

MANUAL NO. 901-2168

TRACK & FIELD

COCKTAIL
SERVICE
MANUAL



TRACK AND FIELD

COCKTAIL TABLE

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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 INSTRUCTIONS MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS.

IT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" COMPUTING DEVICE PURSUANT TO SUBPART J OF PART 15 OF F.C.C. RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE WHEN OPERATED IN A COMMERCIAL ENVIRONMENT.

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

"TRACK & FIELD 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 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 OR OUR TOLL FREE LINE LISTED BELOW.

QUESTIONS OR COMMENTS CONCERNING "TRACK & FIELD" 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.)

NOTES

NEVER REPLACE ANY COMPONENT WITH ANYTHING OTHER THAN THE EXACT REPLACEMENT PART.

NEVER REMOVE CIRCUIT BOARD CONNECTIONS WHILE POWER IS ON.

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

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

ALWAYS CONSULT THE SERVICE MANUAL BEFORE ATTEMPTING REPAIRS.

PLAY INSTRUCTIONS

- * TAP "RUN" AND THE PLAYER WILL RUN.
- * PUSH "JUMP/THROW" AND THE PLAYER WILL JUMP OR THROW.
- * HOLD "JUMP/THROW" BUTTON DOWN TO INCREASE ANGLE OF JUMP OR THROW.
- * IF YOU DO NOT QUALIFY IN AN EVENT THE GAME IS OVER.

EVENTS

I. 100M DASH:

KEEP TAPPING "RUN" TO INCREASE SPEED.
DISQUALIFICATION FOR 3 FALSE STARTS.

II&III. LONG JUMP & JAVELIN THROW:

KEEP TAPPING "RUN" TO INCREASE SPEED.
PUSH "JUMP/THROW" AT PROPER POSITION AND HOLD TO CONTROL ANGLE.

IV. 110M HURDLE:

TAP "RUN" TO INCREASE SPEED OF RUNNER.
PRESS "JUMP" TO CLEAR HURDLES.

V. HAMMER THROW:

PRESS "RUN" AND RELEASE.
PRESS "THROW" AT PROPER POSITION.
HOLD TO DETERMINE ANGLE OF THROW.

VI. HIGH JUMP:

PUSH "RUN" AND RELEASE.
HIT "JUMP" AT PROPER POSITION.
CHANGE ANGLE OF JUMP BY USING "JUMP" BUTTON AS OFTEN AS YOU LIKE.

OPTIONAL DIP SWITCH SETTINGS

1. Dip Switch No.1 (8P Dip Switch)

Credits

Coin	Plays	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
1	1	Off	Off	Off	Off	Off	Off	Off	Off
1	2	On	Off	Off	Off	On	Off	Off	Off
1	3	Off	On	Off	Off	Off	On	Off	Off
1	4	On	On	Off	Off	On	On	Off	Off
1	5	Off	Off	On	Off	Off	Off	On	Off
1	6	On	Off	On	Off	On	Off	On	Off
1	7	Off	On	On	Off	Off	On	On	Off
2	1	On	On	On	Off	On	On	On	Off
2	3	Off	Off	Off	On	Off	Off	Off	On
2	5	On	Off	Off	On	On	Off	Off	On
3	1	Off	On	Off	On	Off	On	Off	On
3	2	On	On	Off	On	On	On	Off	On
3	4	Off	Off	On	On	Off	Off	On	On
4	1	On	Off	On	On	On	Off	On	On
4	3	Off	On	On	On	Off	On	On	On
Free Play		On	On	On	On	On	On	On	On

2. Dip Switch No.2 (8P Dip Switch)

NUMBER OF ATHLETICS

Athletics Given	SW1
One	Off
Two	On

EXTENDED ROUND

Extended Round Permitted	SW2
No Extended Round	Off
Extended Round	On

GAME TYPE

STYLE	SW3	PLAYERS
Table	Off	1 thru 4 Players
Upright	On	1 thru 4 Players

2. Dip Switch No. 2 (continues)

BONUS

No. Of Bonus Player	SW4
NONE	Off
One at 100,000 and every 100,000	On

RANKING

Memory At Power Up	SW5
Data Entered Remains	Off
Data Entered Erased	On

LEVEL OF DIFFICULTY

Options	SW6	SW7
Easy	Off	Off
Normal	On	Off
Hard	Off	On
Difficult	On	On

AUDIO ATTRACTION

Music Mode	SW8
Music On	On
Music Off	Off

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 HARNESSSES. 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. (REFER TO 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 110 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 110 VAC PLUG FROM THE AC POWER CORD AND REPLACE WITH A 220 VAC PLUG. ATTACH THE GREEN WIRE FROM THE AC CORD TO THE GREEN SCREW OF THE 220 VAC PLUG. ATTACH THE WHITE WIRE (NEUTRAL) AND THE BLACK WIRE (HOT) OF THE AC CORD TO THE 220 VAC PLUG.
- THIRD: 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 WIRE AT BOTH ENDS OF THE FUSE HOLDER AND REPLACE THE COVER.
- FOURTH: 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 PLUG MARKED 220 VAC.

TO REVERT BACK TO 110 VAC, REPLACE THE COMPONENTS ORIGINALLY REMOVED FROM THE PROCEDURE 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 THE 110/220 VAC POWER INTERCONNECT DIAGRAM)

ROUTINE MAINTENANCE & SERVICE

BECAUSE OF THE SOLID STATE ELECTRONIC CIRCUITRY, THIS MACHINE SHOULD REQUIRE VERY LITTLE MAINTENANCE, AND ONLY OCCASSIONAL ADJUSTMENT. HOWEVER, IT IS NECESSARY TO TAKE STEPS TO INSURE THIS.

THE VOLUME CONTROL IS LOCATED ON THE PRINTED CIRCUIT BOARD AND CAN BE ACCESSED THROUGH THE REAR CABINET 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 FLORIDA)

#(305) 558-5200 (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; \pm 0.1 VOLT. 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.

CABINET ASSEMBLY

PARTS LIST

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	907-2161	COLOR PRINT "B"
2	006-4474	CONTROL PANEL ASS'Y (SEE FIG.5, PAGE 15 FOR BREAK DOWN)
3	804-3134	MONITOR BEZEL, TRACK & FIELD, C/T
4	605-0981	TOP GLASS, TRACK & FIELD, C/T
	605-0982	TOP PLEXI, TRACK & FIELD, C/T
	406-2055	19" MONITOR, WELLS/GARDNER #19K4951
5	907-2160	COLOR PRINT "A"
6	006-4472	CONTROL PANEL ASS'Y (SEE FIG.4 PAGE 14 FOR BREAK DOWN)
7	403-1171	SPEAKER, 5 $\frac{1}{4}$ " RD., 8 OHM, 6W
8	004-4344	TABLE WOOD BASE
	009-4697	COIN DOOR, NOT SHOWN (REFER TO FIG.3 PAGE 12)
	607-4852	ISOLATION TRANSFORMER, 110/220V., 1.8A (NOT SHOWN)

STANDARD COIN DOOR
WICO P/N 15-8281-01

PARTS LIST

<u>ITEM NO.</u>	<u>Wico P/N</u>	<u>Description</u>	<u>Req'd</u>
1	15-8039	Door Frame	1
2	15-8038	Door	1
3	30-9125	Hinge	1
4	15-8117	Nameplate, Centuri	1
5	15-8074	Coin Entry Plate	2
6	15-8072	Push Button, Cover	2
7	26-0583	Label, Push to reject, 25¢	2
8	15-8071	Push Button	2
9	30-7722	Compression Spring	2
10	15-8084	Reject Lever	2
11	15-8075	Coin Chute	2
12	15-9419	Lamp Holder Ass'y	2
13	21-0044	Miniature Lamp, 6V	2
14	15-8083	Coin Return Door	2
15	15-8081	Coin Box	2
16	15-8092	Guard	2
19	23-1347	Coin Switch	2
20	15-8043	Switch Cover	2
21	15-1255	Slam Switch	1
22	31-4015	Plastic Coin Acceptor, 25¢	2
23	15-8086	Coin Acceptor Retainer	2
24	30-1790	Washer, .255 ID x .625 OD x .037" Thick	2
25	30-0931	"E" Ring, ¼"	2
26	30-7372	Extension Spring	2
27	31-4550	Coin Counter, 6VDC, W/Brkt	1
28	15-8113	Bracket	1
29	23-1370	Service Switch	1
31	34-1855	Lock Ass'y, 5/8"	1
32	55-2905	Lock Cam Ass'y	1
33	55-2909	Lock Cam Plate	2
34	30-3001	M.S. Pan Hd, Phil.#6-32 x ½"lg	9
35	30-0164	M.S. F/Hd, Phil.#6-32 x 3/8"lg	2
36	30-1921	Washer, .165 ID x .475 OD x .032" Thick	2
37	30-2826	M.S. Fil/Hd. Phil.#6-32 x 7/16"lg	12
38	30-2818	M.S. Rd/Hd. #4-40 x 7/8" lg	2
39	30-1213	Hex. Nut, #4-40	2
40	30-2778	M.S. Fil/Hd. Phil.#6-32 x ½"lg	2
41	30-2833	M.S.Pan/Hd. Phil. #6-32 x 3/16"lg	9
42	23-1348	Wire Form (Coin Switch)	2
43	97-0007	Door Cable Ass'y	1
44	26-3125	Double Sided Tape(3M) ½"x½"	1
45	15-8107	Key Hook	1

