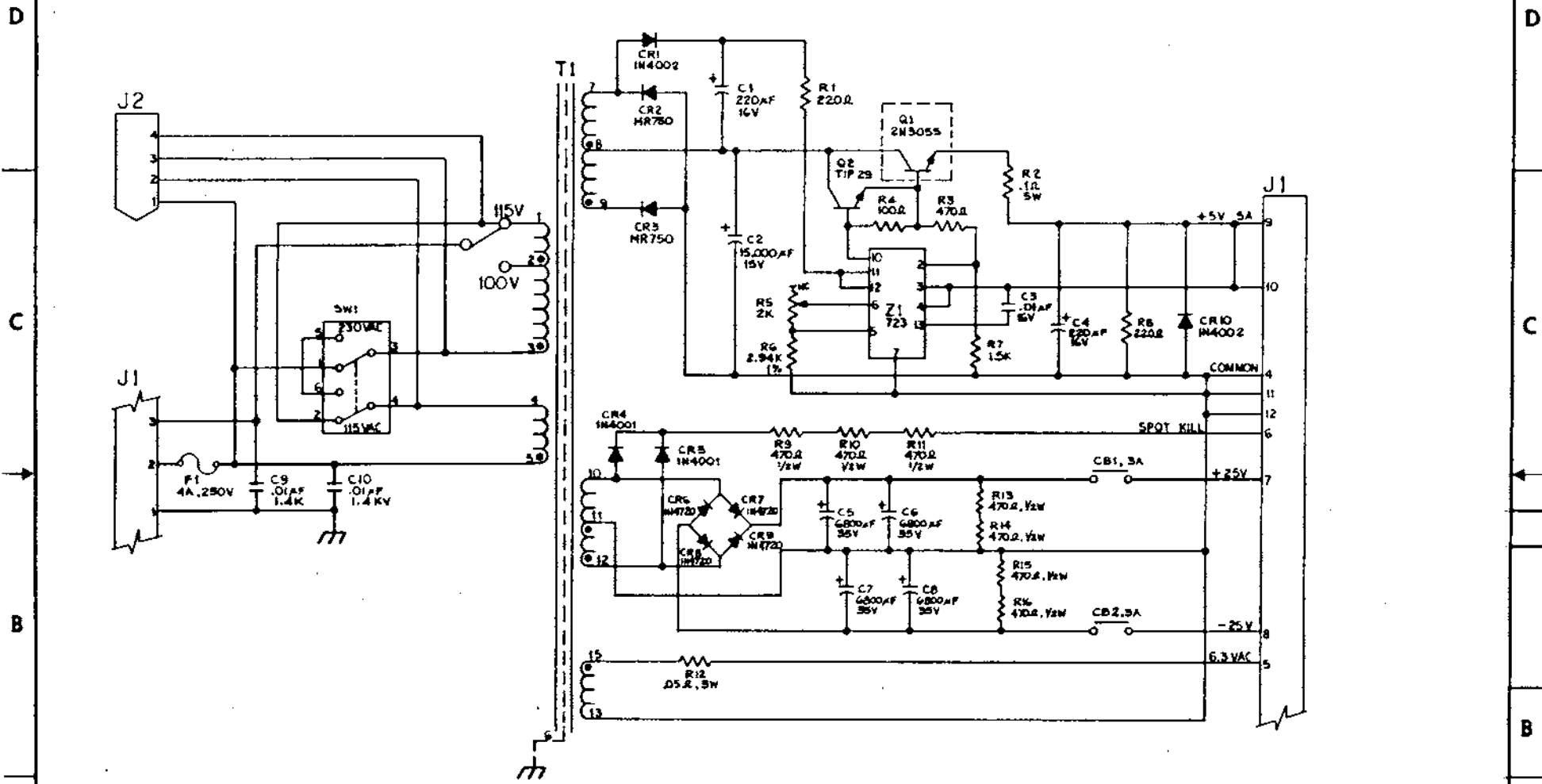
1. SCHEMATIC SET FOR 115 VAC OPERATION

NOTE: UNLESS OTHERWISE SPECIFIED

DESIGN OF	DATE	CINEMATRONICS, INC.	© Copy C. 1968
DESIGNED BY	DATE		
PRODUCT AREA	DATE	DRAW TITLE	
RELEASE APPROV.	DATE	CONDOR POWER SUP	
DO NOT SCALE DRAW	DATE		
TOLERANCE UNLESS OTHERWISE SPECIFIED	DATE	FORM NO.	REV.
PRODUCTION SCALE	DATE	0	72-10842-22 A
		COPY SHEET	SHEET 1 OF 1



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	01	PROTOTYPE	4 DEC 80	RA
	A	PRODUCTION RELEASE	13 JAN 81	RA
	B	ADD C9,10. SEE ECO 0028 "A"	29 JAN 81	RA



QTY	CODE	PART OR	NOMENCLATURE
REQD	IDENT	IDENTIFYING NO	OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS    DECIMALS    ANGLES ±                    ±                    ±		CONTRACT NO	
DRAWN C Escaleras		DATE 4 DEC 80	
CHECKED R Proctor			
62A0013-00		0028	
NEXT ASSY		USED ON	
APPLICATION		DO NOT SCALE DRAWING	
SCALE NONE		SHEET 1 OF 1	

