

SERVICE MANUAL
385-01-0300

summer



SWIMMER

CENTURI, INC.
245 W. 74TH PLACE
HIALEAH, FLA. 33014

CUSTOMER SERVICE:
TEL. #(305) 558-5200 (IN FLORIDA)
TEL. #(800) 327-7710 (OUTSIDE FLORIDA)

TELEX: 803694 ANSB CENTURI CABLE: CENTURI

"SWIMMER"

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USER INFORMATION - F.C.C.

WARNING

THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY, AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. AS TEMPORARILY PERMITTED BY REGULATION, IT HAS NOT BEEN TESTED FOR COMPLIANCE PURSUANT TO SUBPART J OF PART 15 OF F.C.C. RULES, WHICH ARE 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.

INTRODUCTION

"SWIMMER" IS A MICROPROCESSOR BASED COIN-OPERATED ELECTRONIC GAME, THAT MAKES EXTENSIVE USE OF DIGITAL INTEGRATED CIRCUITRY AND TELEVISION MONITOR CONCEPTS. THIS MANUAL IS DESIGNED FOR THE USE OF MAINTENANCE TECHNICIANS WHO POSSESS A GENERAL WORKING KNOWLEDGE OF SOLID-STATE CIRCUITRY, AND VIDEO MONITOR THEORY. ANY INDIVIDUAL NOT KNOWLEDGEABLE IN THESE AREAS SHOULD NOT ATTEMPT REPAIR OF THE ELECTRONIC PORTIONS OF THE GAME.

IN ADDITION TO THIS MANUAL AND TRAINING IN ELECTRONICS, TROUBLE-SHOOTING AND REPAIR WILL BE FACILITATED BY ACCESS TO GENERAL-TYPE HANDTOOLS, A MULTIMETER, A 50 OR 100 MHZ OSCILLOSCOPE AND A LOGIC PROBE WOULD BE HELPFUL.

TECHNICAL ASSISTANCE IS AVAILABLE BY CALLING (305) 558-5200. QUESTIONS OR COMMENTS CONCERNING "SWIMMER" OR ANY OF OUR GAMES ARE WELCOME AND SHOULD BE DIRECTED TO:

CENTURI, INC.

CUSTOMER SERVICE DEPARTMENT
#800-327-7710 (OUTSIDE THE STATE OF FLA.)
#305-556-5888 (IN FLORIDA)

NOTES

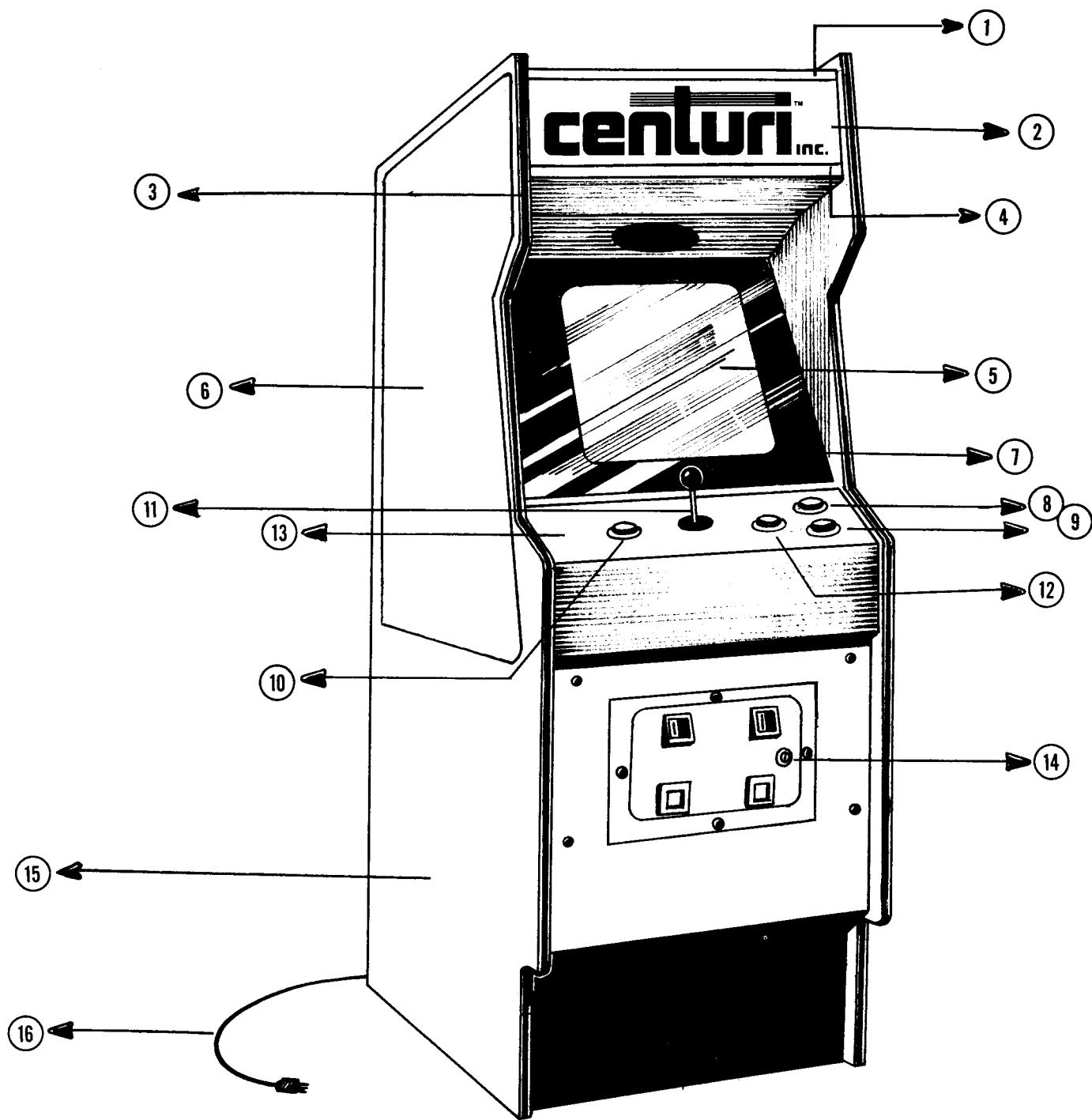
NEVER REPLACE ANY COMPONENTS WITH ANYTHING OTHER THAN EXACT REPLACEMENT PARTS.

NEVER REMOVE CIRCUIT BOARD CONNECTIONS WHILE POWER IS ON.

DO NOT REPLACE THE FUSE WITH ANYTHING OTHER THAN THE PROPER VALUE.

A BLOWN FUSE INDICATES AN OVERLOAD CONDITION WITHIN THE GAME. REPLACING THE FUSE WITH A HIGHER VALUE CAN CAUSE SEVERE DAMAGE TO INTERNAL COMPONENTS IF AN OVERLOAD OCCURS.

ALWAYS CONSULT THE MANUAL BEFORE ATTEMPTING REPAIRS.



(FIG,1) FRONT VIEW OF CABINET.

SWIMMER CABINET
(FIGURE 1)

PARTS LIST

ITEM	CENTURI P/N:	DESCRIPTION:
1.	343-03-0200	TOP ANGLE HOLD DOWN BRACKET
2.	385-06-0100	SILK SCREENED MARQUEE PANEL
3.	361-10-0200	VINYL TRIM, 7 1/4" LONG
4.	361-03-0100	GLASS HOLDING BRACKET
5.	361-04-1000	VIEWING GLASS
6.	385-06-0200 385-06-0600 385-06-0300 385-06-0700	LEFT TOP DECAL LEFT BOTTOM DECAL RIGHT TOP DECAL RIGHT BOTTOM DECAL
7.	385-06-0500	SILK SCREENED MONITOR OVERLAY
8.	-----	1-PLAYER START BUTTON
9.	-----	2-PLAYER START BUTTON
10.	-----	DIVE BUTTON - LEFT
11.	50130109	8-POSITION JOYSTICK
12.	-----	DIVE BUTTON - RIGHT
13.	385-14-0200	CONTROL PANEL WIRED ASS'Y
14.	360-01-0600	COINCO COIN DOOR
15.	385-01-0400	WOOD CABINET ASS'Y
16.	361-12-0900A	LINE CORD

"SWIMMER"

Game Description:

Continuing with its policy of producing high quality games, Centuri, Inc., adds to its successful line, "SWIMMER". Centuri incorporates into this game, all the elements of sight and sound necessary to attract a player of any skill level.

The player controls the "Swimmer" with the 8 way joystick and avoids obstacles using the "Dive" Button.

The game "Swimmer" consists of 4 different rounds of play which are as follows:

ROUND 1: The Swimmer must avoid the logs and turtles while collecting the maximum of fruits as he can. To complete the round, the Swimmer should dive under the "giant crab". If during any round you lose the Swimmer the round is restarted at the same level in which the Swimmer was lost but without any fruit. In order to receive the highest bonus, all fruits shown on the instruction panel must be collected.

ROUND 2: Round 2 differs from Round 1 in that "guerrilla crabs" replace the turtles as obstacles and the number of logs and crabs are increased. A new element called "power feed" appears in this round. Upon taking the "power feed" pill, the Swimmer is transformed into a super power for a short period of time. While a super power, the Swimmer can eat the "querilla crabs" as well as the fruit. The sound changes to warn the player when the super power of the Swimmer is about to fade away. The end of the round is completed by avoiding the "giant crab". Points are awarded by eating fruits or destroying enemies.

ROUND 3: This fast-paced round includes water-spiders that move randomly in any direction and changing their direction unexpectedly. The "power feed" enables the Swimmer to stay alive until the "giant crab" appears. Again, the crab should be avoided.

ROUND 4: This is the most difficult round of the game and starts with a pond that has boulders in it. Three "piranhas" challenge the Swimmer. The "power feed" should be used to destroy the "piranhas" before their heads flash red. When all the "cannibal piranhas" are destroyed, the mission is complete and the Swimmer is displayed on the Treasure Island and awarded all bonuses gained.

If any Swimmers are remaining, the game restarts with Round 1 but becomes more difficult and faster.

Manufactured Under License from Tehkan, Ltd.

"SWIMMER" GAME INSTRUCTIONS

1. Insert Coin(s). Push Start Button.
2. Control Swimmer with joystick.
3. To dive push joystick forward and depress Dive Button at the same time.
4. Collect fruits for points.
5. Avoid Logs.
6. Avoid Crabs, Water Spiders and Piranhas except when you are energized by catching "POWER FEED".
7. Bonus: 1st 2nd 3rd 4th

<u>Strawberries</u>	100	200	300	400
<u>Bananas</u>	200	400	600	800
<u>Grapes</u>	300	600	900	1200
<u>Melon</u>	400	800	1200	1600
8. Free Swimmer at 10,000 pts. or when you match the lucky numbers.
9. Game over when all Swimmers are used.

SCORING FOR EATING FRUITS

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
Cherries	50	100	150	200
Peaches	50	100	150	200
Apples	50	100	150	200
Oranges	50	100	150	200

DIP SWITCH SETTINGS

The following Dip Switches for the Game "SWIMMER" are found on the C.P.U. Board. The settings are a guide in selecting optional game format.

DIP SWITCH A (8 P DIP SWITCH)

	<u>SW.1</u>	<u>SW.2</u>	<u>SW.3</u>	<u>SW.4</u>	<u>SW.5</u>	<u>SW.6</u>	<u>SW.7</u>	<u>SW.8</u>
1 Coin, 1 Play							Off	Off
1 Coin, 2 Play							On	Off
1 Coin, 3 Play							Off	On
1 Coin, 6 Play							On	On
1 Coin, 1 Play						Off	Off	
2 Coin, 1 Play						On	Off	
1 Coin, 2 Play						Off	On	
1 Coin, 3 Play						On	On	
10,000 Point - 1 EXTRA				Off	Off			
20,000 Point - 1 EXTRA				On	Off			
30,000 Point - 1 EXTRA				Off	On			
NO EXTRA				On	On			
3 SWIMMER	Off	Off						
4 SWIMMER	On	Off						
5 SWIMMER	Off	On						
FREE PLAY	On	On						

DIP SWITCH B (4 P DIP SWITCH)

	<u>SW.1</u>	<u>SW.2</u>	<u>SW.3</u>	<u>SW.4</u>
COCKTAIL TABLE	Off			
UPRIGHT	On			
NO SOUND IN DEMONSTRATION			Off	
SOUND IN DEMONSTRATION				
BEGINNER (EASY)	Off	Off		
DIFFICULT	Off	On		
VERY DIFF.	On	On		

INSTALLATION

Your game was shipped from the factory in ready-to-play condition. A brief inspection is suggested before the machine is removed from the carton. If there is damage to the shipping carton, contact the freight carrier for claim purposes. External damage could indicate possible damage to the cabinet and/or electronics components.

After the carton has been satisfactorily inspected, remove the machine from the shipping carton.

Examine the interior of the game for disconnected wires, cables, or harnesses. Make sure the electronic devices are securely mounted in their sockets, etc. Record the game serial number, since it will be required for reference and servicing.

ELECTRICAL REQUIREMENTS

Unless otherwise specified, this game is set to operate at 110 Volts A.C. (See Fig. 2 and 110/220 VAC conversion instructions.)

Power supply chassis schematic information and parts list are included in this manual.

110/220 VAC CONVERSION INSTRUCTIONS

This game contains a harness configuration which allows the machine to be operated from either a 110 VAC or 220 VAC, 50 Hz or 60 Hz power source. All games shipped from Centuri, Inc., are in the 220 VAC configuration. To change to the 220 VAC configuration follow the procedure below.

FIRST: Unplug the machine from the wall outlet to completely eliminate shock hazards.

SECOND: Remove the single 3 AMP slow-blow fuse found in the A.C. Distribution Bracket, and install two, 1.5 AMP slow-blow fuses. Next cut the #18 AWG. white jumper at both ends of the fuse holder, and replace the cover.

THIRD: On the game power transformer, locate the "orange" jumper plug which is marked, 110 VAC. Unplug the "orange" jumper, and plug in the "red" jumper marked 220 VAC.