Power Supply PSR-703AE
PARTS LIST (414-2020)

<u>Symbol</u>	<u>Description</u>	<u>Qty</u>
D1	Bridge Stack, RB-40, 600V	1
D4, D5	Fast Recovery Diode, 1GH62	2
D2, D3, D7, D8, D9, D10	Switching Diode, 1S1554	6
D11	Fast Recovery Diode, S5KC20H	1
D12, D13	Fast Recovery Diode, 10DF1	2
D16	Schotky Barrier Diode, C8P030	1
ZD1	Zener Diode, 05Z, 5.6V, 500mw	1
Q1, Q2	Power Transistor, 2SC2553	2
Q3	Power Transistor, 2SC2831	1
Q4, Q5	Transistor, 2SA564R	2
Q6, Q7	Transistor, 2SC828R	2
IC 1	Switching Control, UPC494C	1
IC 2	Regulator IC, 7805 (1A)	1
T1	Power Transformer, SM2335	1
T2, T3	Driver Transformer, SM2215B	2
T4	Power Transformer (Sub) SM2376	1
CH1	Choke Transformer, SM2219	1
CH2	Choke Transformer, SM2376B	1
CH4	Choke Transformer, SM2366	1
L1	AC Line Filter, ELF-18D-112	1
TH1	Power Thermistor, TD18-010	1
C2, C3	Ceramic Capacitor, 2200pf, AC400V	2
C1	Capacitor, Metalized, 0.033mf, 600V	1
C6	" " , 0.47mf, 50V	1
C15	" , Mylar, 0.001mf, 50V	1
C9, C13, C34, C35, C37	" " , 0.01mf	5
C12	" " , 0.0047mf	1
C31	" " , 0.1mf	1
C18	Capacitor, Ceramic, 50pf, 50V	1
C7	" " , 330pf, 1kv	1
C16, C28	" " , 0.01mf, 16V	2
C20, C23	" " , 0.1mf, 16V	2
C14	Capacitor, Electrolytic, 4.7mf, 25V	1
C10	" " , 10mf, 16V	1
C11	" " , 100mf, 16V	1
C21	" " , 220 mf, 35V	1
C22	" " , 470mf, 16V	1
C17, C19	" " , 470mf, 25V	2
C29, C30	" " , 2200mf, 10V	2
C4, C5	" " , 220mf, 180V	2
R31	Resistor, Cement, 270 ohm, 5W	1
R34	" , Oxide Metal Film, 33 ohm, 3W	1
R9	" " " " , 470 ohm, 2W	1
R3	" " " " , 100 ohm, 2W	1

POWER SUPPLY PSR-703AE
PART LIST (414-2020)

<u>Symbol</u>	<u>Description</u>	<u>Qty</u>
R36,R37,R39	Resistor, Carbon, 5.1 ohm, 1/2 W	3
R4,R5	" " , 12 ohm, 1/2 W	2
R6,R7	" " , 22 ohm, 1/2 W	2
R1,R2	" " , 150K ohm, 1/2 W	2
R8	" " , 330K ohm, 1/2 W	1
R12	" " , 150 ohm, 1/4 W	1
R10	" " , 1K ohm, 1/4 W	1
R11	" " , 10 ohm, 1/4 W	1
R40	" " , 3.9K ohm, 1/4 W	1
R35	" " , 5.1K ohm, 1/4 W	1
R18,R27	" " , 100 ohm, 1/4 W	2
R30	" " , 180 ohm, 1/4 W	1
R22	" " , 220 ohm, 1/4 W	1
R32	" " , 1K ohm, 1/4 W	1
R26	" " , 1.8K ohm, 1/4 W	1
R12,R14	" " , 5.1K ohm, 1/4 W	2
R28	" " , 10K ohm, 1/4 W	1
R29	" " , 15K ohm, 1/4 W	1
R23	" " , 20K ohm, 1/4 W	1
R19	" " , 6.8K ohm, 1/4 W	1
R15,R16,R17,R33	" " , 100K ohm, 1/4 W	4
R21	" " , 150K ohm, 1/4 W	1
R25	" " , 270K ohm, 1/4 W	1
R20	" " , 390 ohm, 1/4 W	1
VR1	Semi-fixed resistor, GFD6-B 3K	1
RS1	Manganese Metal Wire, A-2145	1
RS2	Manganese Metal Wire, 1.0 ø x 55m/m	1
F1	Fuse, 3 amp.	1
	Fuse Holder, F-207	1

TRACK AND FIELD
CPU PC BOARD PARTS LIST

IC's

<u>Description</u>	<u>Part No.</u>	<u>Qty</u>
74LS00	501-0102	1
74LS04	501-0108	1
74LS08	501-0153	3
74LS14P	501-0169	1
74LS32	501-0156	4
74LS74A	501-0121	3
74LS86	501-0125	6
74LS138	501-0200	3
74LS139	501-0170	2
74LS153	501-0131	4
74LS157	501-0141	5
74LS163AP	501-0184	6
74LS164	501-0146	1
74LS174	501-0135	4
74LS244	501-0214	4
74LS245	501-0202	6
74LS259P	501-0190	1
74LS273	501-0205	4
74LS298P	501-0192	1
74LS368A	501-0211	1
74LS373	501-0253	1
74LS377	501-0182	1
MB89001P-G	501-0469	1
MB14082M-G	501-0470	1
MB14083M-G	501-0471	1
K824-502	501-0431	1
K824-503	501-0432	1
K827-504	501-0472	1
2114-2 (200ns)	501-0077	4
TMM2016P (150ns)	501-0445	2
TC5517AP-2 (200ns)	501-0473	1
2149HL-3 (55ns)	501-0435	2
2764-30 (Tacc=300ns)	500-0023	9
2764-25 (Tacc=250ns)	500-0023	3
6331-1 (Tacc=50ns)	500-0017	1
6301-1 (Tacc=55ns)	500-0011	2
NE555	501-0224	1

SEMI-CONDUCTORS

2SA697E, Transistor	502-0381	3
2SC763C, Transistor	502-0400	1
2SC2320E, Transistor	502-0379	1
10D1, Diode	510-0654	1
1S1588, Diode	510-0611	2
RD4,3E B1, Diode	510-0702	1

TRACK AND FIELD
CPU PC BOARD PARTS LIST

RESISTORS

<u>Description</u>	<u>Part No.</u>	<u>Qty</u>
75 ohm, 1/4W, 5%	503-0558	1
100 ohm, 1/4W, 5%	503-0473	1
220 ohm, 1/4W, 5%	503-0433	3
470 ohm, 1/4W, 5%	503-0407	5
1K ohm, 1/4W, 5%	503-0413	9
3.3K ohm, 1/4W, 5%	503-0431	1
4.7K ohm, 1/4W, 5%	503-0405	4
5.6K ohm, 1/4W, 5%	503-0438	2
10K ohm, 1/4W, 5%	503-0417	2
20K ohm, 1/4W, 5%	503-0459	1
22K ohm, 1/4W, 5%	503-0440	1
1Kx4 ohm, 1/8W, 5%, array	504-1042	2
4.7Kx4 ohm, 1/8W, 5%, array	504-1043	2
4.7Kx6 ohm, 1/8W, 5%, array	504-1044	1
4.7Kx8 ohm, 1/8W, 5%, array	504-1045	2