SCHEMATIC

DRAWING NO  
12A0028-00

REV  
B

B 7 6 5 4 3 I

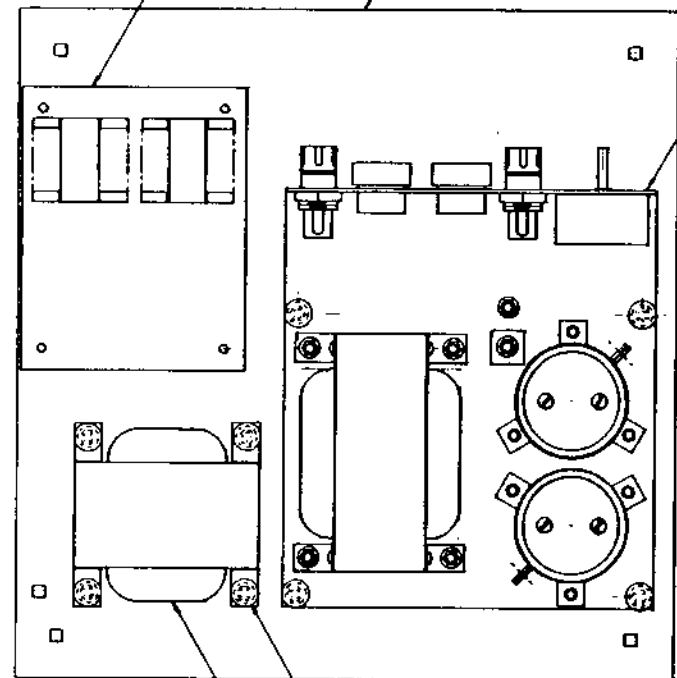
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PERM. REL.	1-18-65	A.F.L.

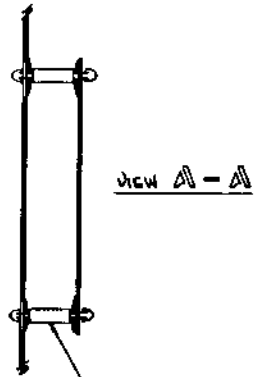
REGULATOR P.C. BOARD  
25-11625-01

HOUSING PLATE - PNE. HOUS. & TRM.  
25-11606-01

POWER SUPPLY  
25-10547-00  
PLATE, CARTRIDGE, 3/4" x 1/2", 25-10561-01 (4)  
WASHER, PLAT. NO. 10 x 1/2", 25-10568-01 (4)  
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
NUT, W6F, NO. 10-72, 25-10555-01 (4)

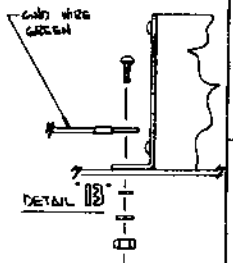


SEE DETAIL "B"  
TRANSFORMER  
25-11717-01  
BOLT, CARTRIDGE, 3/4" x 1/2"  
25-10551-01 (4)  
WASHER, PLAT. NO. 10 x 1/2", 25-10568-01 (4)  
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
NUT, W6F, NO. 10-72, 25-10555-01 (4)



VIEW A-A

DETAIL LOCKING R.C.B.  
SPRINGS (4)  
PIN 25-11607-01



DETAIL B

Ø Ø SHOWN

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	PROJECT BY	DATE	CINEMATRONICS INC.	BY CHIEF G. STARR
	DESIGNED BY	DATE		
FINISH	RELEASE APPROVED	DATE	DRAWN BY	
	DO NOT SCALE DIMS		TITLE	
	TOLERANCES UNLESS OTHERWISE SPECIFIED	SCALE	MODEL NO.	REV.
	PRODUCTION	SCALE	25-11700-01	A
	DATE	SCALE	1	SHEET 1 OF 2

8 7 6 5 4 3 2 1

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
4	REV. ECL	12/1/75	H-T-82

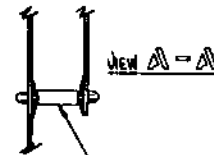
BOLT, ARRIDGE, 3/16" X 1/2", 25-10561-01 (4)  
WASHER, PLAT, NO. 10 X 1/2", 25-10562-01 (4)  
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
NUT, HEX, NO. 10-24, 25-10563-01 (4)

ROUTING PLATE - PWR SUPPLY & TRANS.  
20-11606-01

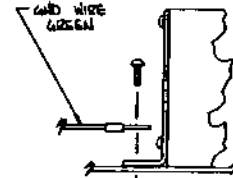
SEE DETAIL 'B'

TRANSFORMER, AT-11717-01  
BOLT, ARRIDGE, 3/16" X 1/2", 25-10561-01 (4)  
WASHER, PLAT, NO. 10 X 1/2", 25-10562-01 (4)  
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
NUT, HEX, NO. 10-24, 25-10563-01 (4)

REGULATOR P.C.B.  
20-11606-01



DIAL LOCKING PCB  
SPACER  
25-11607-01 (4)



POWER SUPPLY - CONTROL (-02)  
82-10847-20  
POWER SUPPLY - MAIN POWER (-03)  
82-10847-40

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

NOTES UNLESS OTHERWISE SPECIFIED

DATE:	DESIGNED BY:	DATE:	CINEMATRONICS INC. © 1975
	PROJECT NAME:	DATE:	
PARTS:	REVISED BY:	DATE:	DRAWN BY: AC
	APPROVED BY:	DATE:	
DO NOT SCALE DIMS			DWG TITLE: POWER SUPPLY ASSY
TOLERANCES UNLESS OTHERWISE SPECIFIED			FORM NO. 20-11700
PROJECTION SCALE: FULL			REV. 4
CODE SHEET			SHEET 2 OF 2

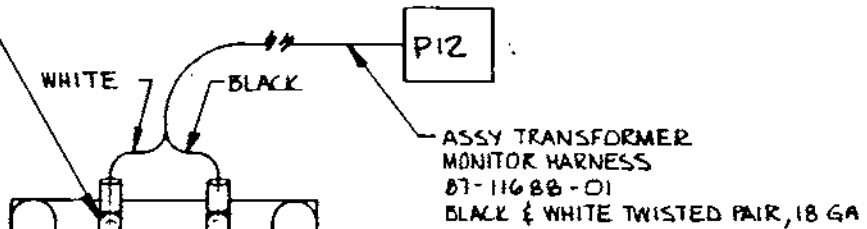
PROPRIETARY  
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL	ERN#018	4-6-82