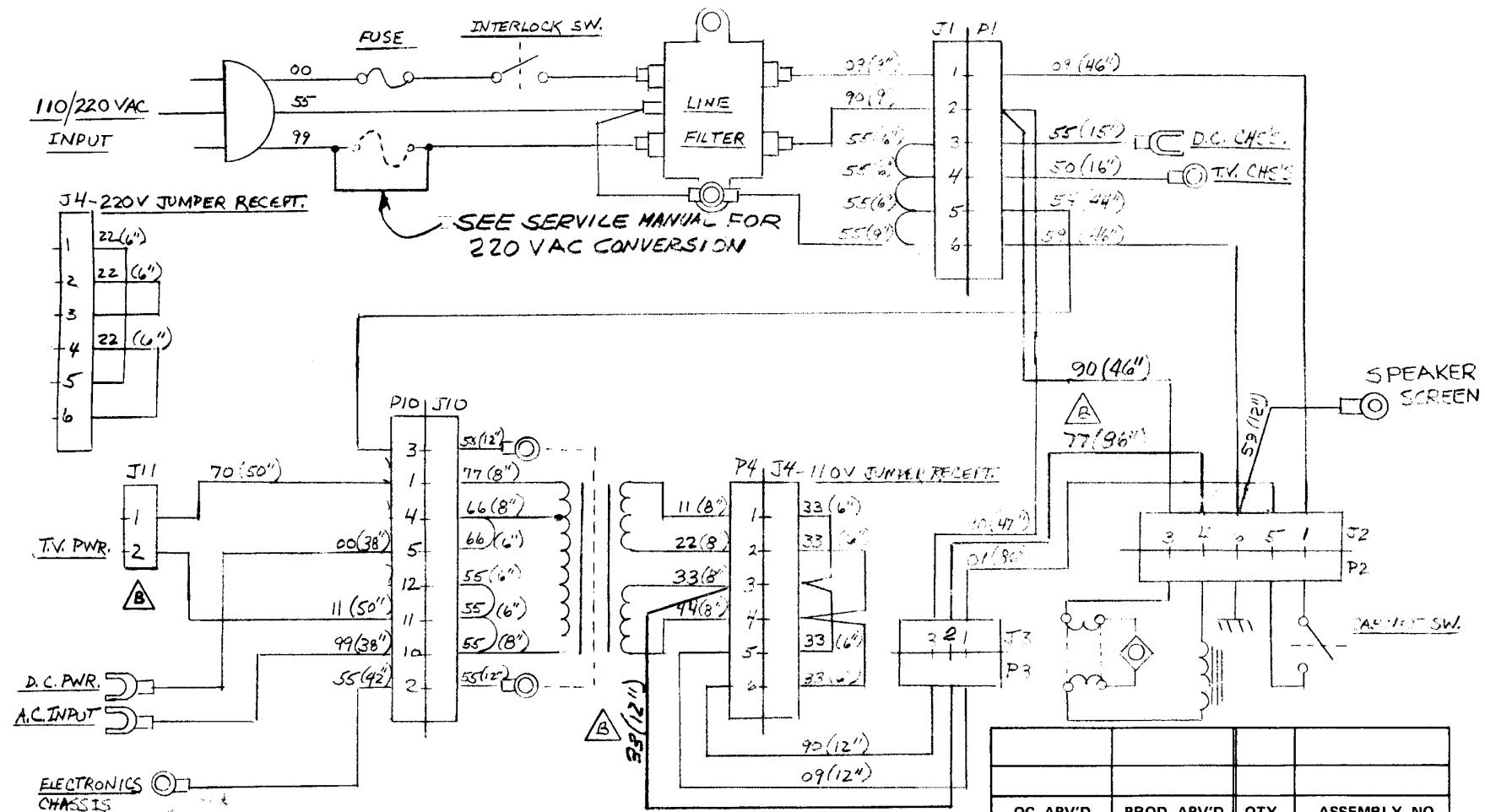
To revert back to 110 VAC, replace the components originally removed from the Steps above.

***NOTE: The common side of the A.C. Line must not be fused in the 110 VAC configuration- Replace the #18 AWG., white jumper wire.

(Refer also to FIG. 2, 110/220 POWER INTERCONNECT DIAGRAM, #370-10-0400B

THE MATERIAL CONTAINED HEREIN IS CONFIDENTIAL
AND NO PART OF IT CAN BE REPRODUCED WITHOUT THE
EXPRESSED PERMISSION OF CENTURI, INC.

FIGURE 2



AF 17899A

REV. LET.	ECN NO.	REVISION	BY
B		DELETED TV POW 3 ADDED WIRE 33(12") & 77(86").	
A			

TOLERANCES

Unless Otherwise Specified

FRACTIONS \pm 1/32

DECIMALS 2 PL \pm .015

DECIMALS 3 PL \pm .005

HOLDS + .003

- -.001

ANGLES \pm 1/2°

SHT. MET BENDS \pm 2°

centuri^{inc}

HIALEAH, FLORIDA 33014

NAME

110/220V POWER INTERCONNECT DIAG

MATL'S.

HEAT TREAT.

FINISH

DWN. VTP	APP'D <i>[Signature]</i>	DATE 5-8-81	SCALE	PART NO. 370-10-0400	REV. B
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ROUTINE MAINTENANCE & SERVICE

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

The volume control is located on the bottom side of the printed circuit board, farthest from the side of the cabinet, and can be accessed through the rear door.

The video monitor has been properly adjusted before shipping. Occassionally minor adjustments are necessary. Technical information, along with schematics, can be found in this manual. Adjustment controls for the monitor are located on the rear of the monitor.

"DO NOT MAKE ANY ADJUSTMENTS ON THIS MACHINE WHILE THE POWER IS ON!" This machine should only be adjusted by a "qualified" technician.

For Service Information, contact:

CENTURI, INC.

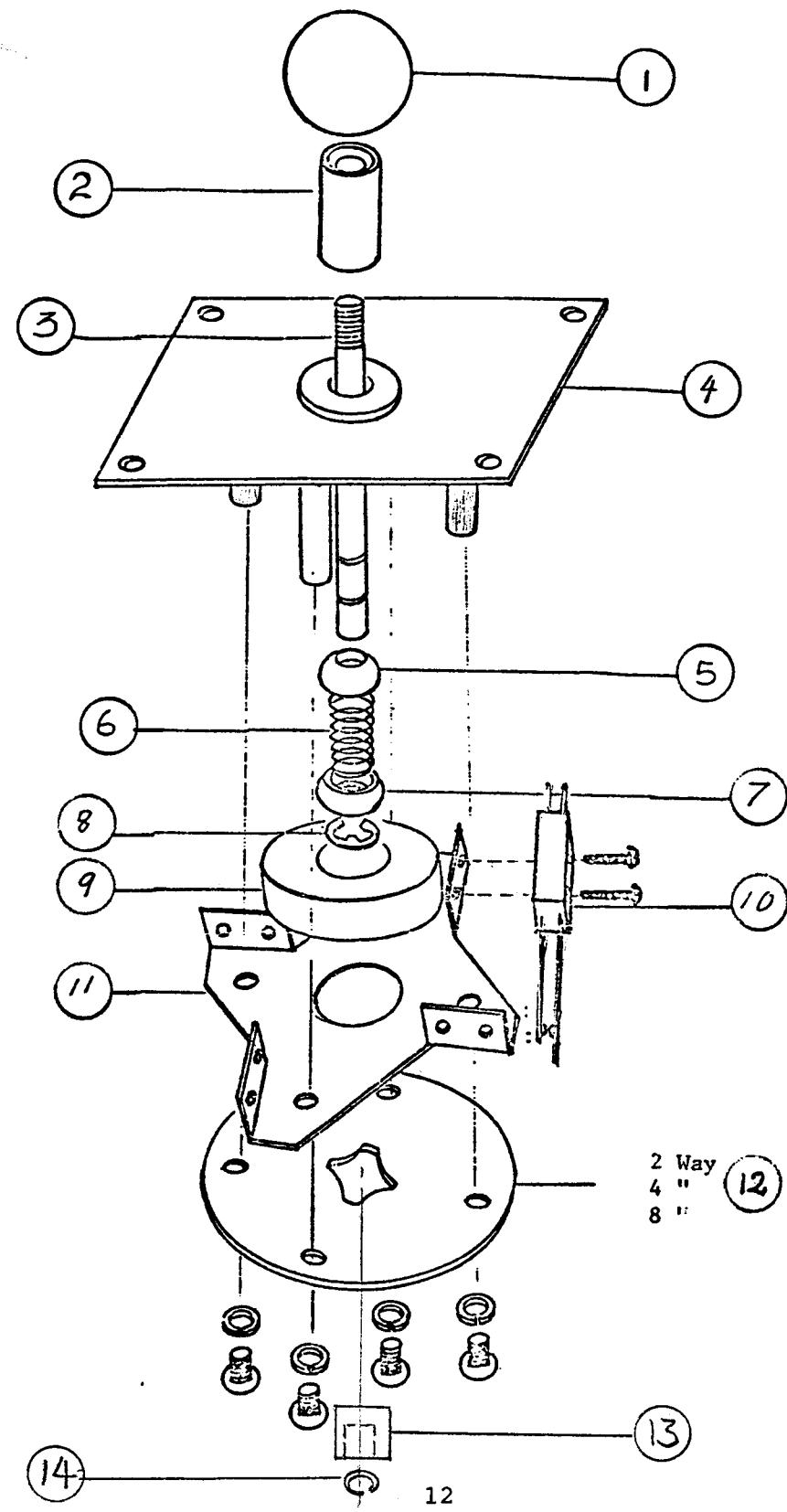
CUSTOMER SERVICE DEPARTMENT
#800-327-7710 (Outside the State of Fla.)
#305-556-5888 (In Florida)

POWER SUPPLY

The Computer Board in this game operates most efficiently and reliably when the power supply is set so the voltage on the Board is 5.0 Volts, ± 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.

(FIG. 3) EXPLODED VIEW OF JOYSTICK ASS'Y

2-4-8 Way JOYSTICK

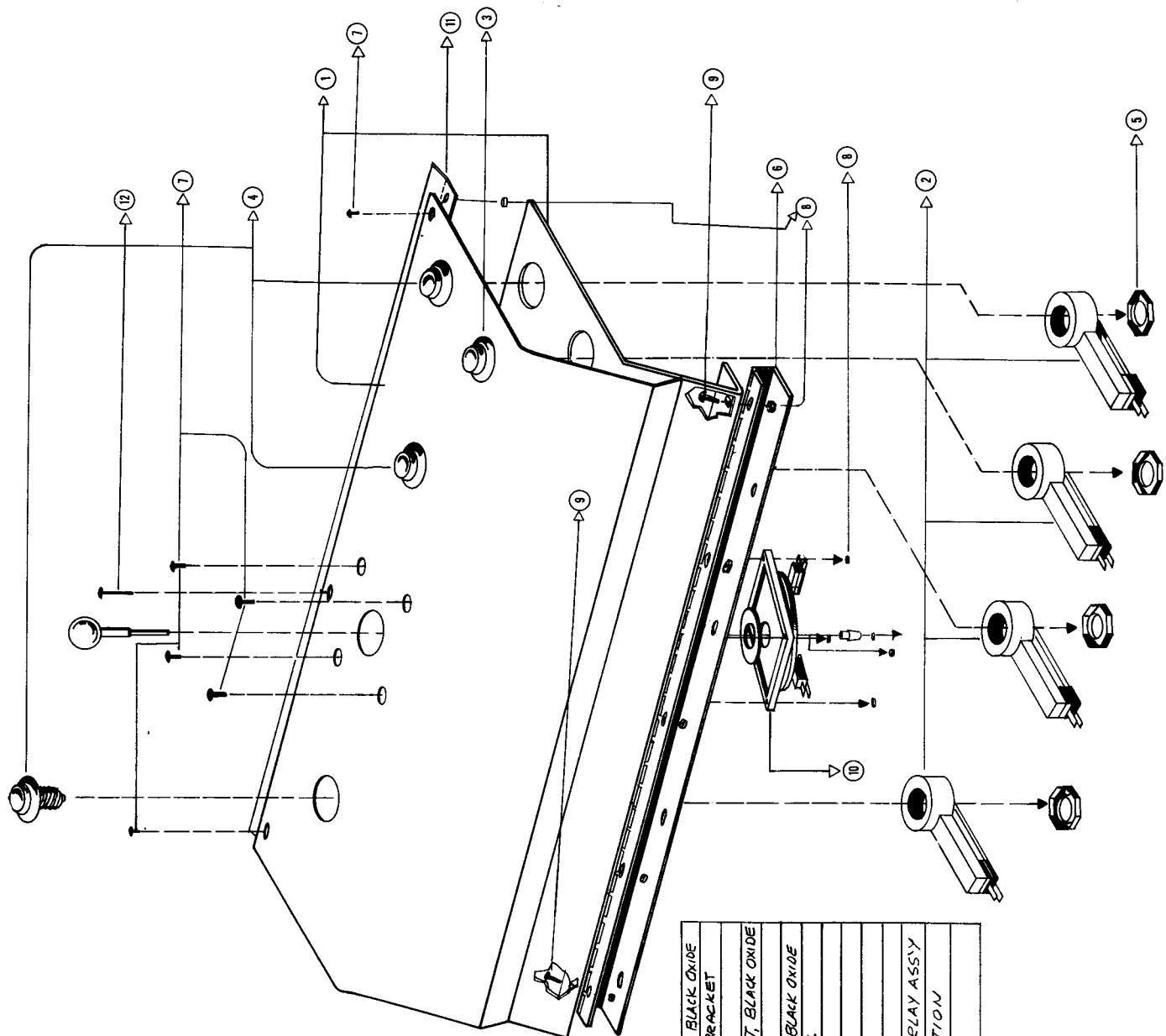


JOYSTICK 8 WAY MONROE LEAF SW. ASS'Y

PARTS LIST

ITEM	CENTURI P/N:	DESCRIPTION:	QNTY.
1.	50130079	1 1/4" O.D. BALL	1
2.	50130080	SPACER	1
3.	50130110	SHAFT	1
4.	50130082	TOP PLATE WELDING ASS'Y	1
5.	50130083	TOP BALL	1
6.	50130084	SPRING	1
7.	50130085	BOTTOM BALL	1
8.	50130086	E-RING	1
9.	50130087	NYLON ACTUATOR	1
10.	50130078	MOLDED BLADE SW., WICO	4
11.	50130091	BOTTOM SUPPORT PLATE	1
12.	50130088	2 WAY FUNCTION PLATE	1
	50130089	4 WAY FUNCTION PLATE	1
	50130090	8 WAY FUNCTION PLATE	1
13.	50130111	ROLLER	1
14.	50130112	C-RING	1

(FIG,4) EXPLODED VIEW OF CONTROL PANEL ASS'Y.