CAPACITORS

47mf, 10v. Electrolytic	516-0802	2
220mf, 10v. Electrolytic	516-0822	1
330mf, 16v. Electrolytic	516-0913	1
4.7mf, 16v. Tantalum	519-0852	1
0.047mf, 50v. Mylar	517-0758	1
0.01mf, 25v. Ceramic	515-0777	1
0.022mf, 25v. Ceramic	515-0731	2
0.1mf, 25v. Ceramic	515-0700	59

MISCELLANEOUS

Crystal, 18.432 MHz	507-0572	1
Socket, IC 42 pin	514-1582	1
Socket, IC 40 pin	514-1570	1
Socket, IC 28 pin	514-1572	16
Lithium Battery, 3V.	414-2022	1

TRACK AND FIELD
SOUND PC BOARD PARTS LIST

IC's

<u>Description</u>	<u>Part No.</u>	<u>Qty</u>
74LS02	501-0105	1
74LS04	501-0108	1
74LS08	501-0153	1
74LS74A	501-0121	1
74LS138	501-0200	2
74LS174	501-0135	2
74LS253	501-0436	4
74LS367A	501-0176	5
74LS374	501-0204	4
74LS393P	501-0180	2
Z80A	501-0250	1
VLM5030 (voice)	501-0466	1
76489AN (sound)	501-0467	1
MSM4066RS (OKI)	501-0212	1
LA4460 (audio amp)	501-0437	1
LA6358	501-0468	1
uPC324C	501-0231	1
2114-3 (300ns)	501-0077	2
2764-30	500-0023	2

SEMI-CONDUCTORS

2SC2320E, Transistor	502-0379	2
2SD361, Transistor	502-0380	2
10D1, Diode	510-0654	2

RESISTORS

4.7 ohm, 1/4W, 5%	503-0535	2
10 ohm, 1/4W, 5%	503-0553	1
120 ohm, 1/4W, 5%	503-0576	1
220 ohm, 1/4W, 5%	503-0433	19
470 ohm, 1/4W, 5%	503-0407	2
1K ohm, 1/4W, 5%	503-0413	3
2.2K ohm, 1/4W, 5%	503-0400	1
3.3K ohm, 1/4W, 5%	503-0431	1
4.7K ohm, 1/4W, 5%	503-0405	2
5.1K ohm, 1/4W, 5%	503-0454	1
5.6K ohm, 1/4W, 5%	503-0438	1
8.2K ohm, 1/4W, 5%	503-0447	1
10K ohm, 1/4W, 5%	503-0417	14
20K ohm, 1/4W, 5%	503-0459	9
47K ohm, 1/4W, 5%	503-0439	1
100K ohm, 1/4W, 5%	503-0406	3
220K ohm, 1/4W, 5%	503-0401	1
2.2Kx8 ohm, 1/8W, 5%, array	504-1046	5
1K ohm, Variable	512-0672	1

TRACK AND FIELD
SOUND PC BOARD PARTS LIST

CAPACITORS

<u>Description</u>	<u>Part No.</u>	<u>QTY</u>
30pf, 25v. Ceramic	515-0791	1
100pf, 25v. Ceramic	515-0748	2
150pf, 25v. Ceramic	515-0726	1
220pf, 25v. Ceramic	515-0734	1
330pf, 25v. Ceramic	515-0729	1
470pf, 25v. Ceramic	515-0778	1
0.1mf, 25v. Ceramic	515-0700	52
0.22mf, 35v. Tantalum	519-0873	1
0.47mf, 35v. Tantalum	519-0853	2
0.01mf, 50v. Mylar	517-0768	1
0.033mf, 50v. Mylar	517-0772	2
0.047mf, 50v. Mylar	517-0758	3
0.1mf, 50v. Mylar	517-0765	4
10mf, 10v. Electrolytic	516-0871	1
100mf, 25v. Electrolytic	516-0846	1
220mf, 10v. Electrolytic	516-0822	1
220mf, 16v. Electrolytic	516-0860	1
1000mf, 25v. Electrolytic	516-0827	1

MISCELLANEOUS

Crystal, 14.31818 MHz	507-0560	1
Crystal, 3.579545 MHz	507-0550	1
Switch, Dip (8p)	506-1000	2
Socket, IC, 28 pin	514-1572	3
Connector, Flat, 40 pin	401-1376	1
Connector post W/Base 2P	401-1220	1
Heat Sink (OS-Seiki, KN-50)	408-3008	1

centuri TM inc.

Centuri, Inc. • 245 W. 74th Place • Hialeah, Florida 33014
Telephone: 305-558-5200 • Telex: 803694 • ANSB Centuri

15-AE

50w

* SEE SERVICE MANUAL FOR 220 VAC CONVERSION

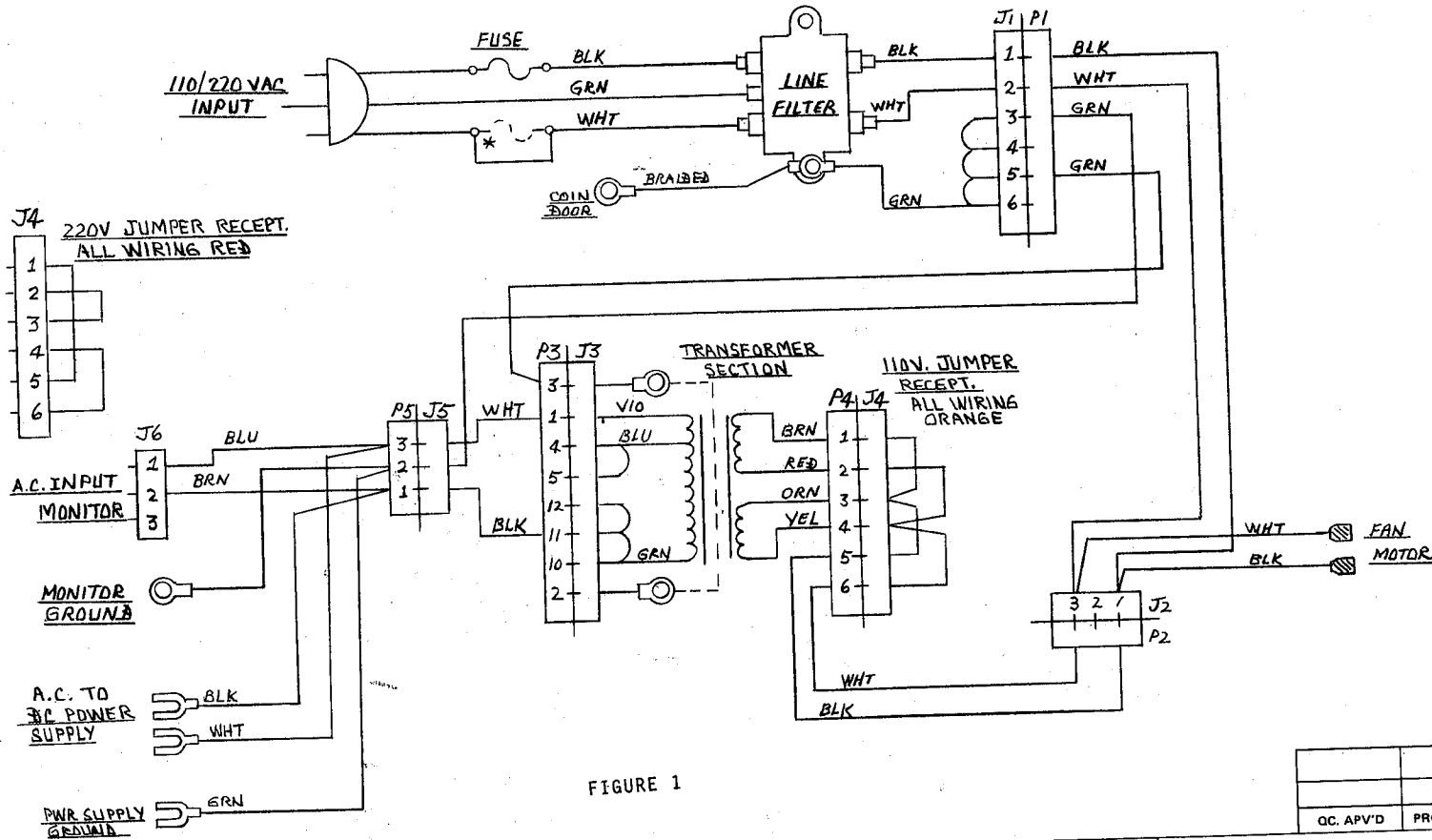
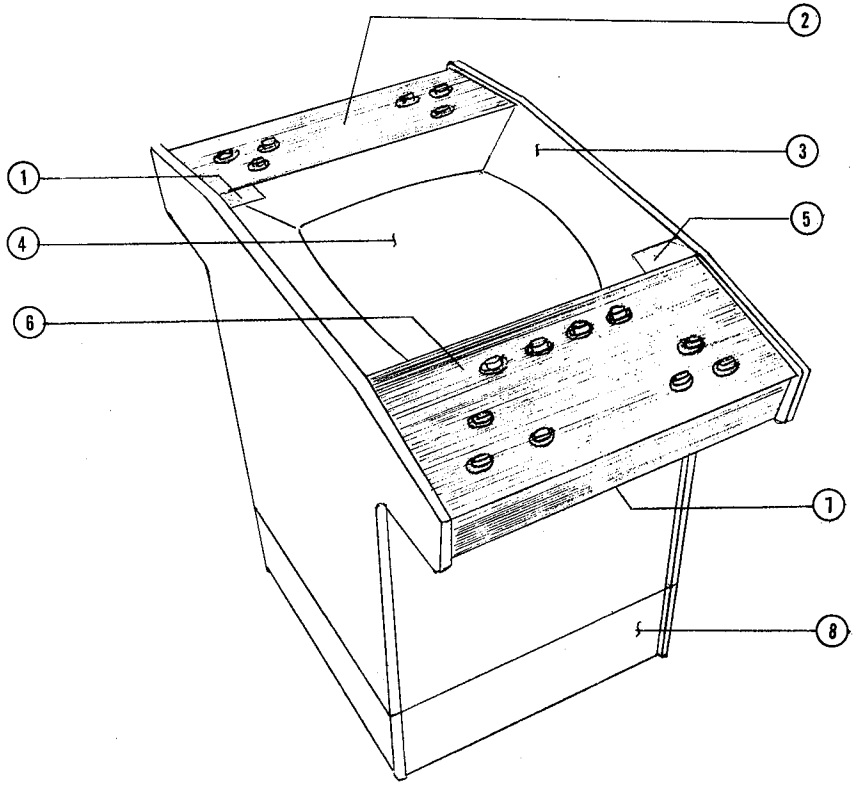