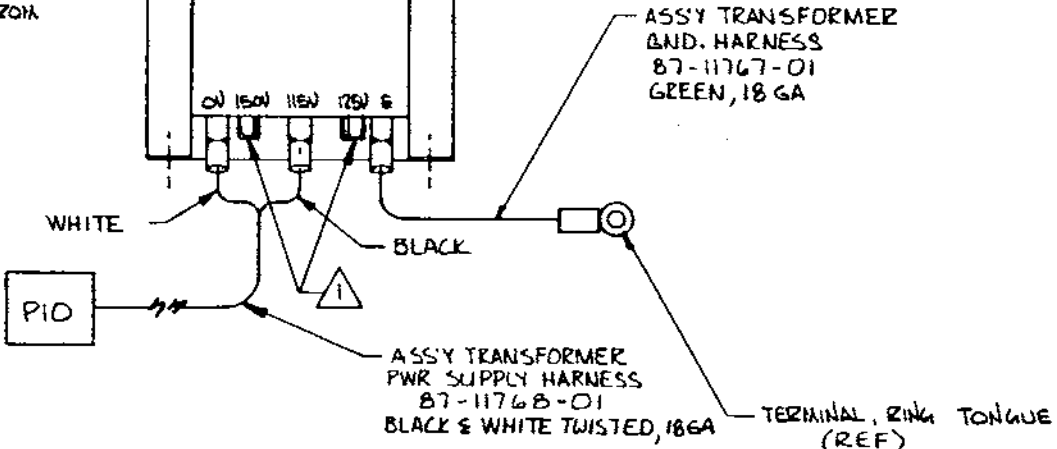
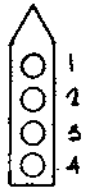
AS VIEWED FROM  
WIRE SIDE.



FEMALE QUICK  
DISCONNECTS  
(REF)



AS VIEWED FROM  
WIRE SIDE.



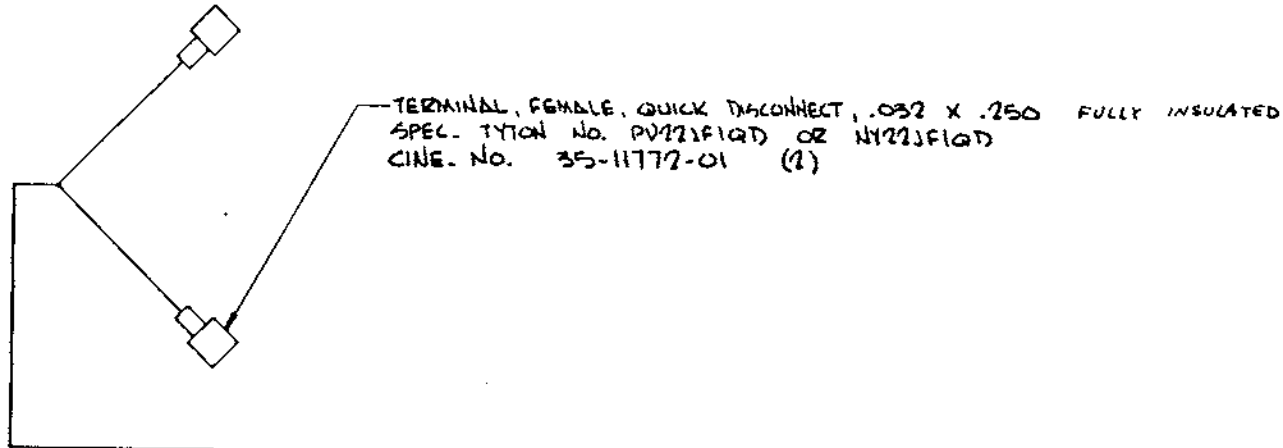
▲ ADD 3/32 HEAT SHRINK TUBING TO ALL TERMINALS.  
NOTES: UNLESS OTHERWISE SPECIFIED

TOLERANCE  
+1.0  
-0.0

MATERIAL:	DRAWN BY: E. RUIZ	DATE: 4-14-82		81 C-1008 Ca 92030
	PROJECT ENGR: K. B.	DATE: 4-14-82		
FINISH:	RELEASE, APPROV:	DATE:	DWG TITLE ASST. TRANSFORMER & CORD BASTER (J.G.)	
	DO NOT SCALE DWG		MODEL NO:	DWG NO:
TOLERANCE: UNLESS OTHERWISE SPECIFIED		SCALE:	C	38-11723-01
PROJECTION:		SCALE:	CODE IDENT:	SHEET 1 OF 1
NONE				

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



PI2



PI2  
2 CIR HALLG.  
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. RAINEZ	DATE: 4/16	<b>CINEMATRONICS</b> INC El Cajon Ca 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 4/16	
	RELEASE APPROV: <i>[Signature]</i>	DATE: 4/16	
FINISH:	DO NOT SCALE DWG		DWG TITLE: HARNESS ASSY - TRANS. * MONITOR
	TOLERANCE UNLESS OTHERWISE SPECIFIED		MODEL NO: C
	PROJECTION: 1st Angle	SCALE: FULL	DWG NO: 87-11688-01 A
CODE IDENT.			REV: A
SHEET 1 OF 1			