CONTROL PANEL

ITEM	QTY	PART No	DESCRIPTION
BILL OF MATERIALS			
12	1	10111014	#10-24x1/4 CARRIAGE BOLT, BLACK OXIDE
11	1	375-03-0400	DECK & GLASS ANGLE BRACKET
10	1	50130109	JOYSTICK & POSITION
9	5	10111006	#10-24x1/4 CARRIAGE BOLT, BLACK OXIDE
8	12	10150007	#10-24 KEP NUT
7	6	10111004	#10-24x1/2 CARRIAGE BOLT, BLACK OXIDE
6	1	361-0-06000	HINGE, CONTROL DECK
5	4	50130050	DAL NUT
4	3	50130049	RED BUTTON ASS'Y
3	1	50130048	WHITE BUTTON ASS'Y
2	4	50130047	SWITCH & BRACKET
1	1	377-01-0800	CONTROL PANEL & OVERLAY ASS'Y

2800-0 FRONT PLATE EXPLODED VIEW

25¢ COIN

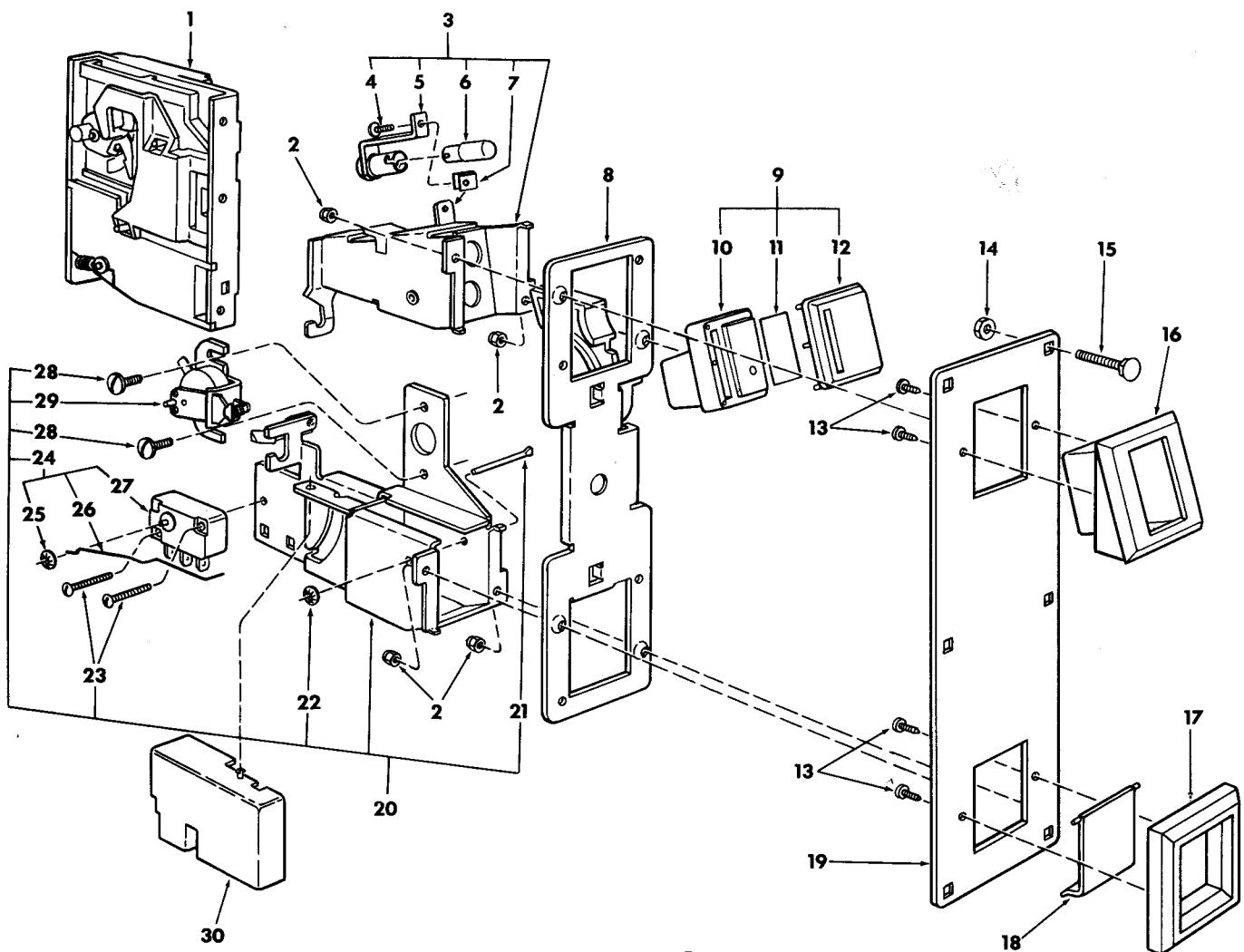


FIGURE 5

Index No.	Part No.	Description
1	5301-10	25¢ Coin Acceptor
2	400-4	#4-40 Self Locking Nut
3	404351	Coin Inlet Chute Assembly
4	110-4-6	4 x 3/8 Screw
5	904717	Lamp Socket
6	904716	#47 Lamp (6.3 Volt)
7	904712	Fastener
8	404464	Inner Panel/Lever Assembly
9	404348	Coin Return Button Assembly
10	904591	Coin Return Button
11	904703	25¢ Price Decal
12	904589-2	Reject Cover Button (25¢)
13	345-4-5	#4 x 5/16 Pan Head Screw
14	406-10	#10-24 Hex Nut (Mounting Hardware)
15	905022	#10-24 x 1-1/8 Carriage Bolt (Mounting Hardware)

Index No.	Part No.	Description
16	904588	Coin Inlet Housing
17	904590	Coin Return Cover
18	904599	Coin Return Door
19	404463	Frontplate Assembly, 3-1/8" x 9-1/4"
20	404350	Coin Return Chute Assembly
21	905115	Bar
22	904936	Keeper
23	100-4-12	4-40 x 3/4 Screw
24	404353	Switch & Wire Assembly
25	900651	Retainer
26	904710-1	Switch Wire-Silver
27	904845	Switch
28	100-6-3	6-32 x 3/16 Screw
29	404354	12 Volt Crem Assembly
30	904762	Switch Cover

2800 SERIES COIN DOOR EXPLODED VIEW

25¢ U.S. COIN

(FIGURE 6)

PARTS LIST

<u>NO.</u>	<u>CENTURI P/N:</u>	<u>MANUFACTURING P/N:</u>	<u>DESCRIPTION:</u>
1.	50270160	404429	INNER PANEL w/LEVERS SUBASS'Y.
3.	50130062	904782	TOGGLE SWITCH
4.	50270161	904706	TEST SWITCH DECAL
5.	364-62-1000A	-----	CUSTOM HARNESS ASS'Y.
6.	50270162	904822	INSULATION
7.	50270140	404352	COIN COUNTER ASS'Y.
9.	50270163	904722	WIRE KEY HOLDER
10.	50270164	904762	SWITCH COVER
12.	50270165	404354	C.R.E.M. COIL ASS'Y. (12 VOLT D.C.)
17.	50270142	904710-1	SILVER SWITCH WIRE- FOR 25¢ U.S. COIN
18.	50130061	904845	SWITCH
19.	50270143	904701	COIN CHUTE
20.	50270166	904598	COIN RETURN BOX
21.	50270167	404428	SWITCH & C.R.E.M. COIL BRACKET ASS'Y.
22.	50270144	5301-10	25¢ ACCEPTOR
23.	50270168	905115	BAR
25.	50270169	904717	MINIATURE BAYONET-BASE LAMP SOCKET
26.	50270170	904716	#47 LAMP (6.3 VOLTS)
27.	50270171	404418	COIN INLET CHUTE-SUBASS'Y.
31.	50130063	904707	SLAM SWITCH ASSEMBLY

2800 SERIES COIN DOOR EXPLODED VIEW
25¢ U.S. COIN

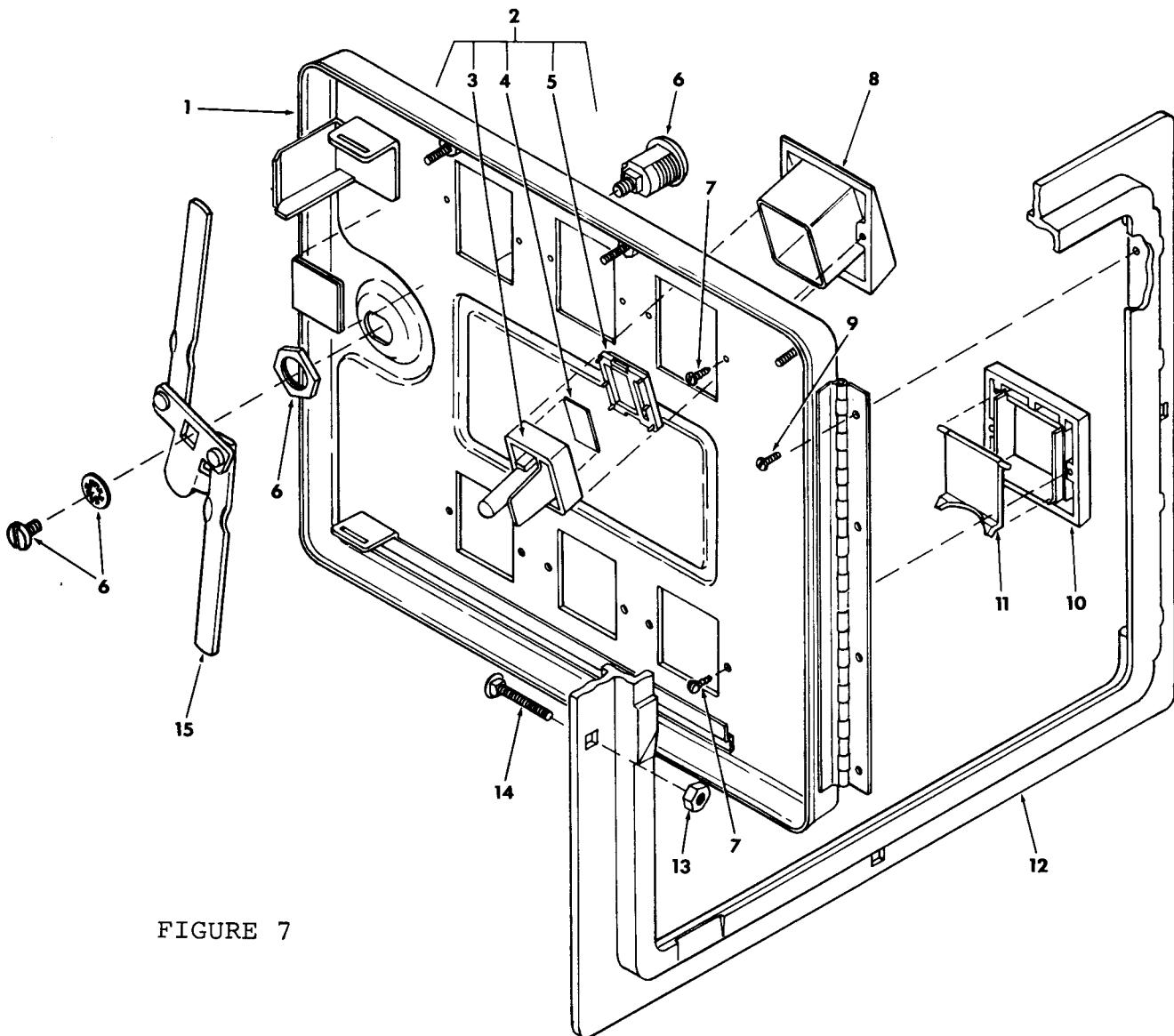


FIGURE 7

Index No.	Part No.	Description	Index No.	Part No.	Description
1	404341	Coin Door Only (2 Coin)	7	345-4-5	Screw
	404341-1	Coin Door Only (3 Coin)	8	904588	Coin Button Housing
2	404348-1	Coin Return Button Assembly for U.S. 25¢ Coin	9	325-4-4	Screw
3	904591	Coin Return Button	10	904590	Coin Return Bezel
4	904703	U.S. 25¢ Price Decal	11	904599	Coin Return Cover
5	904589-2	Coin Return Button Cover for U.S. 25¢ Coin	12	904581	Coin Door Frame, 11-5/8" x 13-3/8" Mounts in a 10-3/8" x 12-3/16" Opening
6	904707-1	Lock Assembly	13	406-416	Hex Nut
			14	904734	Carriage Bolt
			15	404357	Locking Arm Assembly

2800 SERIES COIN DOOR EXPLODED VIEW

25¢ U.S. COIN

(FIGURE 7)

PARTS LIST

<u>NO.</u>	<u>CENTURI P/N:</u>	<u>MANUFACTURING P/N:</u>	<u>DESCRIPTION:</u>
1.	50270152	404341	COIN DOOR ONLY(2 COIN)
2.	50270158	404348-1	COIN DOOR BUTTON ASS'Y. FOR U.S. 25¢ COIN
3.	50270145	904591	COIN RETURN BUTTON
4.	50270146	904703	U.S. 25¢ PRICE DECAL
5.	50270147	904589-2	COIN RETURN BUTTON COVER
6.	50270148	904707-1	LOCK ASSEMBLY w/KEYS
8.	50270149	904588	COIN BUTTON HOUSING (INLET HOUSING)
10.	50270157	904590	COIN RETURN BEZEL
11.	50270150	904599	COIN RETURN COVER
12.	50270151	904581	COIN DOOR FRAME (11 5/8"x13 3/8")
15.	50270159	404357	LOCKING ARM ASSEMBLY