FIGURE 1

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES	centuri inc. HIALEAH, FLORIDA 33014				
				Unless Otherwise Specified	NAME	GC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO
				FRACTIONS ± 1/32	110/220VAC INTERCONNECT DIAGRAM, TRACK & FIELD, C/T				
				DECIMALS 2 PL ± .015	MAT'L'S.	HEAT TREAT.		FINISH	
				DECIMALS 3 PL ± .005					
				HOLES - .003	DWN. <i>MJ</i>	APP'D. <i>[Signature]</i>	DATE 10-19-83	SCALE <i>R</i>	PART NO. 904-0007
				ANGLES ± 1/2'					REV.
				SHT. MET BENDS ± 2'					

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FIGURE 2



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

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES		centuri inc. HIALEAH, FLORIDA 33014					
				Unless Otherwise Specified		NAME					
				FRACTIONS	± 1/32	CABINET ASS'Y-TRACK & FIELD, C/T					
				DECIMALS 2 PL	± .015	MATL'S.					
				DECIMALS 3 PL	± .005	HEAT TREAT.		FINISH			
				HOLES	+ .003						
					- .001						
				ANGLES	± 1/2°	DWN.	APP'D	DATE	SCALE	PART NO.	REV.
				SHT. MET BENDS	± 2'		<i>[Signature]</i>	10-24-83	X		

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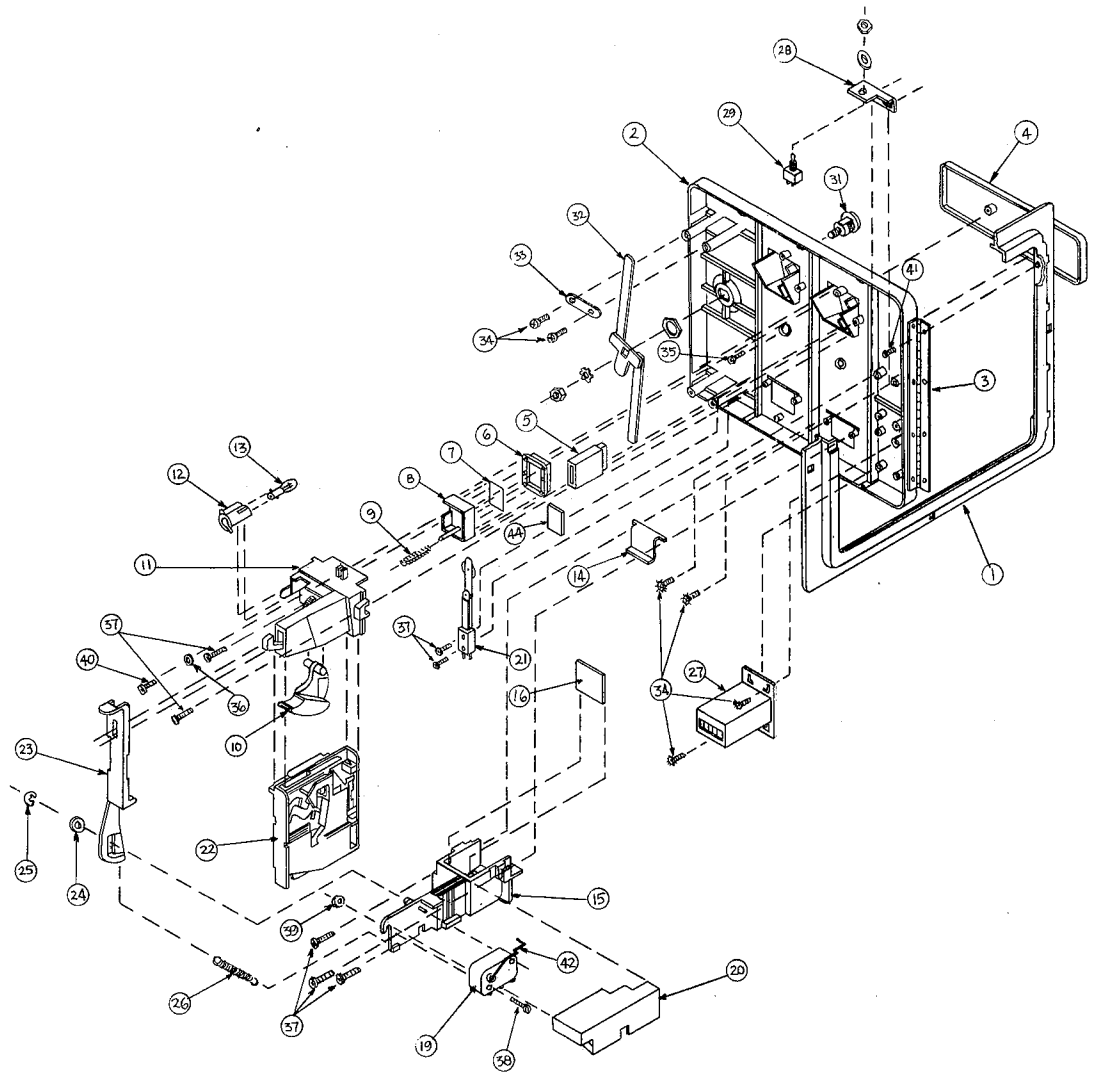