4

3

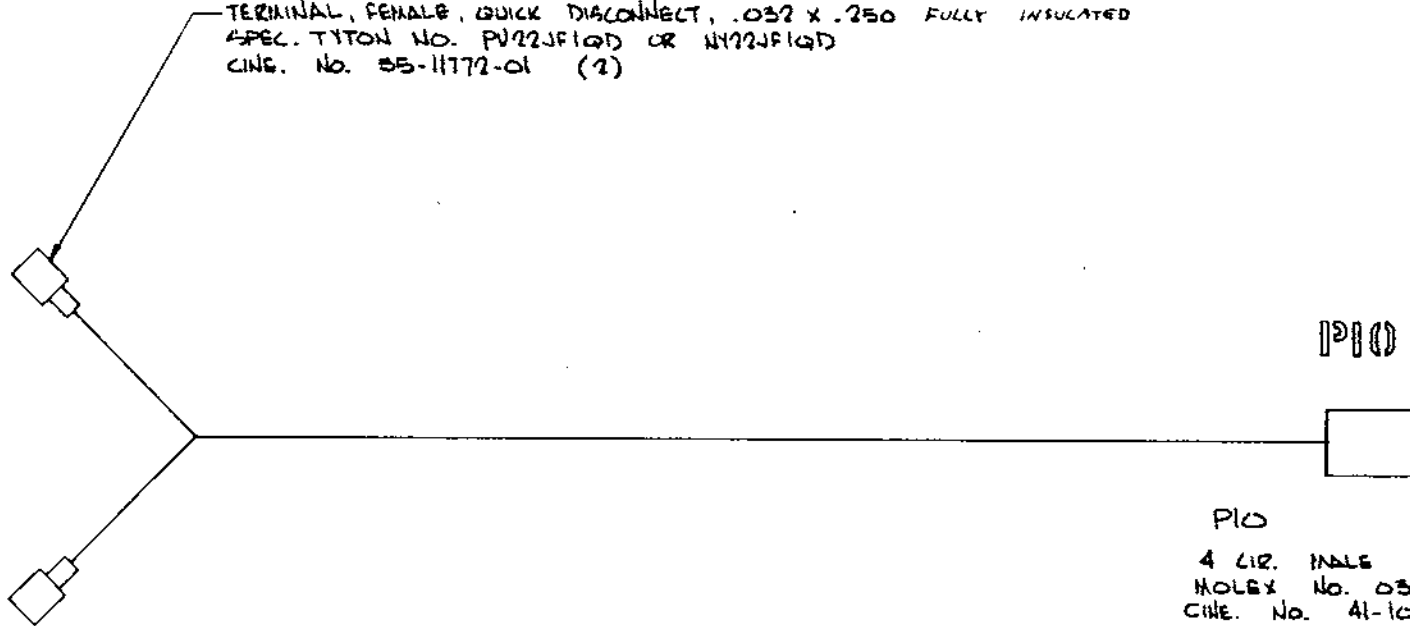
2

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	0214 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  
 CINE. No. 85-11772-01 (2)



PI10  
 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	
2	WHITE	18	M	15.0	
3					NOT USED
4					NOT USED

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

MATERIAL:	DRAWN BY: F. R. HINES	DATE: 1/1/82	<b>CINEMATRONICS</b> INC. El Cajon Ca. 92030
	PROJECT ENGR: [Signature]	DATE: 7/68	
FINISH:	RELEASE APPROV. DATE: [Signature] 7/68	DO NOT SCALE DWG	DWG TITLE: HARNESSES BASH- TRANSF. * POWER SUPPLY
	TOLERANCE UNLESS OTHERWISE SPECIFIED	PROJECTION: <input checked="" type="checkbox"/> FIRST ANGLE	SCALE: FULL
TOL. +1.0 -0.0	MODEL NO.	DWG NO. 87-11768-01	REV. A
	CODE IDENT.	SHEET 1 OF 1	

4

3

2

1

4

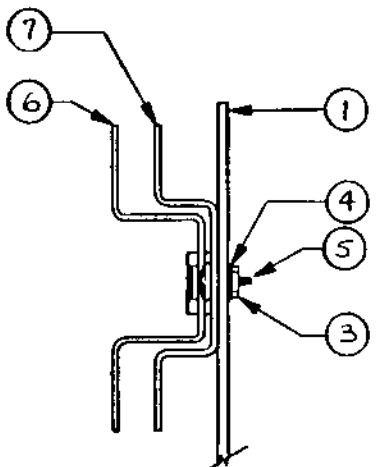
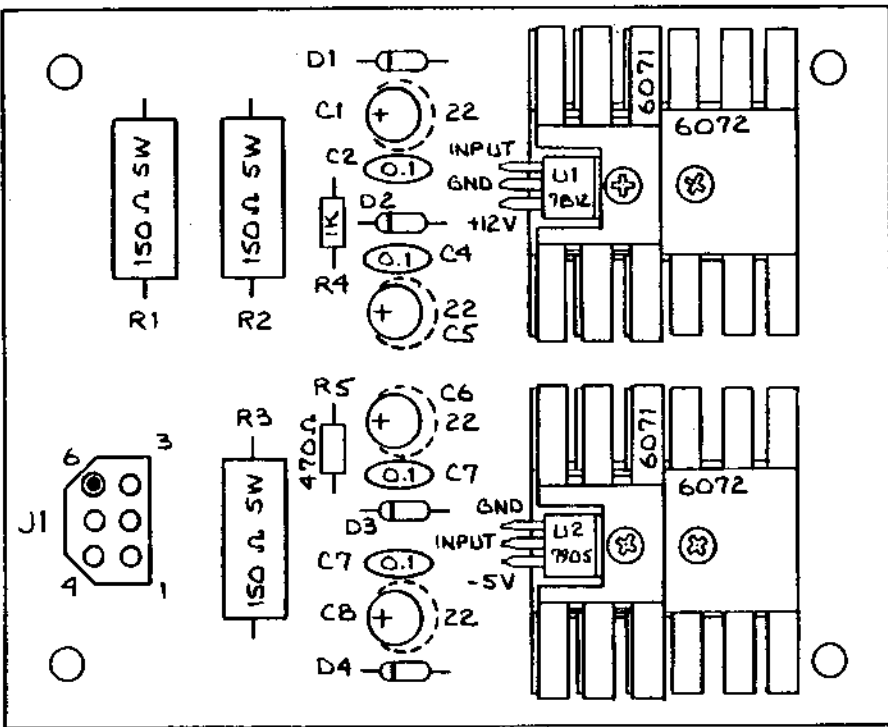
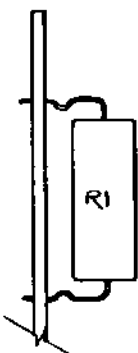
3

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, 50V

1. ALL DIODES ARE 1N4003

NOTES: UNLESS OTHERWISE SPECIFIED

16 MARCH 1981

MATERIAL:	DRAWN BY: <i>dale scott</i>	DATE: <i>2/1/81</i>		81 Canon Co. 82020
	PROJECT ENGR: <i>R.Boles</i>	DATE: <i>2/1/81</i>		DWG TITLE P.C.A. REGULATOR + 12 AND -5 VOLTS
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE: <i>2/1/81</i>	MODEL NO.	DWG NO. 81-11685-01
	DO NOT SCALE DWG	TOLERANCE: UNLESS OTHERWISE SPECIFIED	DWG SIZE C	REV. B
	PROJECTION:	SCALE: 2:1	CODE IDENT.	SHEET 1 OF 7