P.C.B. ASS'Y A 102-401PARTS LIST

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION:</u>	<u>USAGE:</u>
1.	50010314	2732, EPROM	3
2.	50070013	18.432 MHz, CRYSTAL	1
3.	50010329	2125AL-2, STATIC RAM	7
4.	50010372 LS	74LS126, I.C.	1
5.	50010096 LS	74LS08, I.C.	4
6.	50010019 LS	74LS74, I.C.	8
7.	50010002 LS	74LS00, I.C.	3
8.	50010252 LS	74LS374, I.C.	1
9.	50010045 LS	74LS157, I.C.	13
10.	50010022 LS	74LS86, I.C.	10
11.	50010005 LS	74LS04, I.C.	4
12.	50010004 LS	74LS02, I.C.	2
13.	50010161 LS	74LS11, I.C.	1
14.	50010035 LS	74LS161, I.C.	6
15.	50010310	2114-200 NS	4
16.	50010105 LS	74LS32 I.C.	1
17.	50010026 LS	74LS107 I.C.	1
18.	50010232	74S288, I.C.	1
19.	50010030 LS	74LS174, I.C.	5
20.	50010195 LS	74LS367	2
21.	50010249 LS	74LS245, I.C.	2
22.	50010192 LS	74LS139, I.C.	3
23.	50010231	74S287, I.C.	2
24.	50010245 LS	74LS21, I.C.	1
25.	50010010 LS	74LS27, I.C.	2
26.	50010261 LS	74LS273, I.C.	4
27.	50010139 LS	74LS175, I.C.	3
28.	50010007 LS	74LS10, I.C.	1
29.	50010009	7425, I.C.	2
30.	50010262 LS	74LS283, I.C.	2
31.	50010369 LS	74LS163, I.C.	2
32.	50010222 LS	74LS194, I.C.	6
33.	50360006	1K OHM, 9 PIN SIP RESISTOR	9

P.C.B. ASS'Y A 102-401PARTS LIST

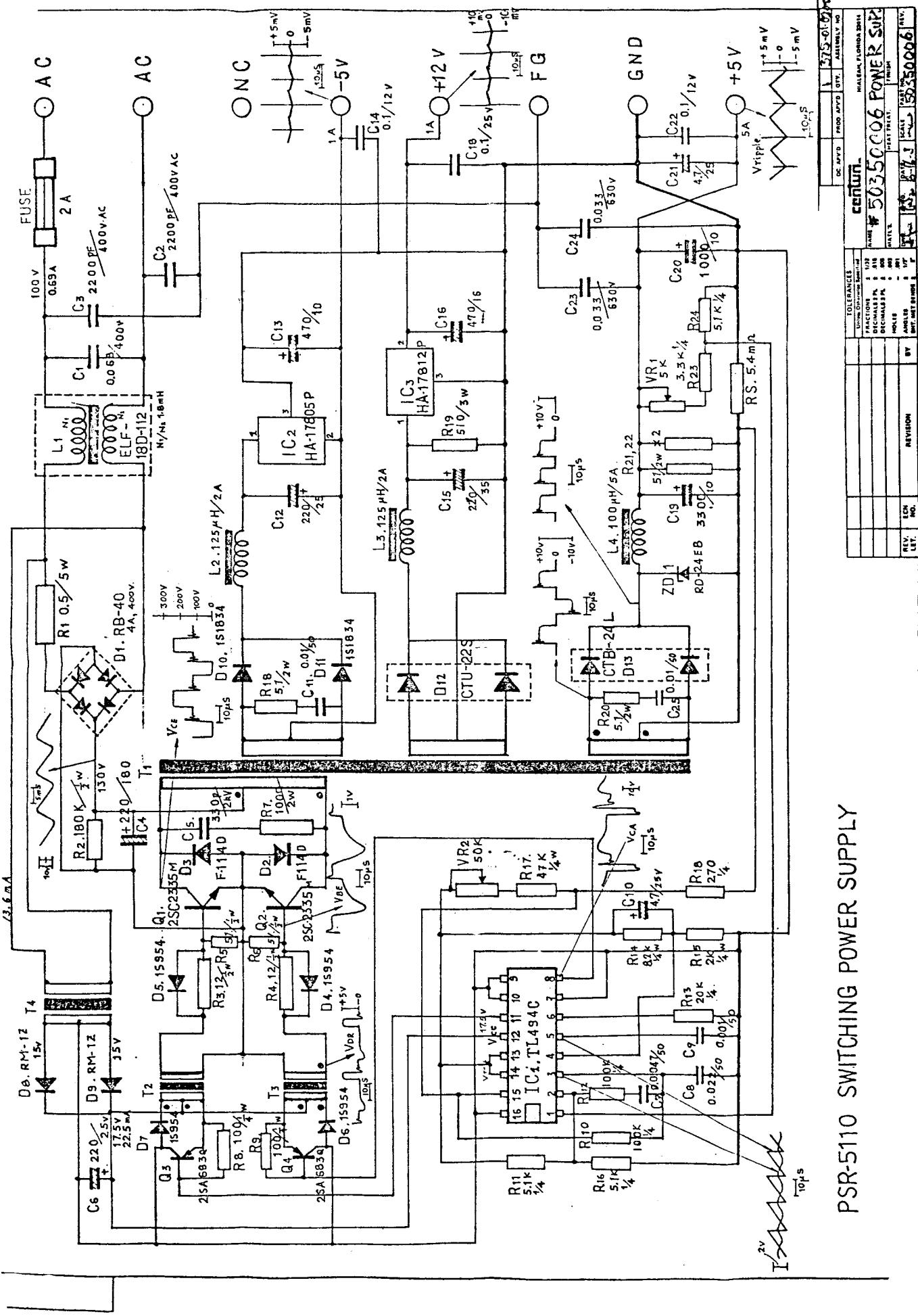
<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION:</u>	<u>USAGE:</u>
34.	50360017	5.6K OHM, 9 PIN RESISTOR	1
35.	50060226	2.2 MFD, 50V, ELECTROLYTIC, RADIAL CAP.	1
36.	50040010	0.1 MFD, 16V, DISC CERAMIC CAPACITOR	39
37.	50040210	200 PF, 16V, DISC CERAMIC CAPACITOR	1
38.	50030095	330 OHM, 1/4 WATT, 5% RESISTOR	2
39.	50030051	1K OHM, 1/4 WATT, 5% RESISTOR	2
40.	50030010	470 OHM, 1/4 WATT, 5% RESISTOR	2
41.	50030085	390 OHM, 1/4 WATT, 5% RESISTOR	1
42.	50030038	100 OHM, 1/4 WATT, 5% RESISTOR	1
43.	50150061	24 PIN I.C. SOCKET	3
44.	50150256	50 PIN RIGHT ANGLE PCB HEADER W/EJECTOR	2
45.	50150346	6 PIN RIGHT ANGLE WAFER	1
46.	50210252	A 102-401 P.C.B. (BARE)	1

P.C.B. ASS'Y B 102-402PARTS LIST

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION:</u>	<u>USAGE:</u>
1.	50010187	Z-80 CPU	1
2.	50010177	AY-3-8910 SOUND GENERATOR	2
3.	50010171	2716, EPROM	3
4.	50010314	2732, EPROM	9
5.	50010341	Z80-A CPU	1
6.	50010370	2K x 8, RAM M58725P (MITSUBISHI)	1
7.	50010340	AUDIO AMPLIFIER M51516L (MITSUBISHI)	1
8.	385-08-0100	HEAT SINK	1
9.	50120016	1K OHM, TRIMMER POT	1
10.	50070024	4 MHz, CRYSTAL	1
11.	50010264 LS	74LS368, I.C.	6
12.	50010004 LS	74LS02, I.C.	2
13.	50010222 LS	74LS194, I.C.	6
14.	50010249 LS	74LS245, I.C.	3
15.	50010252 LS	74LS374, I.C.	1
16.	50010310	2114-200 NS	4
17.	50010248 LS	74LS138, I.C.	5
18.	50010096 LS	74LS08, I.C.	5
19.	50010105 LS	74LS32, I.C.	2
20.	50010005 LS	74LS04, I.C.	1
21.	50010019 LS	74LS74, I.C.	2
22.	50010024 LS	74LS93, I.C.	1
23.	50010002 LS	74LS00, I.C.	1
24.	50010045 LS	74LS157, I.C.	4
25.	50010195 LS	74LS367, I.C.	3
26.	50010224 LS	74LS259, I.C.	1
27.	50010192 LS	74LS139, I.C.	1
28.	50010138	4020, I.C.	1
29.	50010373	40H00 4P	1
30.	50060107	1000 MFD, 16V, ELECTROLYTIC, AXIAL CAP.	2
31.	50060227	470 MFD, 16V, ELECTROLYTIC, RADIAL CAP.	1
32.	50060177	100 MFD, 16V, ELECTROLYTIC, RADIAL CAP.	1
33.	50060139	47 MFD, 16V, ELECTROLYTIC, RADIAL CAP.	1

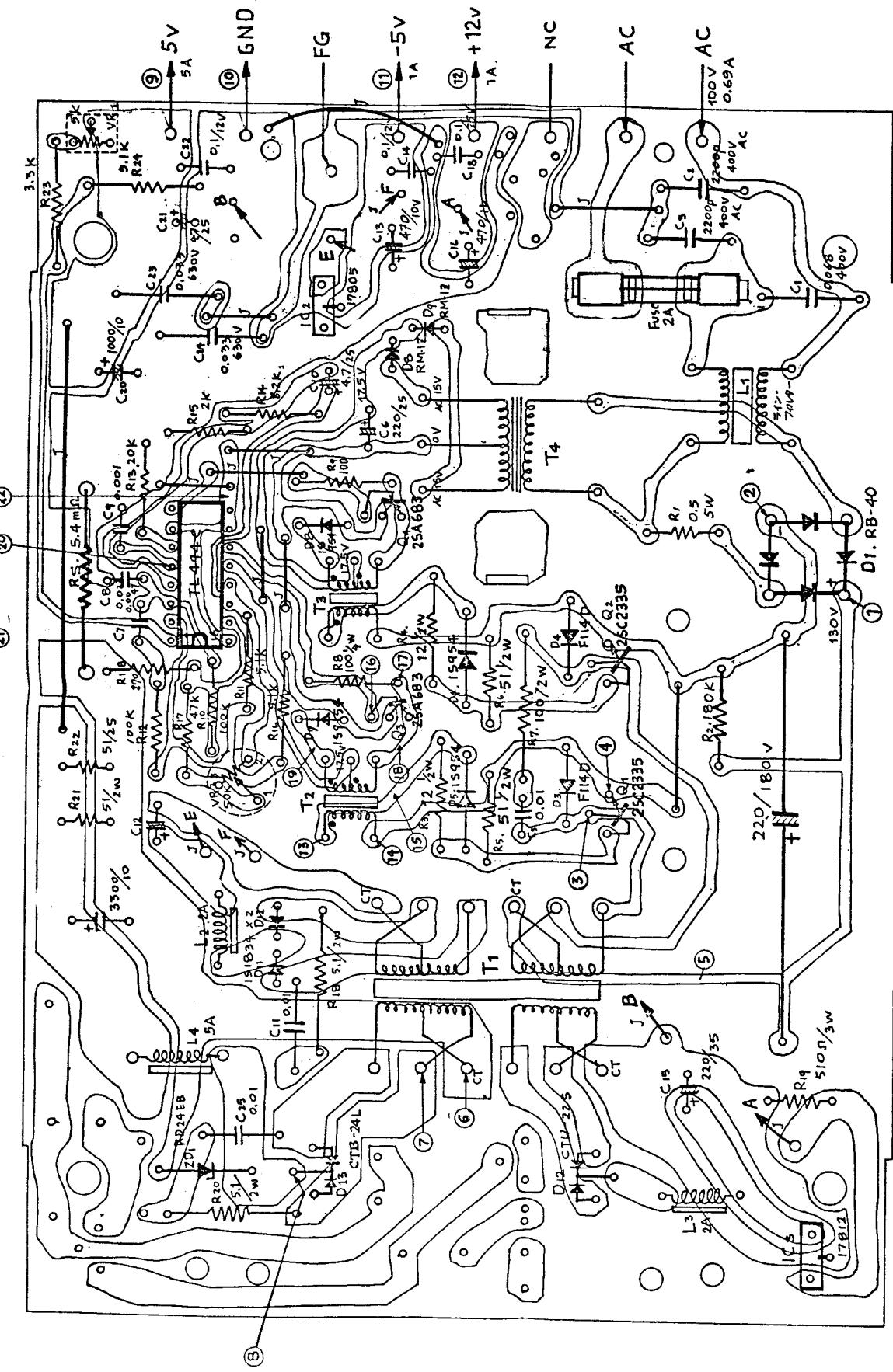
P.C.B. ASS'Y B 102-402PARTS LIST

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION:</u>	<u>USAGE:</u>
34.	50060120	10 MFD, 16V, ELECTROLYTIC, RADIAL CAP.	1
35.	50060228	4.7 MFD, 25V, ELECTROLYTIC, RADIAL CAP.	1
36.	50060226	2.2 MFD, 50V, ELECTROLYTIC, RADIAL CAP.	6
37.	50130034	8 POSITION DIP SWITCH	1
38.	50130075	4 POSITION DIP SWITCH	1
39.	50360006	1K OHM, 9 PIN SIP RESISTOR	3
40.	50040010	0.1 MFD, 16V, DISC CERAMIC CAP.	62
41.	50040059	1000 PF, 25V, DISC CERAMIC CAP.	6
42.	50040211	0.15 MFD, 50V, MYLAR CAPACITOR	1
43.	50040182	0.01 MFD, 50V, MYLAR CAPACITOR	1
44.	50100007	DIODE	2
45.	50100008	LED (MINIATURE)	2
46.	50030125	220 OHM, 1/4 WATT, 5% RESISTOR	22
47.	50030006	4.7K OHM, 1/4 WATT, 5% RESISTOR	7
48.	50030051	1K OHM, 1/4 WATT, 5% RESISTOR	12
49.	50030151	22K OHM, 1/4 WATT, 5% RESISTOR	1
50.	50030063	10K OHM, 1/4 WATT, 5% RESISTOR	1
51.	50030092	1MEG OHM, 1/4 WATT, 5% RESISTOR	1
52.	50150256	50 PIN RIGHT ANGLE PCB HEADER W/EJECTOR	2
53.	50210252	B 102-402 P.C.B. (BARE)	1
54.	50150061	24 PIN I.C. SOCKET	9
55.	10010087	5-40x1/2 PA/PH/MS	4
56.	10150002	5-40 KEP NUT	4
57.	50100014	DIODE	1