FIGURE 3

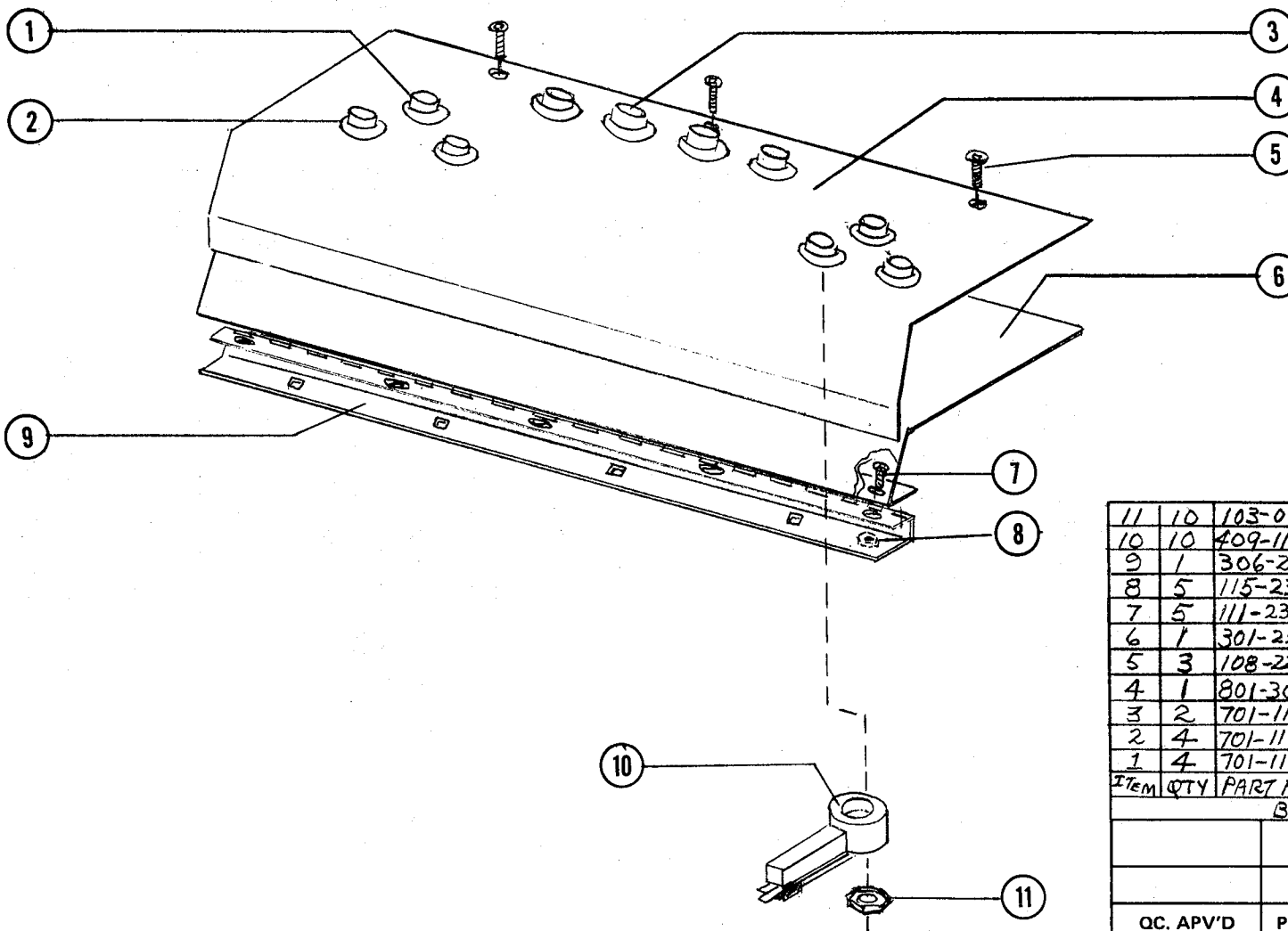
WICO P/N 15-8291-02

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

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES	NAME	DATE	SCALE	PART NO.	REV.
				Unless Otherwise Specified	ST'D SINGLE COIN DOOR 1/2 COIN ENTRY	8-8-83	XL	009-4697	
				FRACTIONS ± 1/32	centuri inc. HIALEAH, FLORIDA 33014 HEAT TREAT. FINISH DWN. M.S. APP'D. [Signature]				
				DECIMALS 2 PL ± .015					
				DECIMALS 3 PL ± .005					
				HOLES ± .003					
				ANGLES ± 1/2°					
				SHT. MET BENDS ± 2°					

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FIGURE 4



11	10	103-0951	PAL NUT
10	10	409-1163	SWITCH W/HOLDER ASS'Y
9	1	306-2675	HINGE
8	5	115-2384	KEP NUT #10-24
7	5	111-2322	CARR. BOLT, BLK OXIDE #10-24 X 1/2"
6	1	301-2525	CONTROL PANEL 1 & 2 PLAYER
5	3	108-2293	BUTTON HD HEX. SCREW 1/4-20 X 3/4"
4	1	801-3096	CONTROL PANEL OVERLAY
3	2	701-1181	BLUE BUTTON ASS'Y
2	4	701-1171	RED BUTTON ASS'Y
1	4	701-1170	WHITE BUTTON ASS'Y
ITEM	QTY	PART NO.	DESCRIPTION
BILL OF MATERIALS			
			1
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

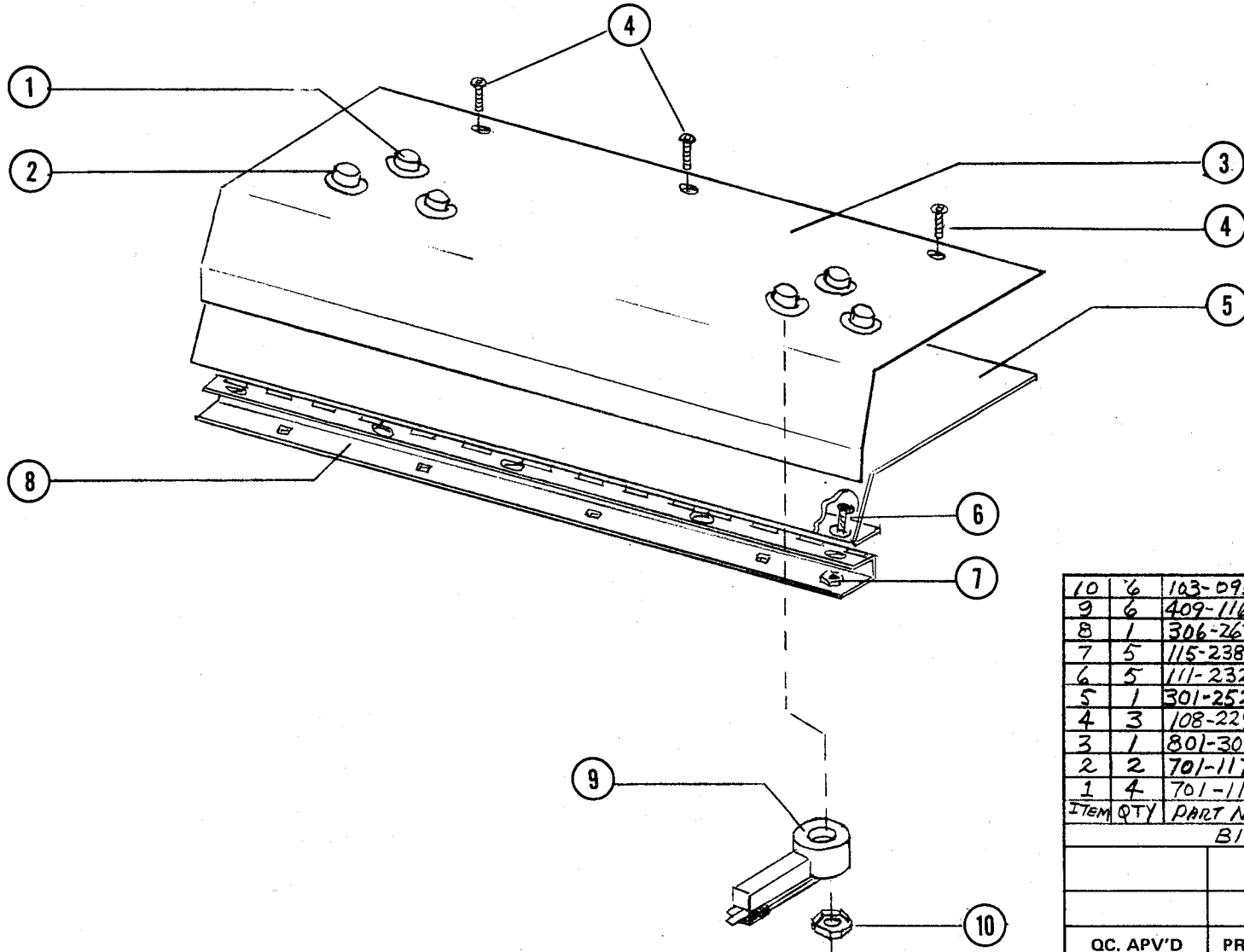
REV. LET.	ECN NO.	REVISION	BY	TOLERANCES		centuri inc.			HIALEAH, FLORIDA 33014				
				Unless Otherwise Specified		NAME CONTROL PANEL ASS'Y - 1ST & 2ND PLAYER C/T							
				FRACTIONS ± 1/32		MATL'S.			HEAT TREAT.		FINISH		
				DECIMALS 2 PL ± .015		DWN		APP'D.		DATE		SCALE	
				DECIMALS 3 PL ± .005		MS.		[Signature]		10-14-83		PART NO.	
				HOLES + .003						10-14-83		006-4472	
				- .001								REV.	
				ANGLES ± 1/2°									
				SHT. MET BENDS ± 2°									

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EXPRESSED PERMISSION OF CENTURI, INC.