4

3

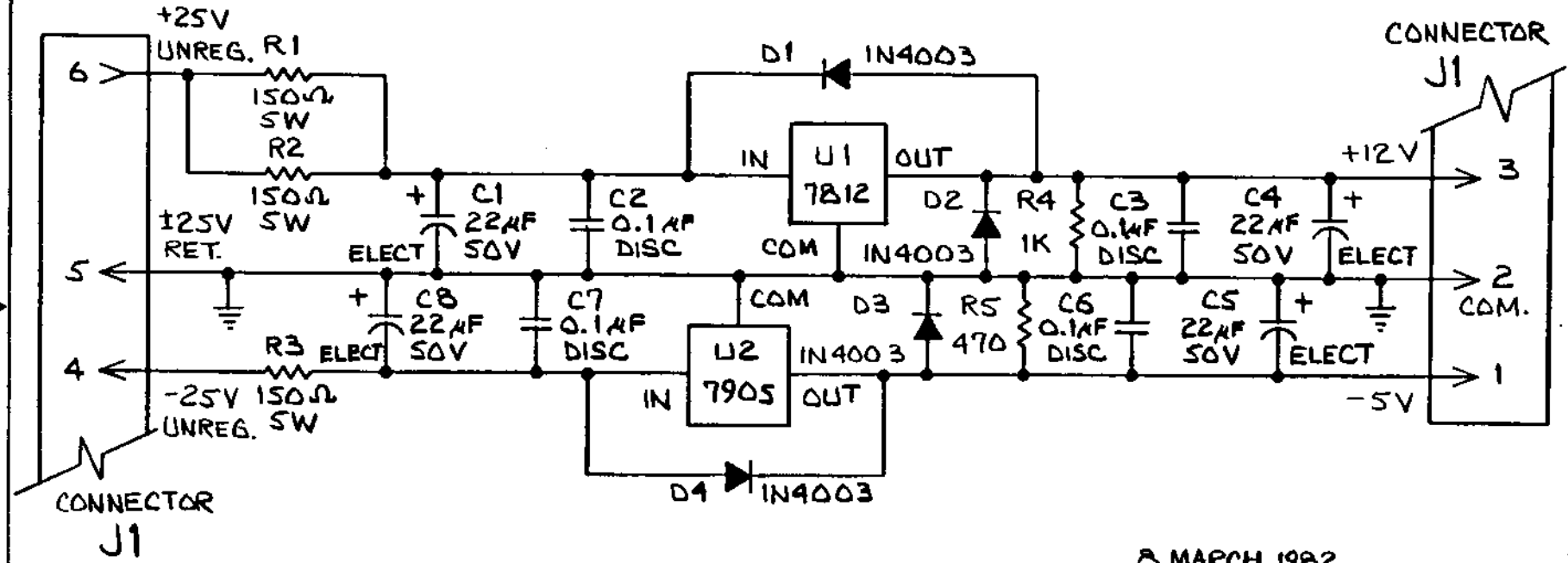
2

1

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



8 MARCH 1982

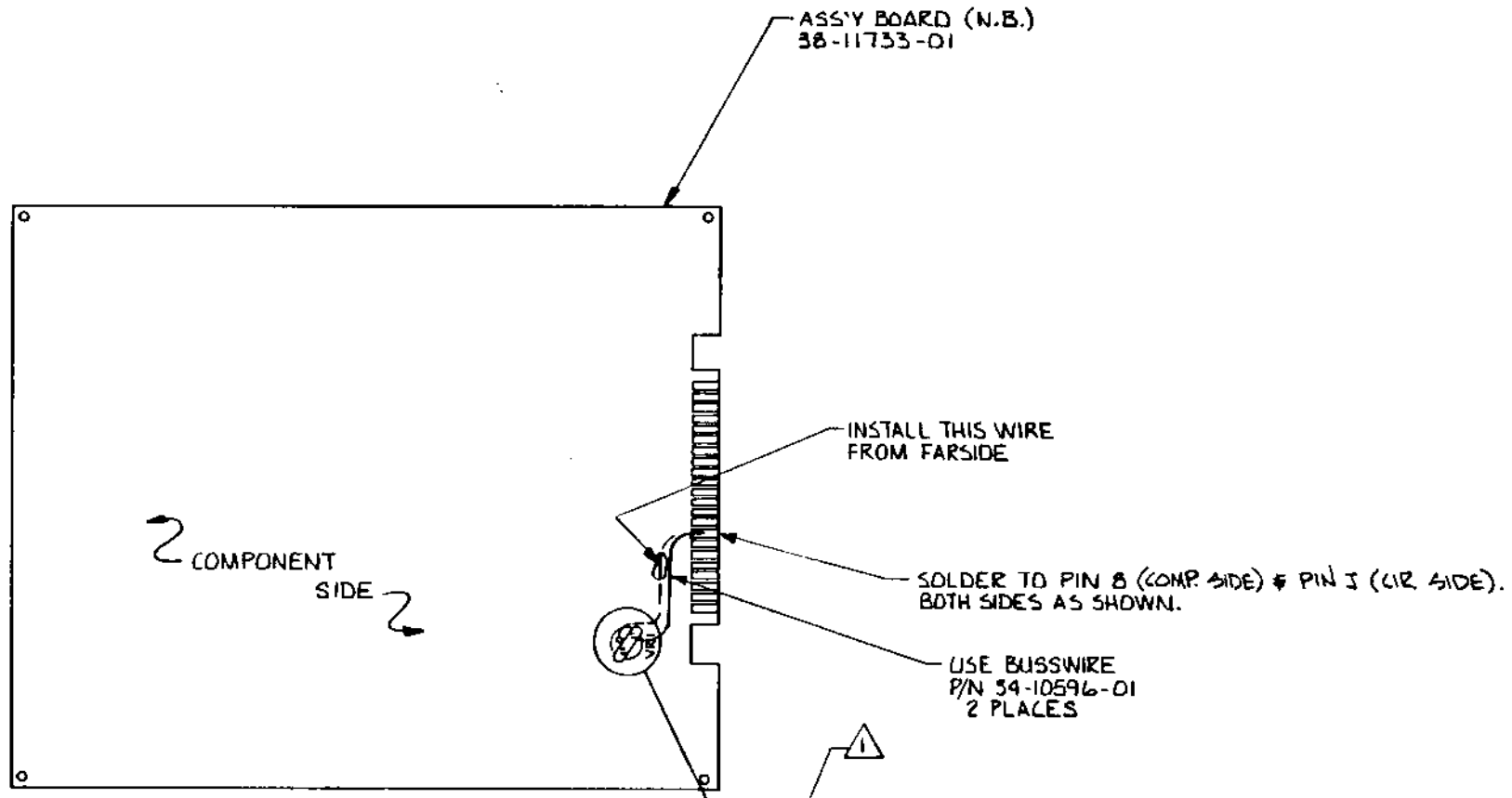
2. R4 AND R5 VALUES ARE IN OHMS  
 1. R4 AND R5 ARE 1/4 WATT, 5% CARBON  
 NOTES: UNLESS SPECIFIED OTHERWISE