PSR-5110 SWITCHING POWER SUPPLY

PAGE 1 OF 2



CENTURI	#50350006 Power
SUPPLY	PAGE 2 of 2

PSR-5110 SWITCHING POWER SUPPLY
PARTS LIST

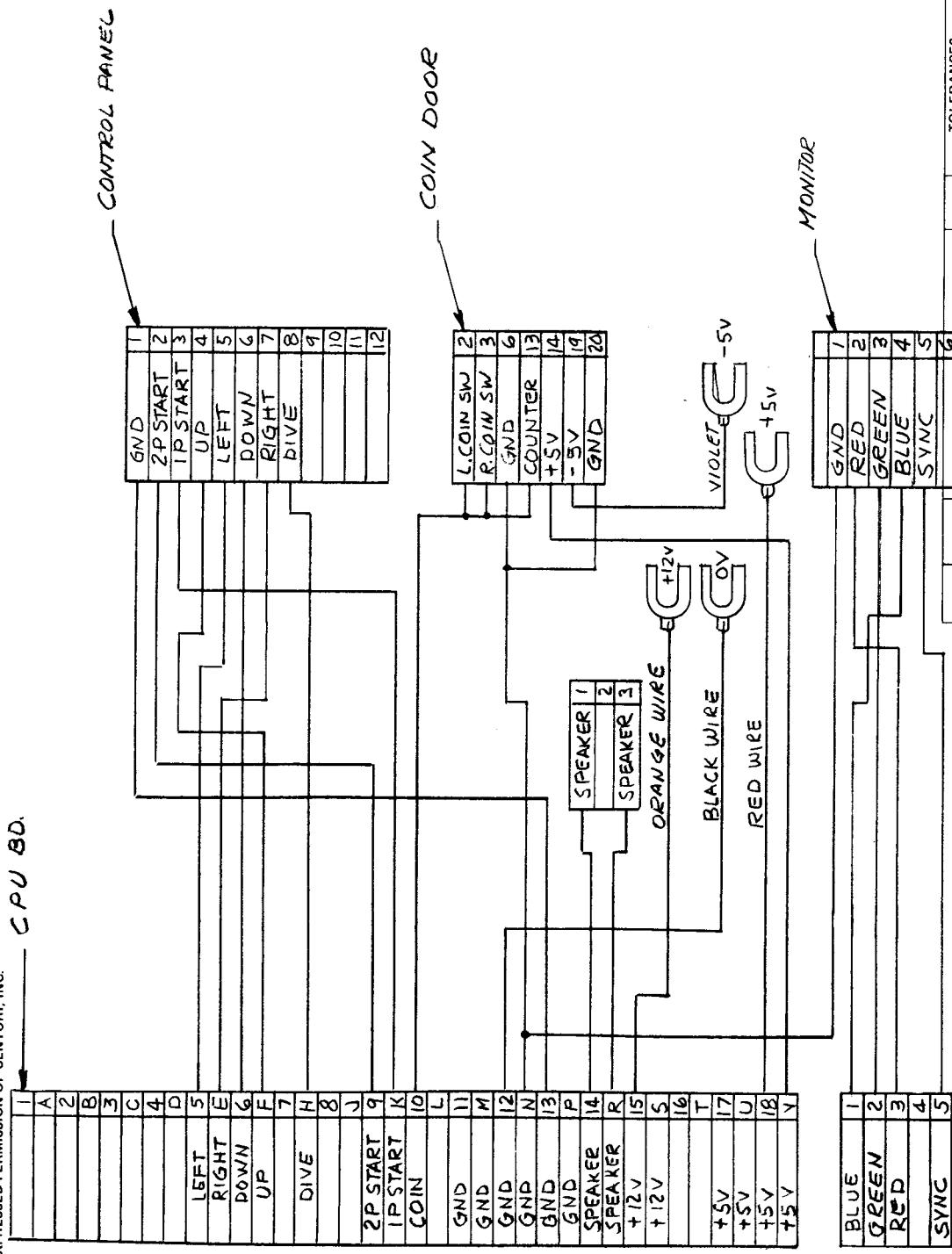
<u>SYMBOL:</u>	<u>DESCRIPTION:</u>	<u>QNTY.</u>
D1	STACK DIODE	1
D8, D9	RECTIFIER	2
D2, D3	HIGH SPEED DIODE	2
D4, D5, D6, D7	HIGH SPEED DIODE	4
D13	HIGH SPEED DIODE	1
D12	HIGH SPEED DIODE	1
D10, D11	HIGH SPEED DIODE	1
ZD1	ZENER DIODE	2
Q1, Q2	TRANSISTOR	2
IC1	I.C.	1
IC2	I.C.	1
IC3	I.C.	1
T1	PULSE POWER TRANSFORMER	1
T2, T3	PULSE DRIVE TRANSFORMER	2
T4	BIAS TRANSFORMER	1
L2, L3	R.F. CHOK TRANSFORMER	2
L4	R.F. CHOK TRANSFORMER	1
L1	A.C. LINE FILTER	1
C2, C3	LINE BY-PASS CAPACITOR	3
C1, C23, C24	METALIZED POLYESTER CAPACITOR	3
C9	MYLAR CAPACITOR	1
C7	MYLAR CAPACITOR	1
C11, C25	MYLAR CAPACITOR	2
C8	MYLAR CAPACITOR	1
C5	CERAMIC CAPACITOR	1
C14, C18, C24	CERAMIC CAPACITOR	3
C10, C21	ELECTROLYTIC CAPACITOR	2
C13, C16	ELECTROLYTIC CAPACITOR	2
C20	ELECTROLYTIC CAPACITOR	1
C19	ELECTROLYTIC CAPACITOR	1
C12, C15	ELECTROLYTIC CAPACITOR	2
C6	ELECTROLYTIC CAPACITOR	1
C4	ELECTROLYTIC CAPACITOR	1
R1	CEMENT FUSE RESISTOR	1
R21, R22	METAL RESISTOR	2
R19	METAL RESISTOR	1
R7	METAL RESISTOR	1
R18, R20	METAL RESISTOR	2
R2, R3, R4, R5, R6,	METAL RESISTOR	18
R8, R9, R10, R11,		
R12, R13, R14, R15,		
R16, R17, R18, R23,		
R24		
RS	MANGANESE WIRE, 5.4M, OHM	1
VR1	SEMI-FIXED RESISTOR	1
VR2	SEMI FIXED RESISTOR	1
F1	FUSE	1
F2	FUSE HOLDER	1
10m/m	NICKEL WIRE, 0.7φ	1
150m/m	TUBE, 1.0φ	1
100m/m	TUBE, 1.5φ	1
J11	LEAD WIRE	1

PSR-5110 SWITCHING POWER SUPPLY
PARTS LIST

<u>SYMBOL:</u>	<u>DESCRIPTION:</u>	<u>QNTY.</u>
J12	LEAD WIRE	1
J13	LEAD WIRE	1
J14	LEAD WIRE	1
	BIND TUBE	3
SM221	MAIN P.C. BOARD	1
	TERMINAL	1
	RATING LABEL	1
	TERMINAL LABEL	1
	BIND SCREW	5
	TRUSS SCREW	8
	TAPPING SCREW	13
	HEX NUT	7
	FLAT WASHER	7
	RECTANGULAR WASHER	6
	SPRING WASHER	7
	MICA WASHER	12
	INSULATION BUSHING	6
	TOP CASE/BOTTOM CASE	2
	FRONT PANEL	1
	REAR PANEL	1
	TERMINAL SUPPORT	1
	HEAT SINK A	1
	HEAT SINK B	1
	HEAT SINK C	1
	HEAT SINK D	1
	METAL HOLDER	4

THE MATERIAL CONTAINED HEREIN IS CONFIDENTIAL
AND NO PART OF IT CAN BE REPRODUCED WITHOUT THE
EXPRESSED PERMISSION OF CENTURI, INC.

CPU BD.



centuri inc			
HIALEAH, FLORIDA 33014			
C. P. U. HARNESS			
NAME			
HEAT TREAT.			FINISH
MATERIALS			
HOLDS			
ANGLES			
SHT. MET BENDS			
REV. LET.	ECN NO.	REVISION	BY
REV.			
DATE			
SCALE			
PART NO.			
REV.			

TOLERANCES
Unless Otherwise Specified

FRACTIONS	± 1/32
DECIMALS 2 PL	± .015
DECIMALS 3 PL	± .005
HOLDS	+ .003
ANGLES	- .001
SHT. MET BENDS	± .2

NOTE: NUMBERS (COMPONENTS SIDE)

THE MATERIAL CONTAINED HEREIN IS CONFIDENTIAL
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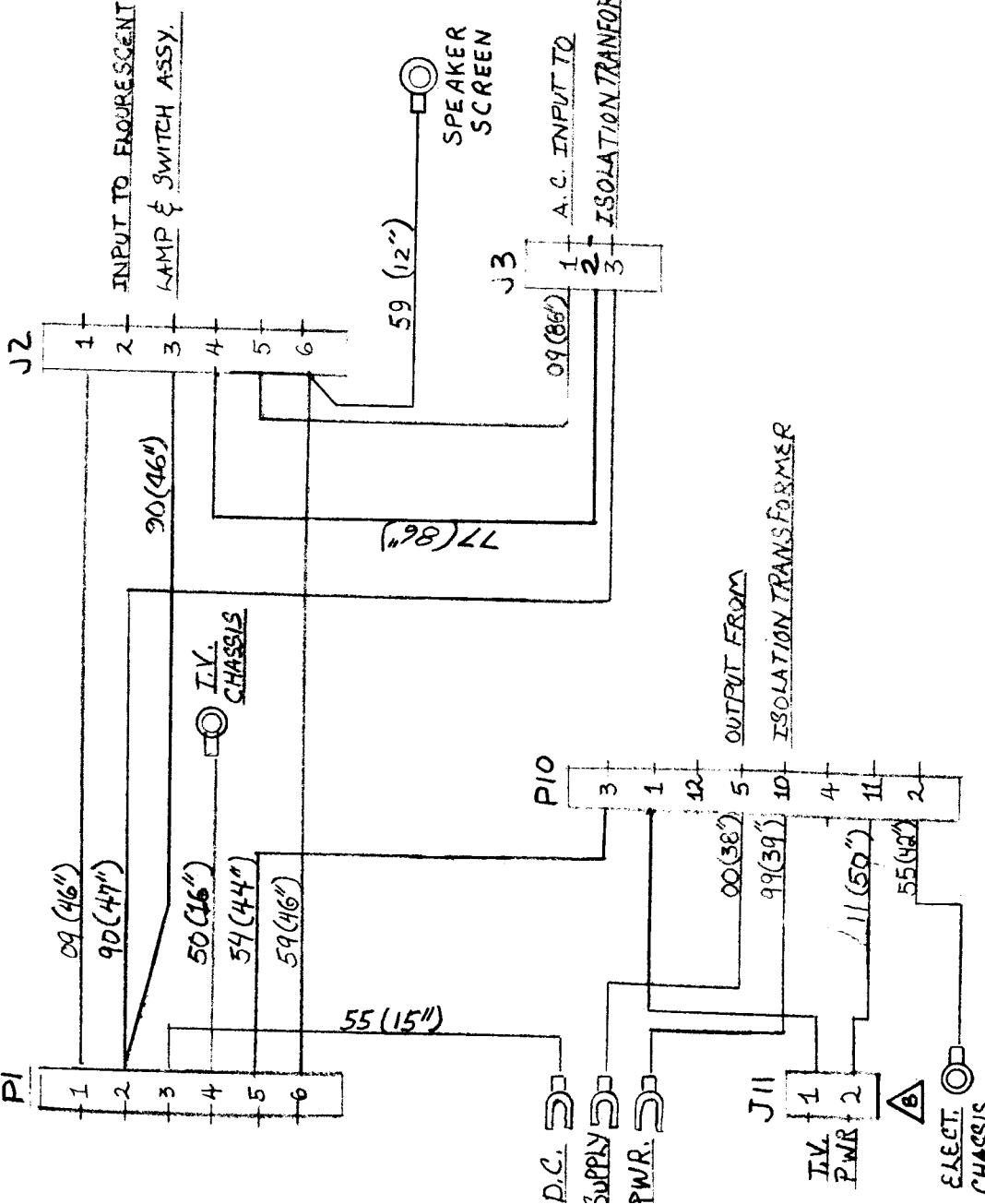
Pin	Color	Length
1	GND	1
2	PLAY START	2
3	PLAY START	3
4	UP	4
5	LEFT	5
6	DOWN	6
7	RIGHT	7
8	CUBE SHOOT	8
9	23 VIOLET	23 BLK
10	24 YELLOW	3 BLK
11	27 ORANGE	4 BLK
12	31 GREEN	4 BLK
13	34 BROWN	4 BLK
14	14 VIOLET	3 BLK
15	38 GREY	5 BLK
16	40 WHITE	4 BLK

BIBLE OF MATERIALS

BILL OF MATERIALS		
ITEM	QTY	PART # & DESCRIPTION
1	1	50150261 12 PIN PLUG, MOLEX # 03-09-2122
2	8	50150222 PIN TERMINAL, MOLEX # 02-09-2116
3	16	50150029 3/16" PUSH-ON TERMINAL.
4	10	50270003 TY-WRAP 4"
5	50	50179906 INSULATED WIRE, BLACK, 22 AWG
6	34	50171106 "
7	27	50173306 "
8	24	50174406 "
9	31	50175506 "
10	38	50178806 "
11	40	50170006 "
12	37	50177706 "

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A.I.C. LINE CONN.