FIGURE 5



10	6	103-0951	PAL NUT
9	6	409-1163	SWITCH W/HOLDER ASS'Y
8	1	306-2675	HINGE
7	5	115-2384	KEP NUT#10-24
6	5	111-2322	CARR. BOLT, BLK OXIDE#10-24X 1/2"
5	1	301-2526	CONTROL PANEL 3&4 PLAYER
4	3	108-2293	BUTTON HD HEX SCREW 1/4-20X 3/4"
3	1	801-3097	CONTROL PANEL OVERLAY
2	2	701-1171	RED BUTTON ASSY
1	4	701-1170	WHITE BUTTON ASS'Y
ITEM	QTY	PART NO.	DESCRIPTION

BILL OF MATERIALS			
		1	
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

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AF 17899A

				TOLERANCES	
				Unless Otherwise Specified	
				FRACTIONS	± 1/32
				DECIMALS 2 PL	± .015
				DECIMALS 3 PL	± .005
				HOLES	+ .003
					- .001
REV. LET.	ECN NO.	REVISION	BY	ANGLES	± 1/2°
				SHT. MET BENDS	± 2°

centuri inc. HIALEAH, FLORIDA 33014

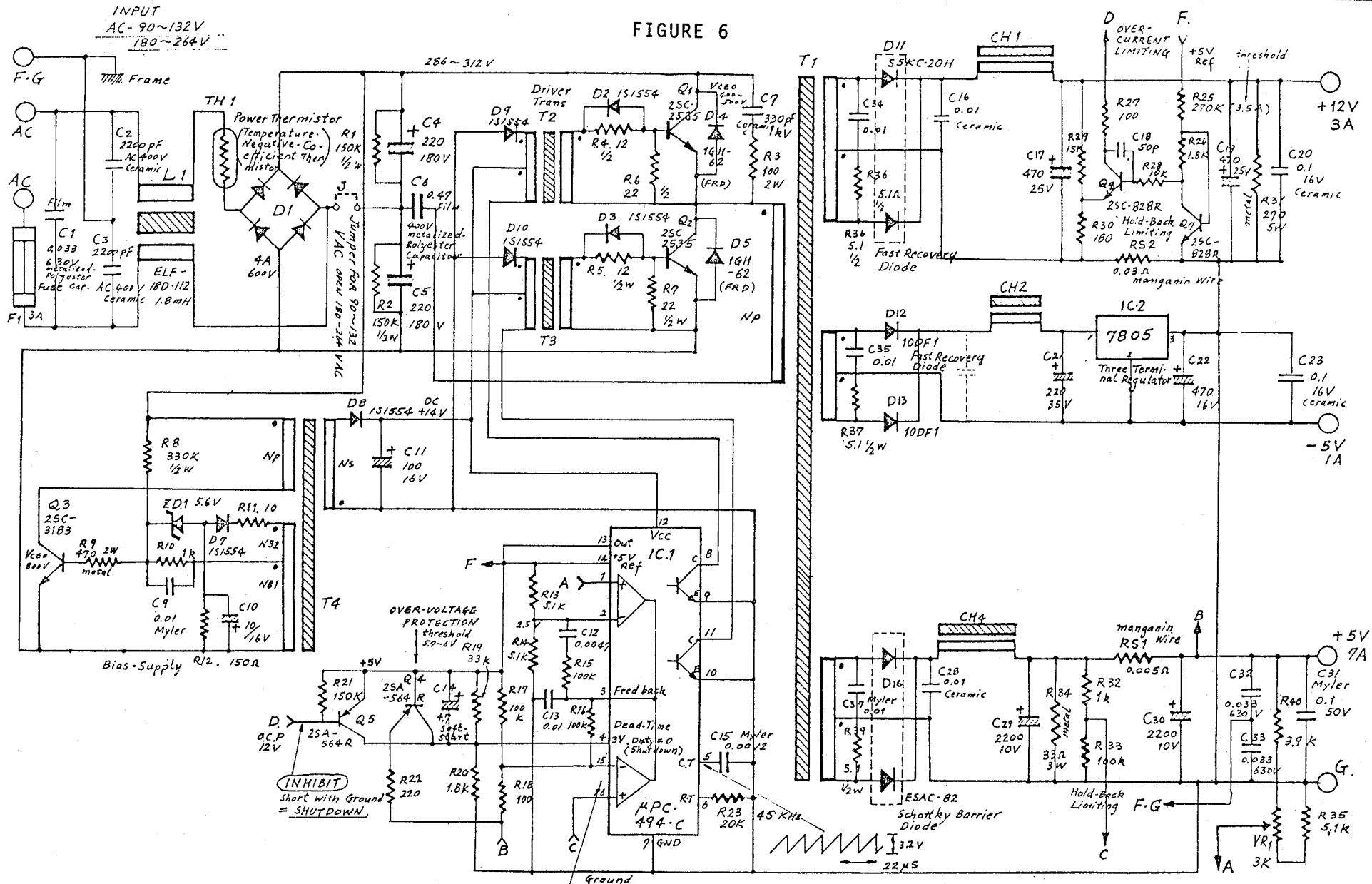
NAME: CONTROL PANEL ASSY - 3RD & 4TH PLAYER C/T

MATL'S. HEAT TREAT. FINISH

DWN. APP'D DATE SCALE PART NO. REV.