MATERIAL:	DRAWN BY: <i>dawsonscott</i>	DATE	<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:		REV. B		
CODE IDENT.			SHEET 1 OF 1		

BRUSHING 40-21 40423

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL	ERN 15	9-7-62



⚠ 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: 4-62		81 Cajon Ca. 92020
	PROJECT ENGR:	DATE: 7-62		DWG TITLE: ASS'Y BOARD W/VOLUME MOD (N.B.)
FINISH:	RELEASE APPROV:	DATE: 7-62	MODEL NO.	DWG NO. 38-11733-02
	DO NOT SCALE DWG	TOLERANCE: UNLESS OTHERWISE SPECIFIED	SIZE: c	REV: A
PROJECTION:	SCALE:	CODE IDENT.	SHEET 1 OF 1	

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIC 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

△ CINEMATRONICS PART NO.

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

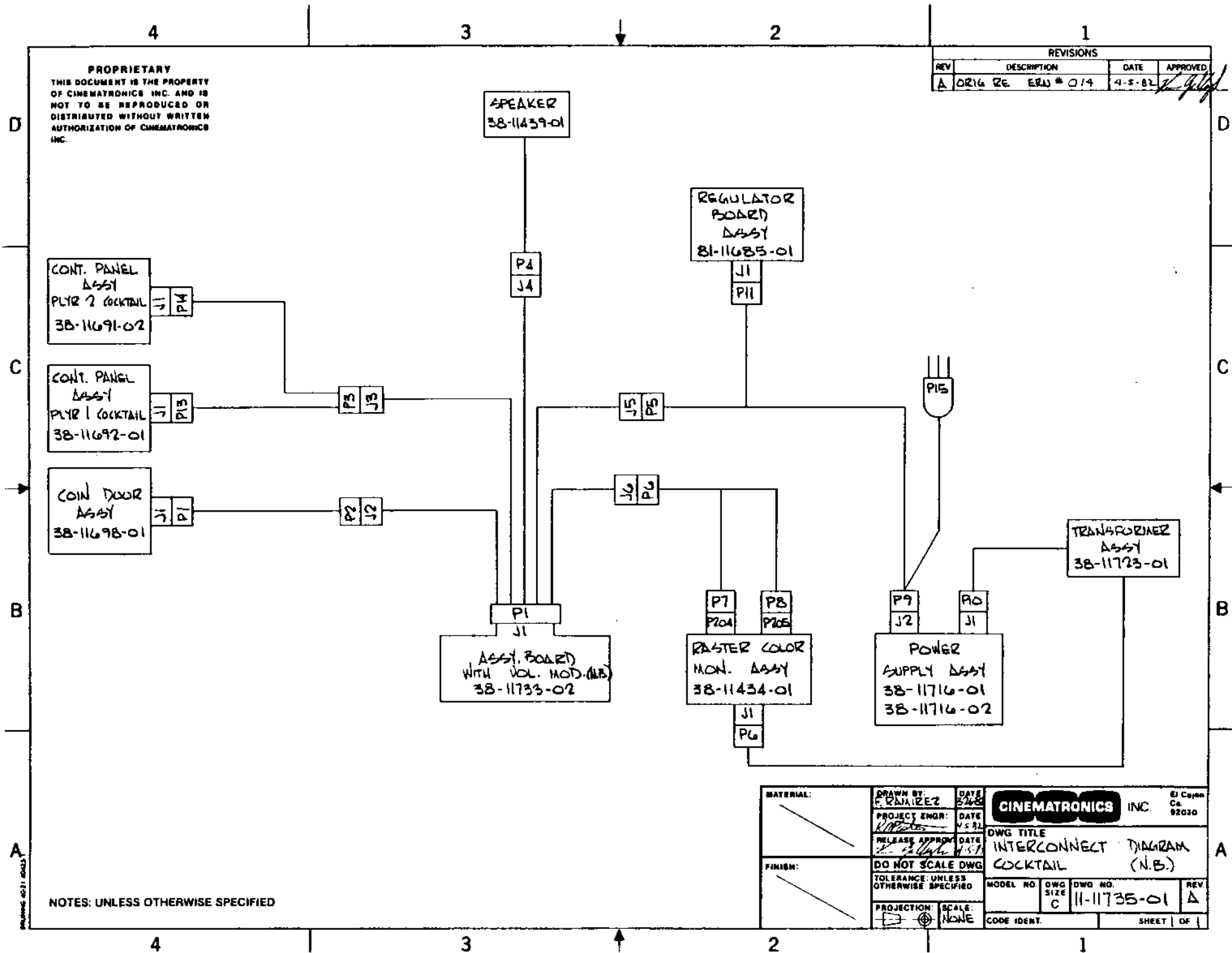
NOTES:

TOL.  
 +1.0"  
 -0.0"