AC. APVD	PROD. APVD	QTY.	ASSEMBLY NO
centur[™]			
HIALEAH, FLORIDA 33014			
Cabinet Power Harness PART NO. <u>370-12-0200</u> REV. <u>B</u>			
NAME ATL'S.		HEAT TREAT.	FINISH
APVD.	DATE	SCALE	PART NO.
<u>3</u>	<u>5-6-81</u>	<u>2</u>	<u>370-12-0200</u>
IN.	APVD.	IN.	IN.
<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>

		TOLERANCES		Unless Otherwise Specified	
		FRACTIONS	DECIMALS 2 PL	DECIMALS 3 PL	1/
B	ADDED STEP #14: CHASIO QTY 1/2-11 7&9 " JI, J3, J5 P10 DELETED TY AND .3&20 ADDED GREEN ANNEAL WIRE -1/2" AND 1# RING LUG #50150105	JTS	BY	ANGLES SHT. MET BENDS	.000
A	370-24	REV. ECN NO.	REVISION		

HIALEAH, FLORIDA 33014

HIALEAH, FLORIDA 33014

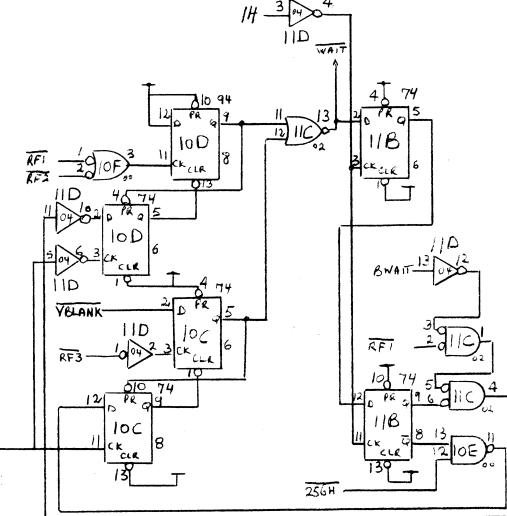
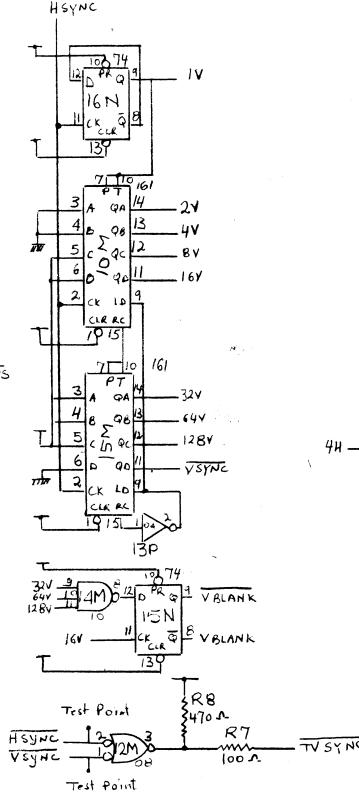
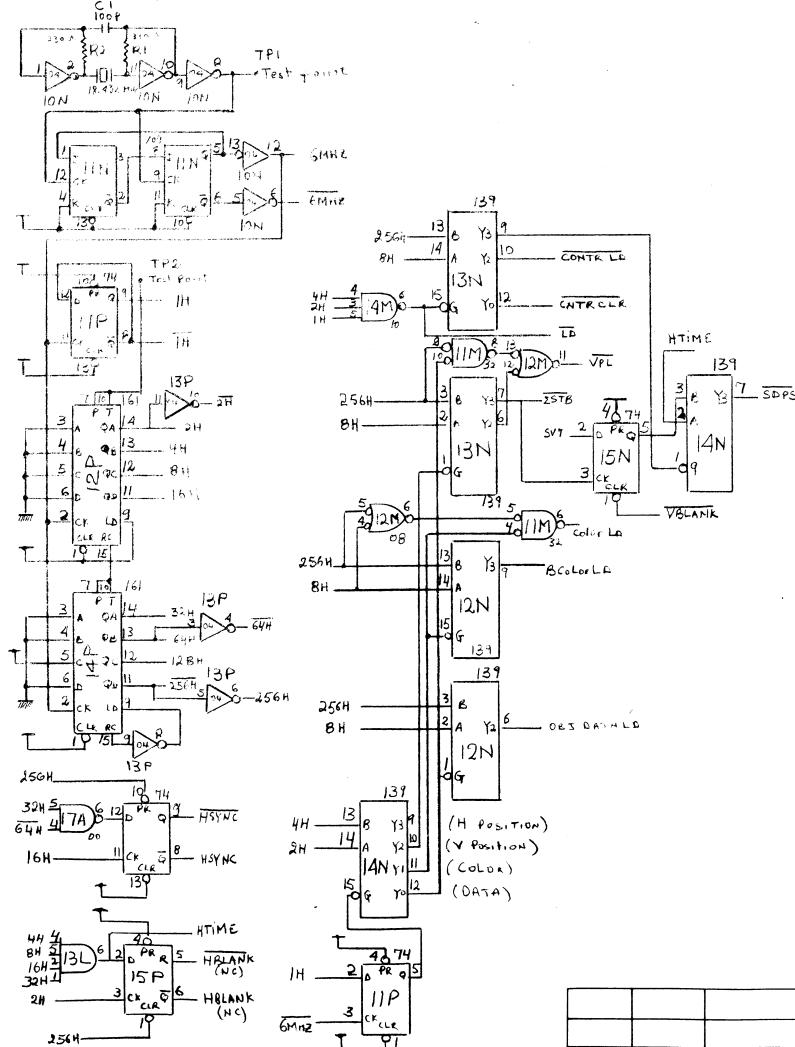
Power Harness

HEAT TREAT. FINISH

REV.
B
70-12-0200

	QTY	REF ID	DESCRIPTION
60	1	385-06-1100	ROUT DECAL
62	1	385-16-0000	SERAKES DECAL
63	1	385-36-0000	LEFT INSIDE DECAL
67	1	385-36-1900	LEFT INSIDE DECAL
66	1	385-36-1700	RIGHT INSIDE DECAL
65	1	385-26-0600	LEFT BOTTOM DECAL
64	1	385-26-0200	RIGHT BOTTOM DECAL
a3	4	50270-0200	QUALITY CONTROL CARD
b2	1	50180-031	*BX/MFH/PHNDS ZINC
b4	12	50270-0109	FLUORESCENT BULB SWATT
b6	1	50270-0007	DOUBLE CLAMP TAPE
b7	1	50270-0095	GROUNDED WARNING LABEL
b8	1	50270-055	CENTER SERIAL NUMBER TAG
b9	1	50270-0184	FUSE INSIDE USE ONLY LABEL
c6	1	50270-055	DISCONNECT POWER CORD... IN SEC
c5	1	50270-0187	CENTER CABINET CORD
c4	1	382-01-0700	110-VOLT 220VOLT VOLTAGE ASSY
c3	1	36-03-0100	GLASS HOLDING BRKT
c2	1	385-01-0200	MATERIALS SCHEMATIC ASSY
c5	1	385-06-0500	F.C. C. LABEL
c9	1	10270-0108	STARBUCKS COFFEE
c9	25	50270-002	WIRE TIES 5"
c9	6	50270-0121	VEICLO LOAD ADHESIVE FASTENER
c6	1	10270-0201	*B-32-38 THINWALL SCREW
c5	25	100-0003	#8-32x38 PAINTED PHATIM'S
c4	4	1012-0003	1/4-20x12 MACHINE BOLT HEX HEAD
c3	4	1017-0002	#10-24 WILK NOT
c2	6	10200-0005	#10-32 ITT LOCK WASHER
c1	14	019-0009	#10-32 ITT WASHER
c1	11	1015-0007	10-24 KEP NUT
c1	4	1010-0151	10-24-34 PAIRINGS
c3	2	1010-0101	10-24-34 PAIRINGS
c5	2	1011-010	10-24X1 CAPSULE BOLT BLACK OXIDE
c6	8	1011-008	10-24X1 CAPSULE BOLT BLACK OXIDE
c5	1	1011-010	10-20X36 CARBONATE BOLT BLACK OXIDE
c6	8	1019-0014	10-20X36 CARBONATE BOLT BLACK OXIDE
c3	3	1015-0006	10-20 FLUT WASHER
c3	2	1015-0007	10-20 KEP NUT
c3	2	303-02-0100	MOUNTING BRKT
c9	2	264-02-0400	CPL SHEILD LOCATOR BRKT
c9	2	264-02-0300	CPL SHEILD LOCATOR BRKT
c7	1	235-5-28A	VINYL TRIM
c7	2	361-10-0200	VINYL TRIM TAPE
c6	1	364-12-0500	EFFECTHOME WIRELESS BARRIER MOUNTING HARDWARE
c5	1	365-06-0200	LEFT SIDE DECAL TOO
c4	1	365-06-0200	LEFT SIDE DECAL TOO
c3	1	365-06-0200	H.C. ASSY MOUNTING
c5	1	12-000	DOOR HINGE
c1	1	14-000	KLIP COAT ASSY
c20	1	16-000	CONTACT POWER WIRE ASSY
c19	1	381-06-0500	MANUFACTURER STICKER
c18	1	361-12-0204	REFLECTIVE VINYL TAPE
c17	1	361-06-0204	REFLECTIVE VINYL TAPE
c16	1	361-06-0200	USING GLASS
c15	1	385-06-0200	MANUAL ARM (SWING GATE)
c14	1	385-06-0200	MANUAL ARM (SWING GATE)
c13	1	385-06-0200	MANUAL ARM (SWING GATE)
c12	1	385-06-0200	MANUAL ARM (SWING GATE)
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c2	1	385-06-0200	GLASS ARM (SWING GATE)
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c3	1	385-06-0200	GLASS ARM (SWING GATE)
c2	1	385-06-0200	

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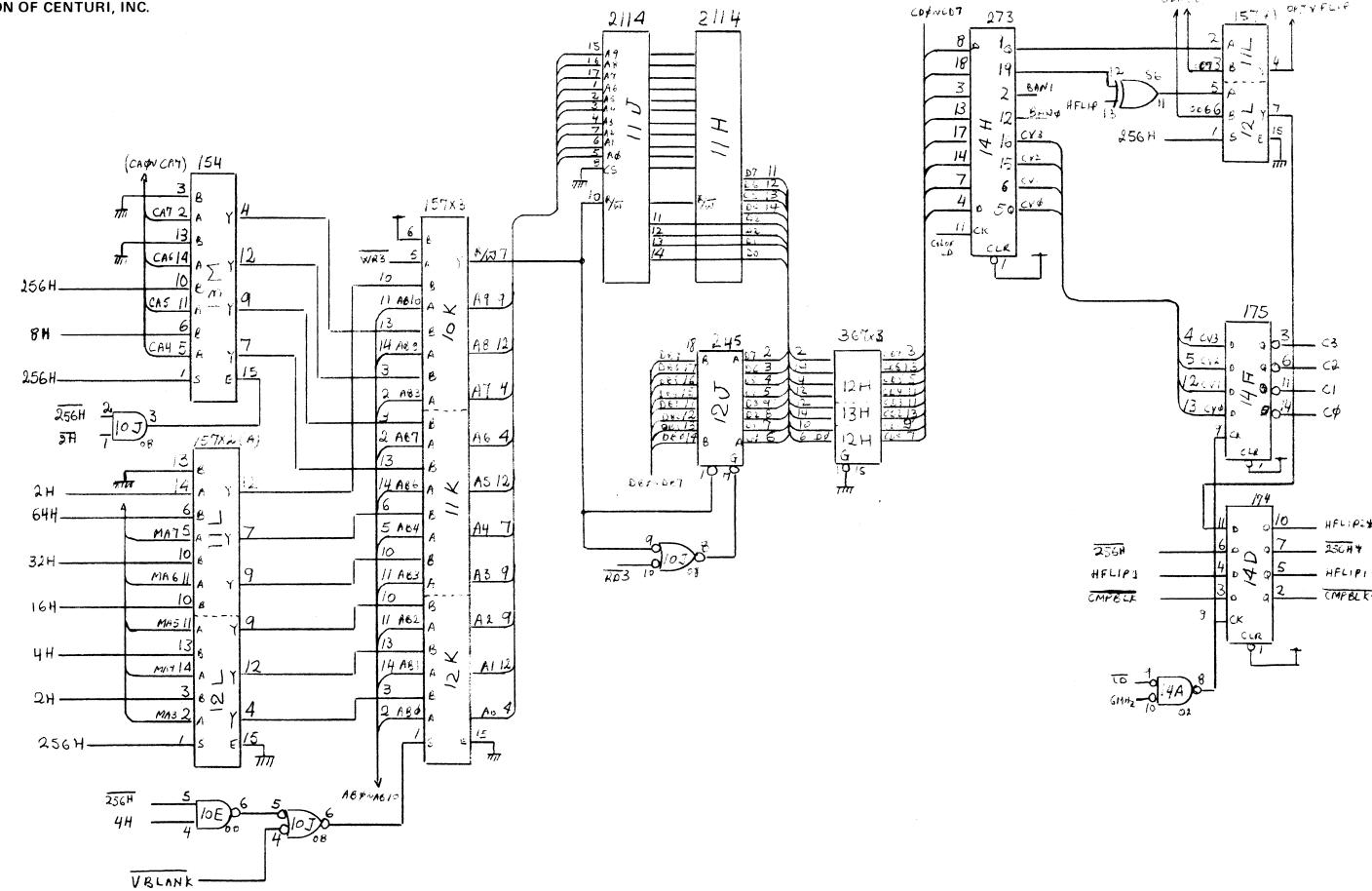


PAGE 1

QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO
HIALEAH, FLORIDA 33014			
WAIT	Swimmer	A102-401	
	HEAT TREAT.	FINISH	
DATE 8/18/82	SCALE	PART NO. 385-17-0100	REV.

				TO
				Unless otherwise specified
				FRACTIONAL INCHES
				DECIMAL INCHES
				DECIMAL MILLIMETERS
				HOLES
REV.	ECN	REVISION	BY	ANGLES SHT. MEAS.
LET.	NO.			