MS. [Signature] 10-14-83 K 006-4474

FIGURE 6



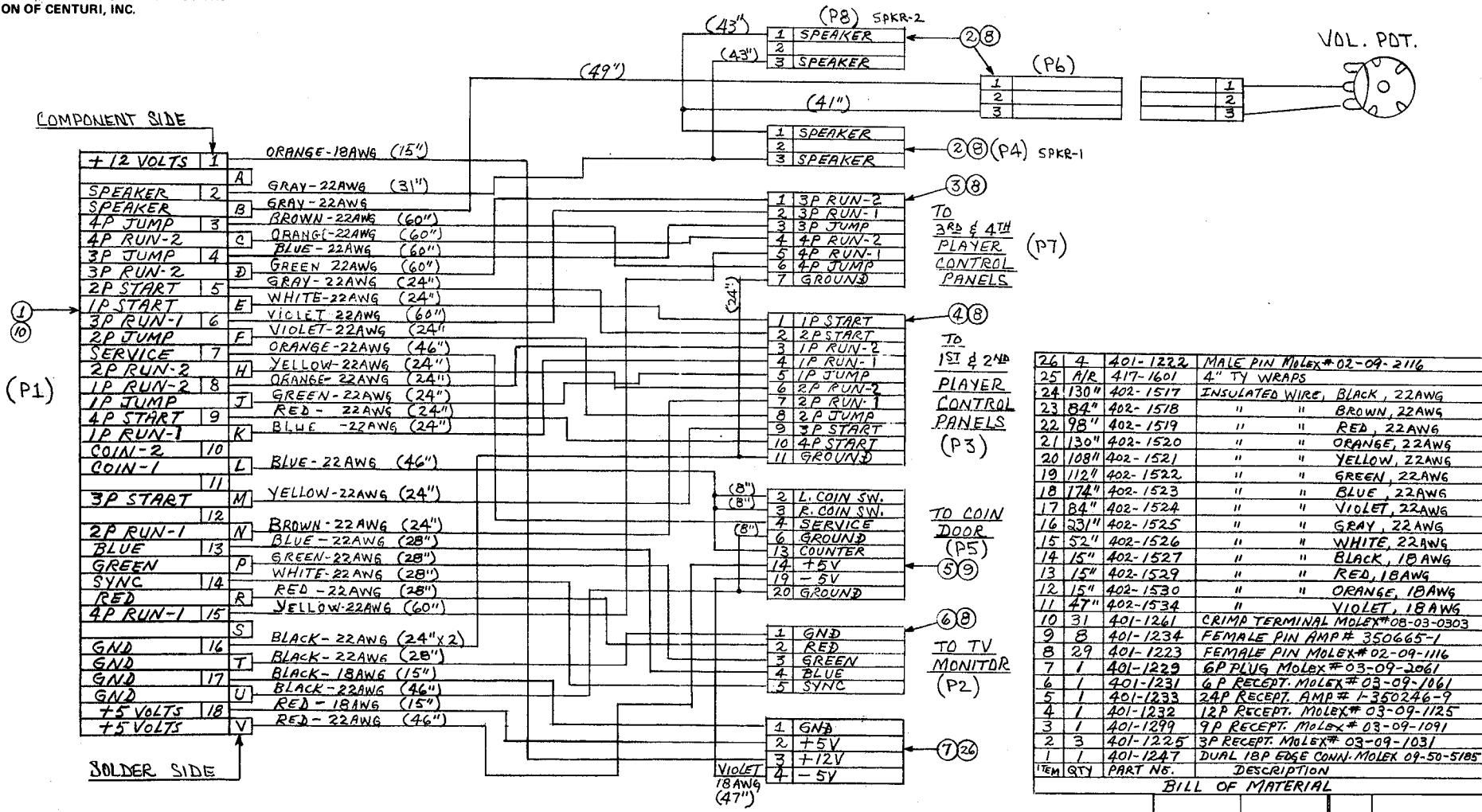
* CAPACITORS, NOT MENTIONED ARE ALL MYLER-FILM CAPACITORS

* RESISTORS, NOT MENTIONED ARE ALL CARBON RES/STOR 1/2 WATT TYPES.

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REV. LET.		ECN NO.	REVISION	BY	ANGLES SH. MET BENDS	TOLERANCES Unless Otherwise Specified		centuri.		HIALLEAH, FLORIDA 33014	
						FRACTIONS	± 1/32	NAME			
						DECIMALS 2 PL.	± .016	PS-R-703-AE			
						DECIMALS 3 PL.	± .005	MATERIAL		HEAT TREAT.	
						HOLES	± .003	FINISH			
						ANGLES	± .001	DWN.		SCALE	
						SH. MET BENDS	± 2°	APPD.		DATE	
								PART NO.		4414-2020	
								REV.			

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ITEM	QTY	PART NO.	DESCRIPTION
26	4	401-1222	MALE PIN MOLEX# 02-09-2116
25	A/R	417-1601	4" TY WRAPS
24	130"	402-1517	INSULATED WIRE, BLACK, 22AWG
23	84"	402-1518	" " BROWN, 22AWG
22	98"	402-1519	" " RED, 22AWG
21	130"	402-1520	" " ORANGE, 22AWG
20	108"	402-1521	" " YELLOW, 22AWG
19	112"	402-1522	" " GREEN, 22AWG
18	174"	402-1523	" " BLUE, 22AWG
17	84"	402-1524	" " VIOLET, 22AWG
16	231"	402-1525	" " GRAY, 22AWG
15	52"	402-1526	" " WHITE, 22AWG
14	15"	402-1527	" " BLACK, 18AWG
13	15"	402-1529	" " RED, 18AWG
12	15"	402-1530	" " ORANGE, 18AWG
11	47"	402-1534	" " VIOLET, 18AWG
10	31	401-1261	CRIMP TERMINAL MOLEX# 08-03-0303
9	8	401-1234	FEMALE PIN AMP# 350665-1
8	29	401-1223	FEMALE PIN MOLEX# 02-09-1116
7	1	401-1229	6P PLUG MOLEX# 03-09-2061
6	1	401-1231	6P RECEPT. MOLEX# 03-09-1061
5	1	401-1233	24P RECEPT. AMP# 1-350246-9
4	1	401-1232	12P RECEPT. MOLEX# 03-09-1125
3	1	401-1299	9P RECEPT. MOLEX# 03-09-1091
2	3	401-1225	3P RECEPT. MOLEX# 03-09-1031
1	1	401-1247	DUAL 18P EDGE CONN. MOLEX 04-50-5705

FIGURE 7

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES	DATE	SCALE	PART NO.	REV.
				Unless Otherwise Specified	10-10-83	2	008-4915	
				FRACTIONS ± 1/32				
				DECIMALS 2 PL ± .015				
				DECIMALS 3 PL ± .005				
				HOLES ± .003				
				ANGLES ± 1/2°				
				SHT. MET BENDS ± 2°				

centuri HIALEAH, FLORIDA 33014

NAME: CPU HARNESS SCHEMATIC-TRACK & FIELD, C/T

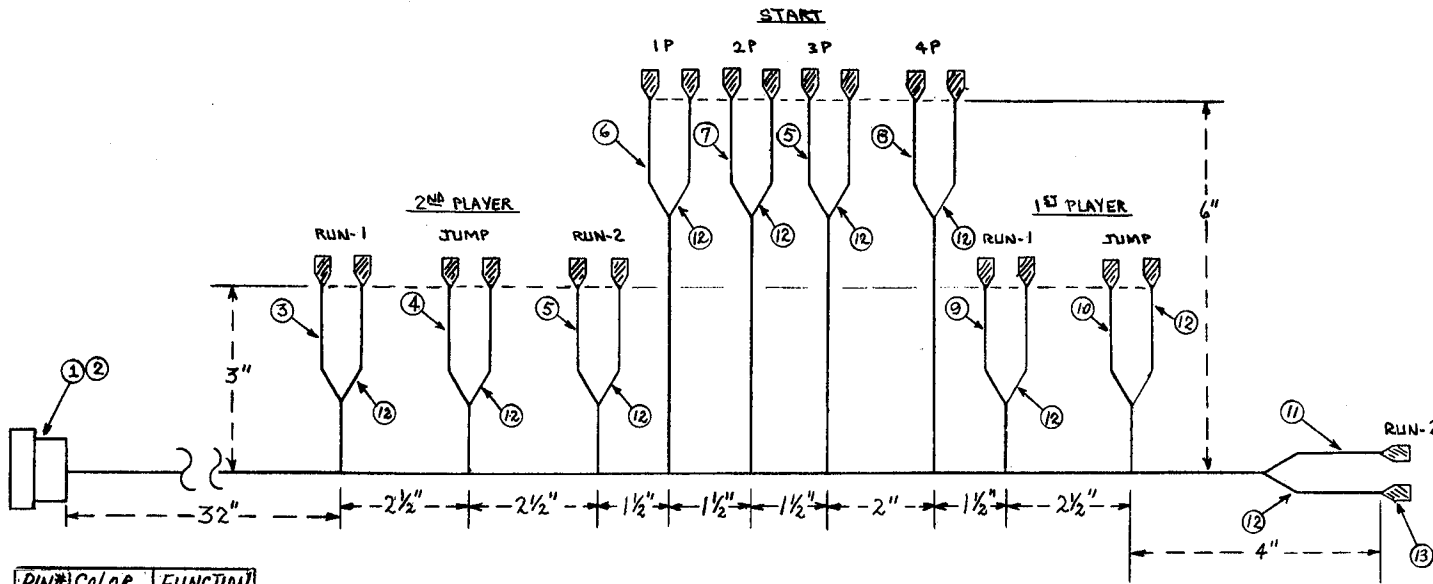
MAT'L'S. HEAT TREAT. FINISH

DWN: M.S. APP'D: [Signature] DATE: 10-10-83 SCALE: 2 PART NO.: 008-4915 REV.:

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PIN#	COLOR	FUNCTION
1	WHITE	1P START
2	GRAY	2P START
3	ORANGE	1P RUN-2
4	BLUE	1P RUN-1
5	GREEN	1P JUMP
6	YELLOW	2P RUN-2
7	BROWN	2P RUN-1
8	VIOLET	2P JUMP
9	YELLOW	3P START
10	RED	4P START
11	BLACK	GROUND
12	BLANK	BLANK