MATERIAL:	DRAWN BY: TEJNES	DATE 7/15/82	<b>CINEMATRONICS</b> INC. Et 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		MODEL NO. DWG NO. REV. 80-11692-01 A1
TOLERANCE: UNLESS OTHERWISE SPECIFIED		SCALE:	CODE IDENT. SHEET 1 OF 1
PROJECTION:			

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



NOTES: UNLESS OTHERWISE SPECIFIED

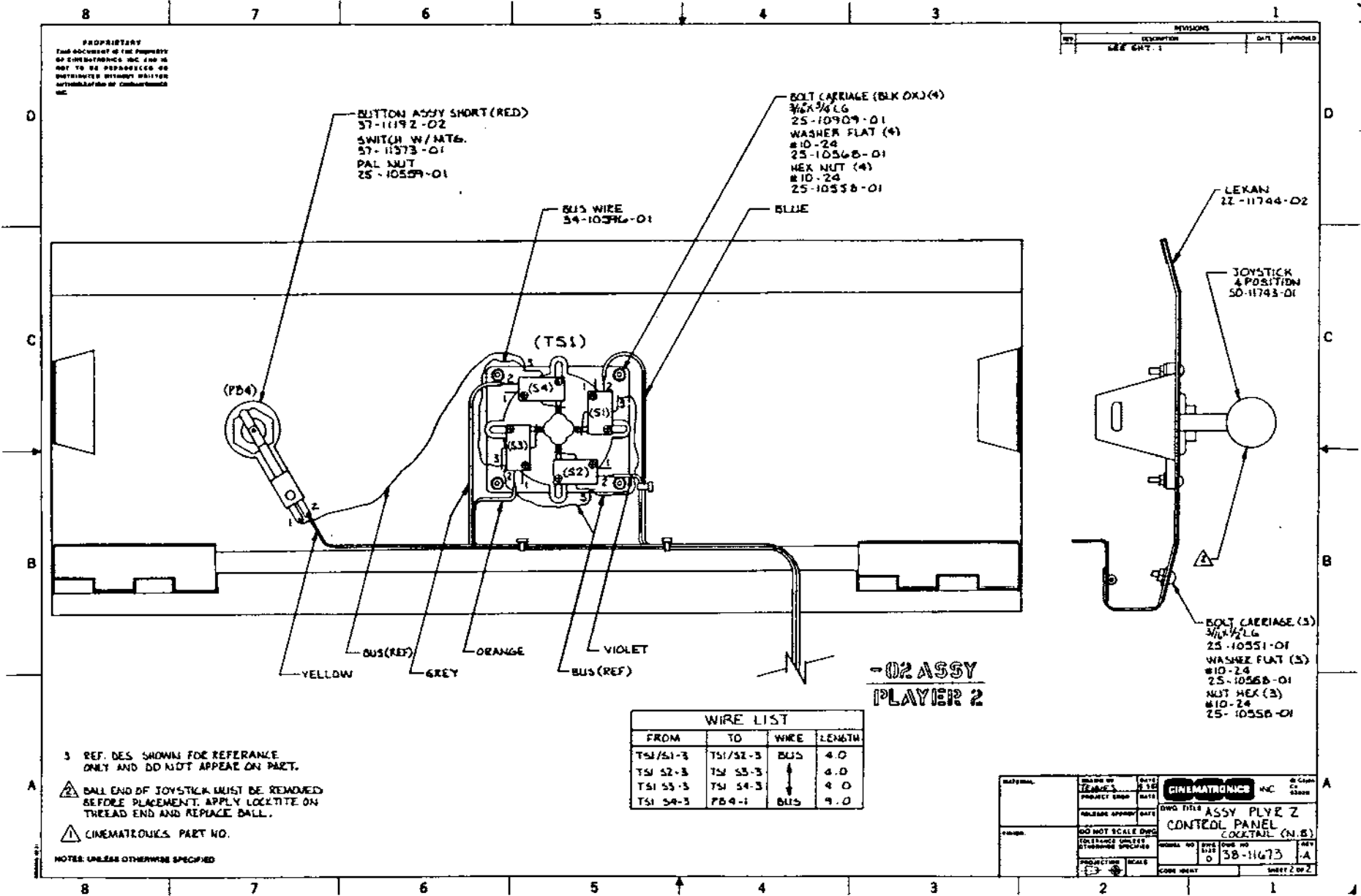
MATERIAL:	DRAWN BY: F. RIZALIEZ	DATE: 2/82	<b>CINEMATRONICS</b> INC. El Cerrito Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 7/5/82	
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE: 7/5/82	DWG TITLE INTERCONNECT DIAGRAM COCKTAIL (N.B.)
	DO NOT SCALE DWG		
TOLERANCE: UNLESS OTHERWISE SPECIFIED	PROJECTION:	SCALE: NONE	MODEL NO. DWG SIZE C
			DWG NO. 11-11735-01
			REV. A
			CODE IDENT. SHEET   OF

DRAWING 4031 (REV. 11-82)



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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	REV. CHG. 1		



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

BOLT CARRIAGE (BLK OX) (4)  
 3/16 X 1/2 LG  
 25-10909-01  
 WASHER FLAT (4)  
 #10-24  
 25-10568-01  
 HEX NUT (4)  
 #10-24  
 25-10538-01

BUS WIRE  
 34-10396-01

BLUE

LEKAN  
 22-11744-02

JOYSTICK  
 & POSITION  
 50-11743-01

(TS1)

(PB4)

YELLOW

BUS (REF)

GREY

ORANGE

VIOLET

BUS (REF)

-02 ASSY  
 PLAYER 2

WIRE LIST			
FROM	TO	WIRE	LENGTH
TS1 51-3	TS1 52-3	BLU	4.0
TS1 52-3	TS1 53-3	↑	4.0
TS1 53-3	TS1 54-3	↓	4.0
TS1 54-3	PB4-1	BLU	9.0

BOLT CARRIAGE (3)  
 3/16 X 1/2 LG  
 25-10551-01  
 WASHER FLAT (3)  
 #10-24  
 25-10568-01  
 NUT HEX (3)  
 #10-24  
 25-10556-01