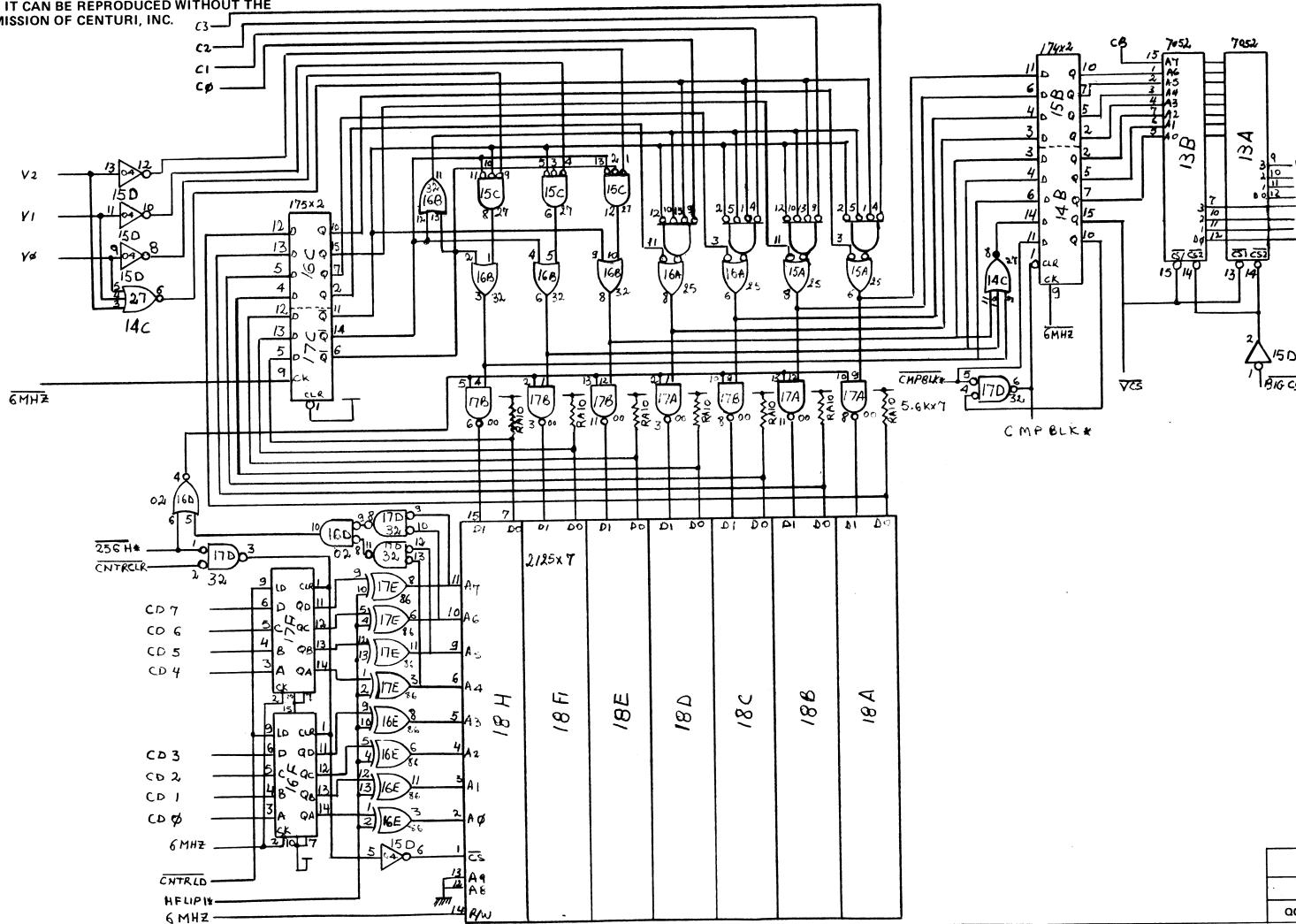
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PAGE 2

				TOLERANCES		centuri inc. HIALEAH, FLORIDA 33014	
				Unless Otherwise Specified			
REV. LET.	ECN NO.	REVISION	BY	FRACTIONS	$\pm 1/32$		
				DECIMALS 2 PL	$\pm .015$		
				DECIMALS 3 PL	$\pm .005$		
				HOLDS	$\pm .003$		
				ANGLES	$\pm 1/2^\circ$		
				SHT. MET BENDS	$\pm 2^\circ$		
				MATL'S.	HEAT TREAT.	FINISH	
				DWN.	APP'D.	DATE	
						8/19/82	
					SCALE	PART NO.	
						385-17-0100	
					REV.		

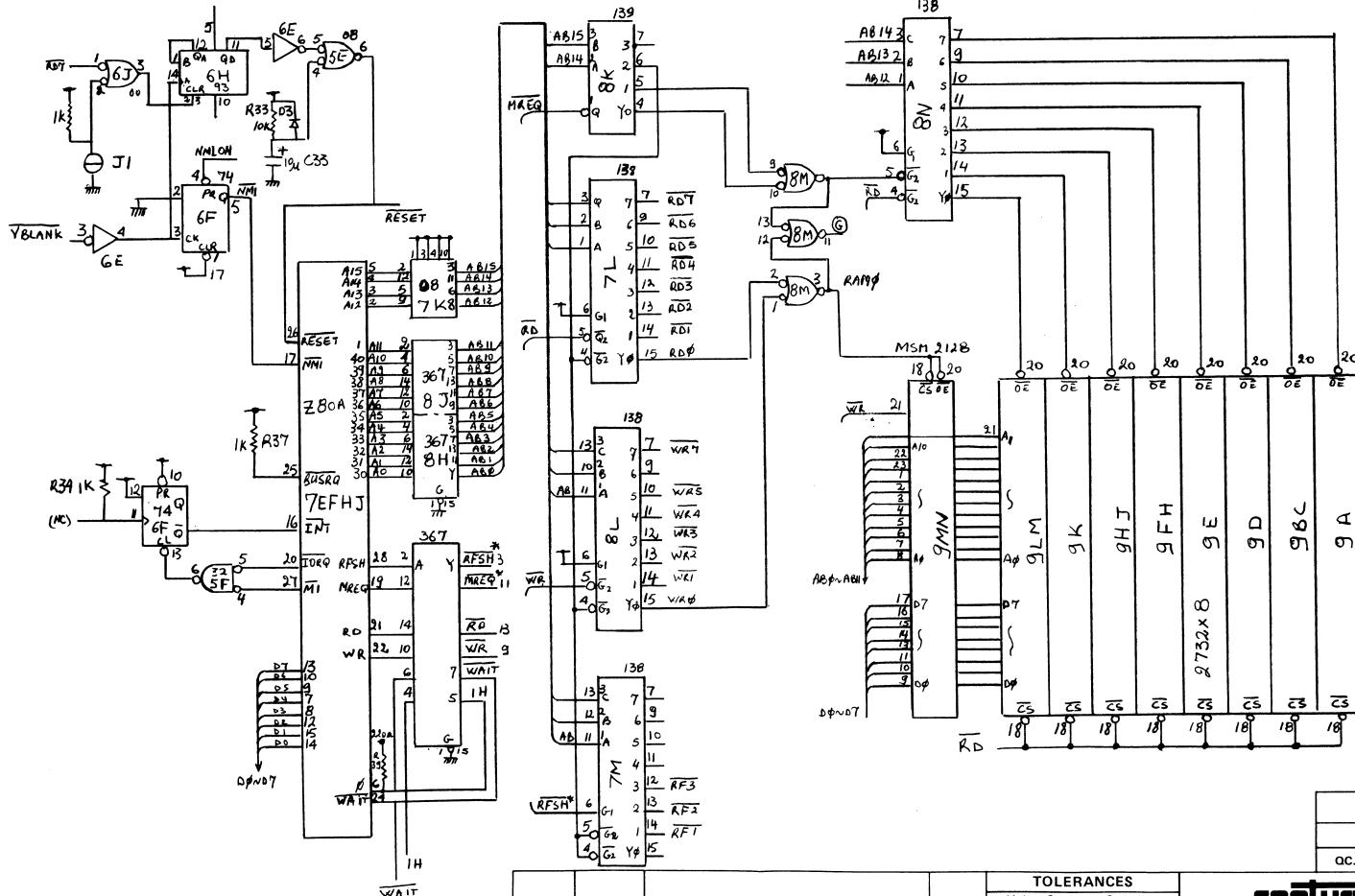
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PAGE 3

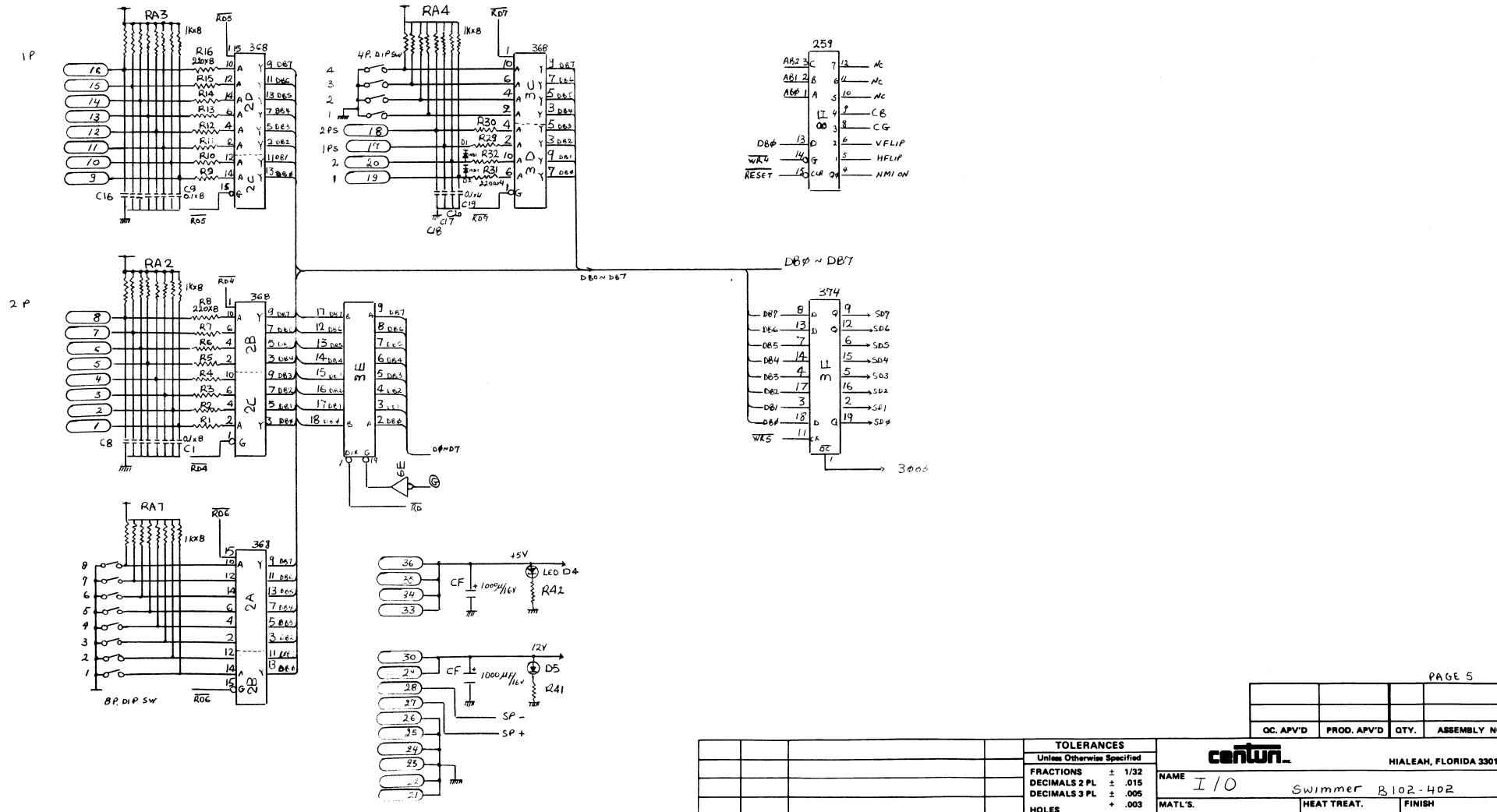
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO
HIALEAH, FLORIDA 33014			
M OUT	Swimmer A102-401		
HEAT TREAT.		FINISH	
DATE 8/17/82	SCALE	PART NO. 385-17-0100	REV.

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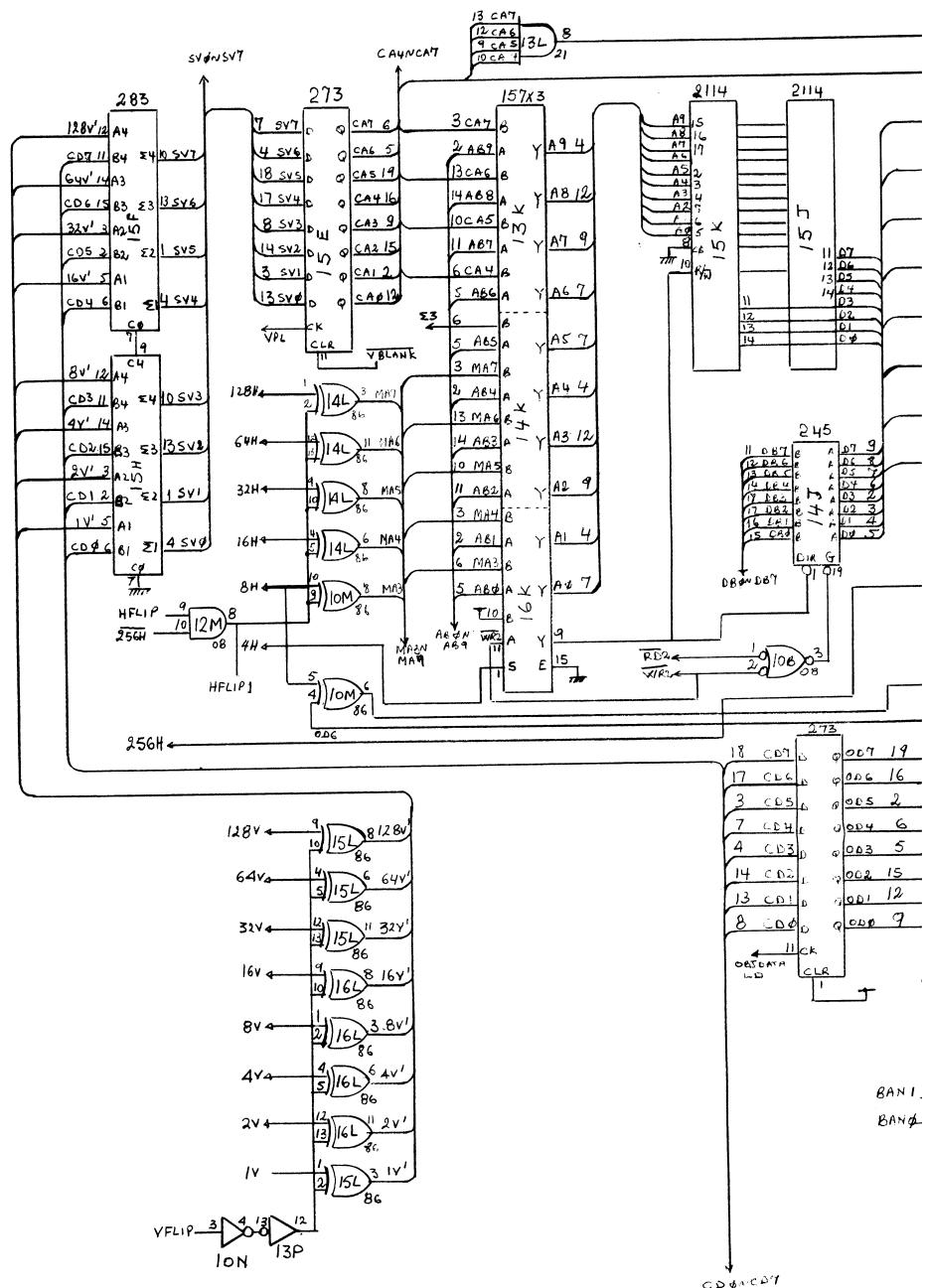


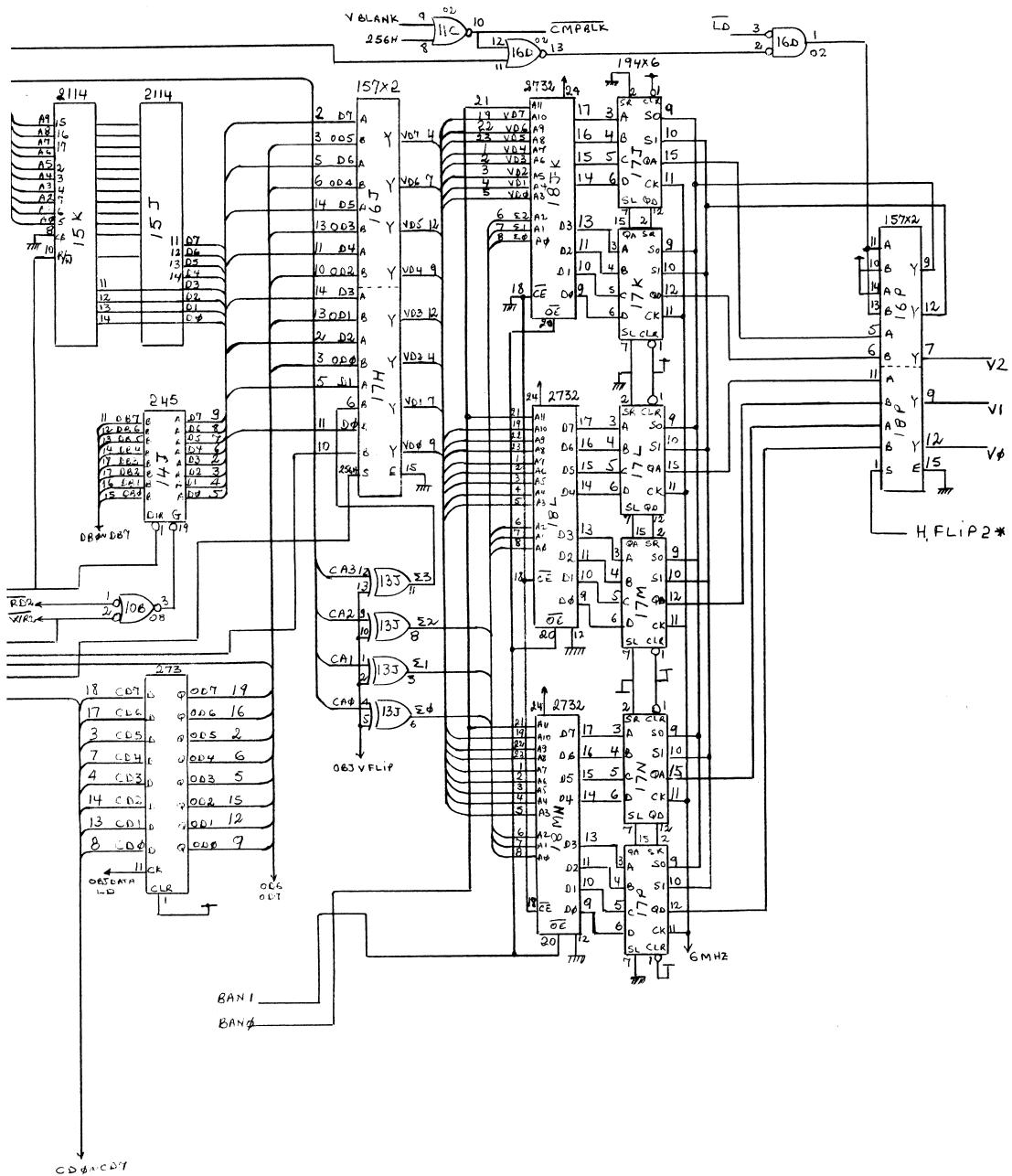
PAGE 4

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EXPRESSED PERMISSION OF CENTURI, INC.



				TOLERANCES				QC. APV'D	PROD. APV'D	CITY.	ASSEMBLY NO.			
				Unless Otherwise Specified				centur TM				HIALEAH, FLORIDA 33014		
				FRACTIONS	$\pm .1/32$			NAME				I 10		
				DECIMALS 2 PL	$\pm .015$			Swimmer				B102-402		
				DECIMALS 3 PL	$\pm .005$			MATL'S.				HEAT TREAT.	FINISH	
				HOLES	$\pm .003$			DWN. APP'D.				8/19/82	SCALE	PART NO.
				ANGLES	$\pm 1/2^\circ$			MANUFACTURE				385-17-0200	REV.	REV.
				SHT. MET BENDS	$\pm 2''$									
REV. LET.	ECN NO.	REVISION		BY										





PAGE 7

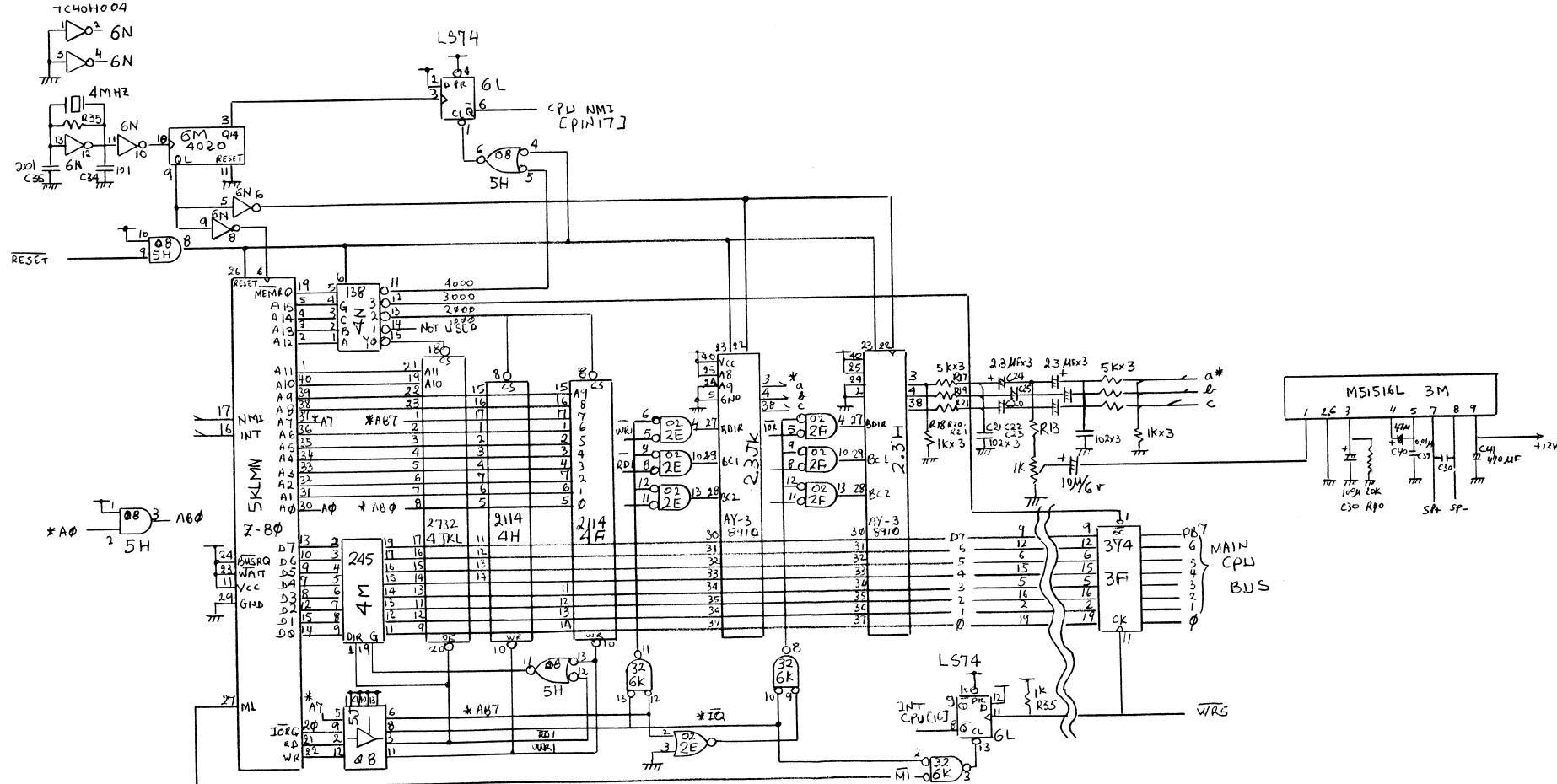
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY N

centuri inc.
HIALEAH, FLORIDA 33013

NAME: VRAM Swimmer A102-401
 MATL'S. HEAT TREAT. FINISH
 DWN. APP'D. DATE: 8/17/82 SCALE PART NO. 385-17-0100 RE

REV.	ECN NO.	REVISION	BY	TOLERANCES Unless Otherwise Specified	centuri inc. HIALEAH, FLORIDA 33013		
				FRACTIONS $\pm 1/32$ DECIMALS 2 PL $\pm .015$ DECIMALS 3 PL $\pm .005$ HOLES $+ .003$ ANGLES $\pm 1/2^\circ$ SHT. MET BENDS $\pm 2^\circ$			
LET.							

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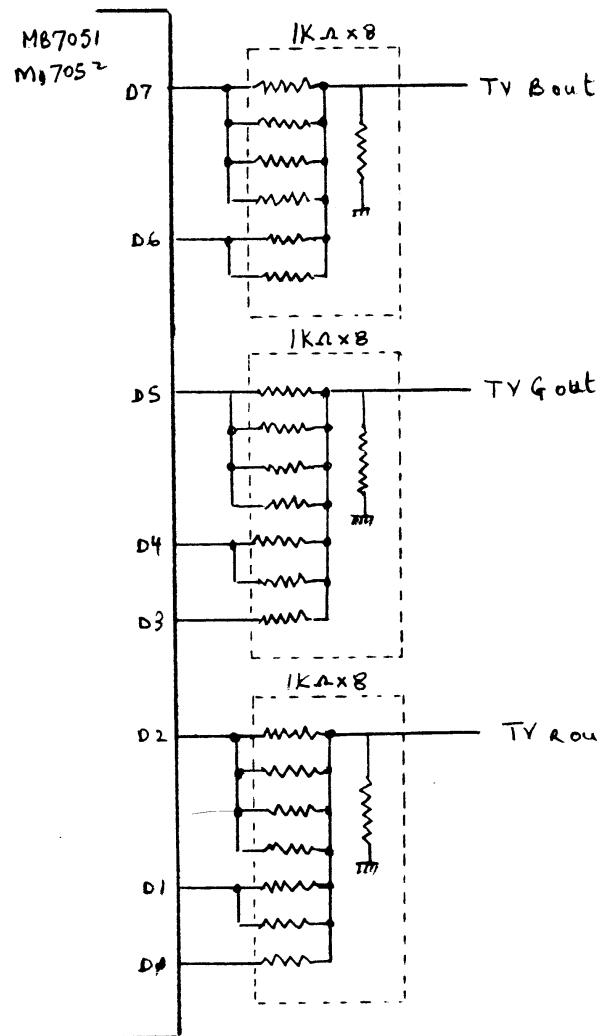


PAGE 8

QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO
luri inc.		HIALEAH, FLORIDA 33014	
<i>mer sound</i>		B 102-402	
HEAT TREAT.		FINISH	
DATE 8/18/82	SCALE	PART NO. 385-17-0200	REV.

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BIG V RAM



TV Bout
TY Gout
TY Rout
TV Sync

PAGE 9

QC: APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

REV. LET.	ECN NO.	REVISION	BY

TOLERANCES

Unless Otherwise Specified

FRACTIONS	± 1/32
DECIMALS 2 PL	± .015
DECIMALS 3 PL	± .005
HOLDS	+ .003 - .001
ANGLES	± 1/2°
SHT. MET BENDS	± 2°

centuri

HIALEAH, FLORIDA 33014

NAME

Swimmer

MATL'S.	HEAT TREAT.	FINISH
DWN. mild steel	APP'D.	DATE 8/19/82