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	DATE BY	DATE	CINEMATRONICS INC. © Copy All Rights Reserved
	DESIGN BY	DATE	
PROJECT	PROJECT	DATE	DWG TITLE
	APPROVED	DATE	
PART NO.	DO NOT SCALE DWG	TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWING NO.
	PRODUCTION	SCALE	
	CODE	DATE	SHEET 2 OF 2

4

3

2

1

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN # 012	5-15-82	

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				
	P3-7	P13-1	BLACK				
	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	F	10.0	GND NO. 2 GND NO. 1		
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				
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 NOT USED
	P14-2						
	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				

NOTES: UNLESS OTHERWISE SPECIFIED

TOLERANCE  
+1.0  
-0.0

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE: 3-9-82		St. Cajon Ca. 92020
	PROJECT ENGR: <i>R. [Signature]</i>	DATE: 1/15/82		
FINISH:	RELEASE APPROV:	DATE:	DWG TITLE WIRE LIST - CONTROL PNL INTERCONN. COCKTAIL (J.G.)	
	DO NOT SCALE DWG	TOLERANCE: UNLESS OTHERWISE SPECIFIED	MODEL NO.:	DWG NO.:
PROJECTION:	SCALE:	PROJECTION:	MODEL NO.:	DWG NO.:
			SIZE: C	88-11710-01
			CODE IDENT.	REV: A
				SHEET OF 1

4

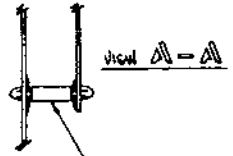
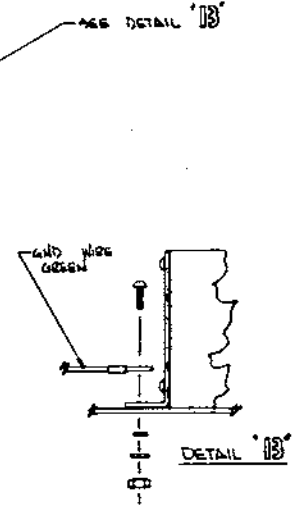
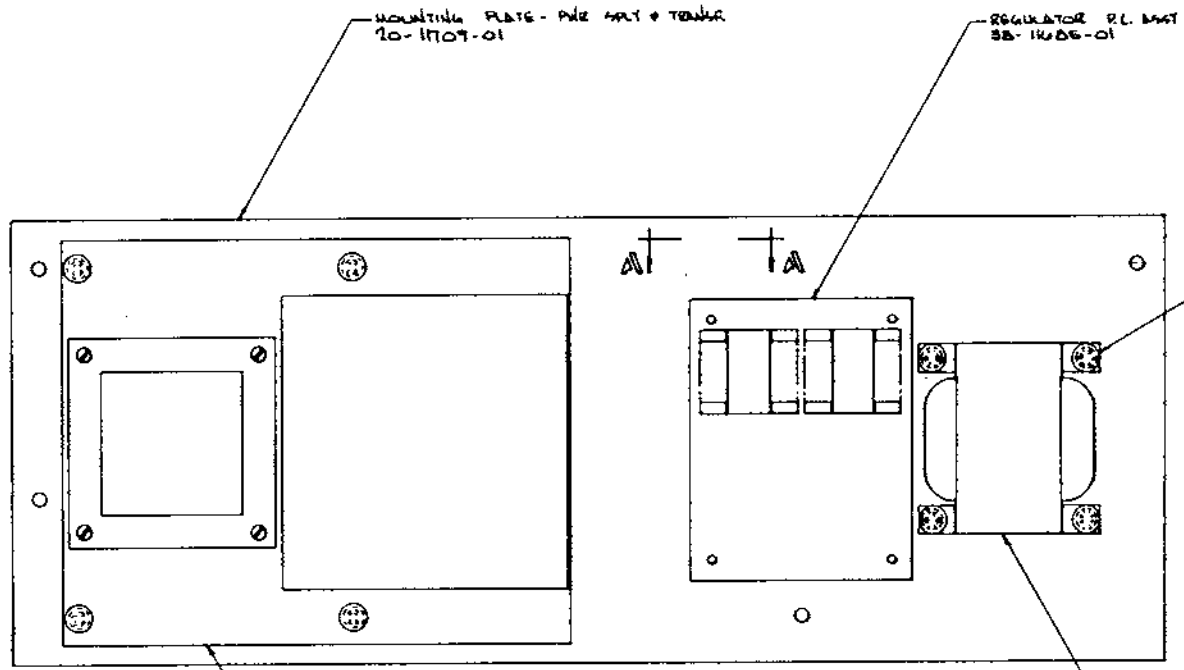
3

2

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	ORIG. DEL.	JAN 56	[Signature]

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POWER SUPPLY 82-10842-20 CALDRE (-01)  
 POWER SUPPLY 82-10842-40 HALF POWER (-02)  
 BOLT, CARRIAGE, 3/16" X 1/2", 25-10564-01 (4)  
 WASHER, PLAT. NO. 10 X 1/2", 25-10568-01 (4)  
 WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
 NUT, HEX. NO. 10-74, 25-10565-01 (4)

TRANSFORMER, 87-11717-02  
 BOLT, CARRIAGE, 3/16" X 1/2", 25-10561-01 (4)  
 WASHER, PLAT. NO. 10 X 1/2", 25-10568-01 (4)  
 WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)  
 NUT, HEX. NO. 10-74, 25-10565-01 (4)

⌀1 NOTED  
 ⌀2 NOTED

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

NOTES: UNLESS OTHERWISE SPECIFIED

INTERNAL	DESIGNED BY J. J. JENSEN	DATE 1/27/56	DRW. NO. 25-11716-01	REV. A
	PROJECT POWER SUPPLY	DATE 1/27/56	DRW. NO. 25-11716-01	REV. A
	BY J. J. JENSEN	DATE 1/27/56	DRW. NO. 25-11716-01	REV. A
	CHECKED BY WILLIAM SPYRROU	DATE 1/27/56	DRW. NO. 25-11716-01	REV. A
	DO NOT SCALE DRAWING			
	STORAGE UNITS AS SHOWN			
	PRODUCTION SCALE FULL			