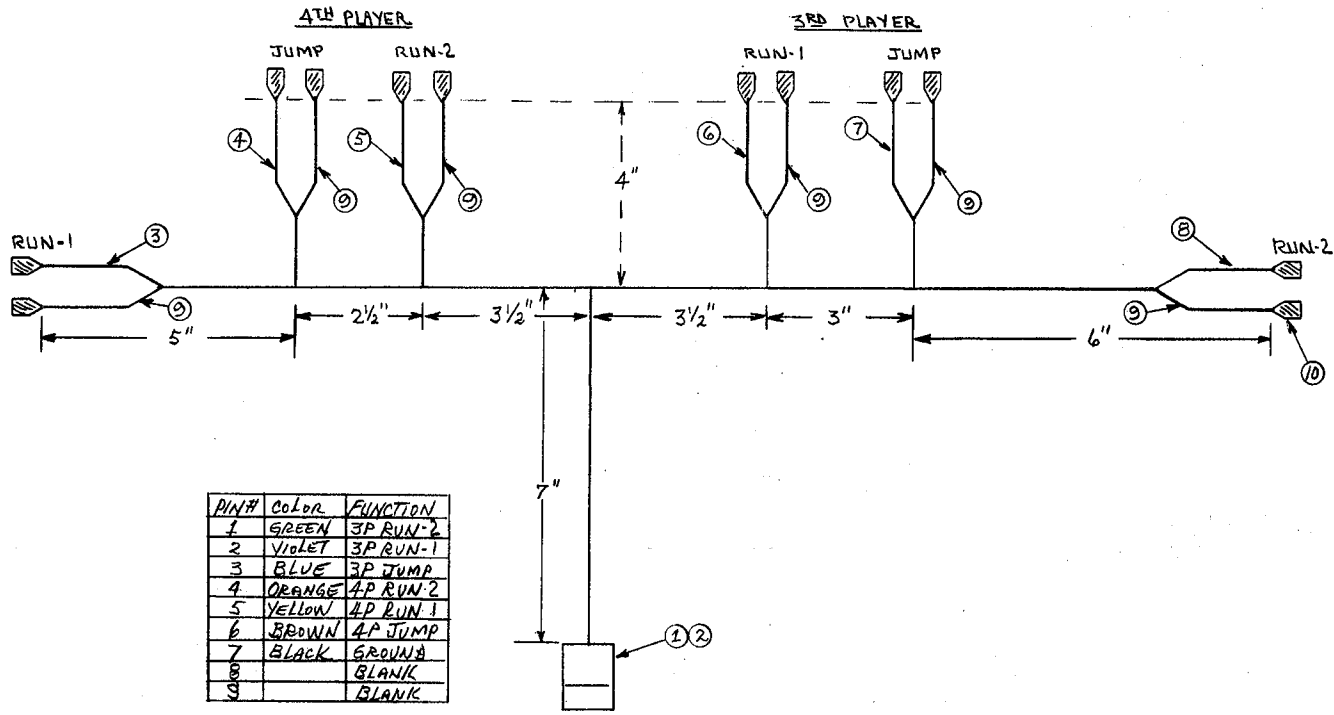
ITEM	QTY	PART NO.	DESCRIPTION
14	25	417-1601	4" TY WRAPS
13	20	401-1302	3/16" PUSH ON TERMINAL CR #95
12	114	402-1517	INSULATED WIRE 22AWG, BLACK
11	51 1/2	402-1520	" " " ORANGE
10	50 1/2	402-1522	" " " GREEN
9	48	402-1523	" " " BLUE
8	49 1/2	402-1519	" " " RED
7	46	402-1525	" " " GRAY
6	44 1/2	402-1526	" " " WHITE
5	87 1/2	402-1521	" " " YELLOW
4	37 1/2	402-1524	" " " VIOLET
3	35	402-1518	" " " BROWN
2	11	401-1232	MALE PIN MOLEX #02-09-2116
1	1	401-1230	12 PIN PLUS MOLEX #03-09-2122

BILL OF MATERIALS

FIGURE 8

REV. LET.	ECN NO.	REVISION	BY	ANGLES	SHT. MET BENDS	TOLERANCES	centuri inc. HIALEAH, FLORIDA 33014			
				Unless Otherwise Specified						
				FRACTIONS ± 1/32		NAME CONTROL PANEL HARNESS-1ST & 2ND PLAYER				
				DECIMALS 2 PL ± .015		MATERIALS HEAT TREAT. FINISH				
				DECIMALS 3 PL ± .005		DWN M.S. DATE 10-14-83 SCALE 1/2 PART NO. 008-4916 REV.				
				HOLES + .003						
				- .001						

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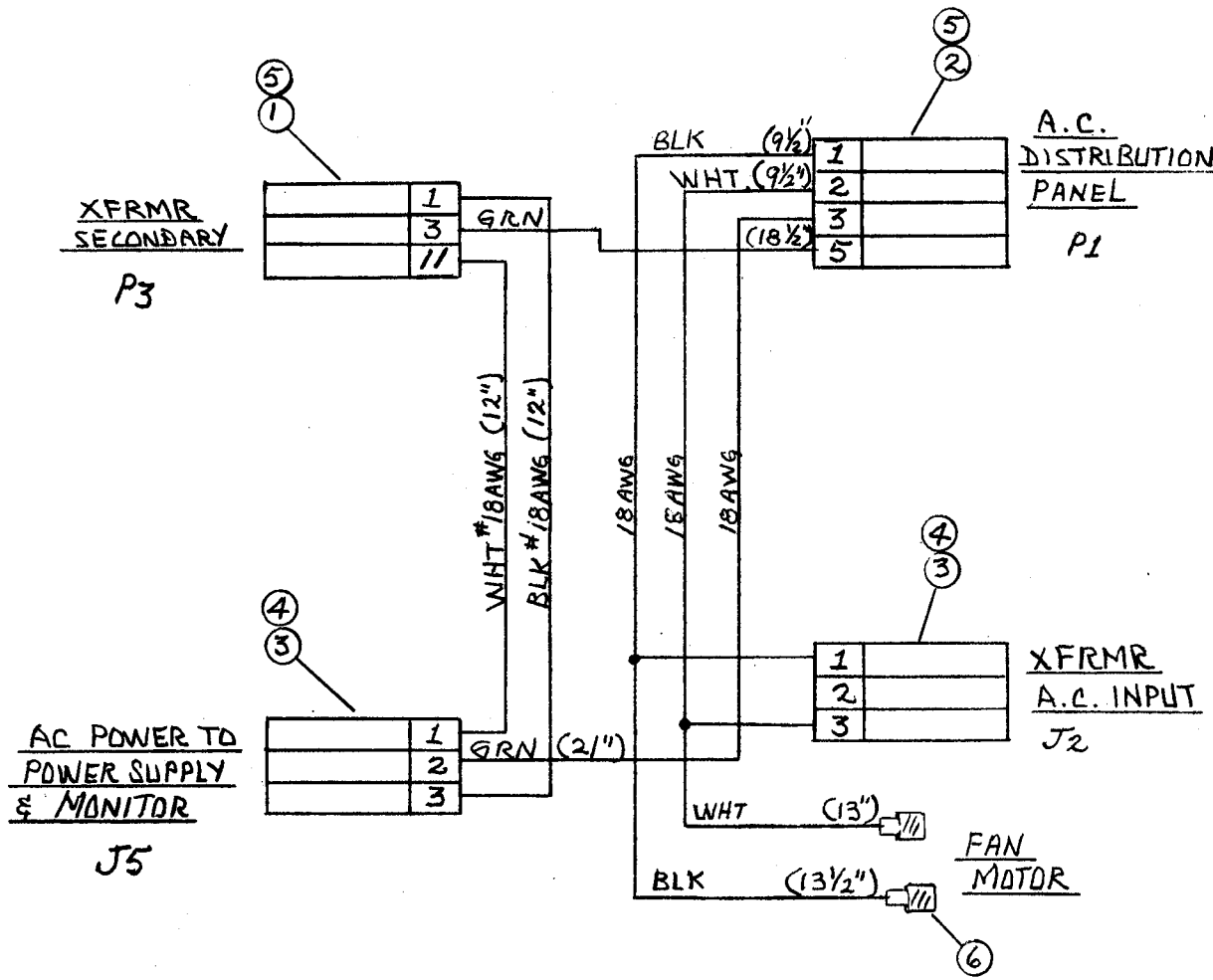
PIN#	COLOR	FUNCTION
1	GREEN	3P RUN-2
2	VIOLET	3P RUN-1
3	BLUE	3P JUMP
4	ORANGE	4P RUN-2
5	YELLOW	4P RUN-1
6	BROWN	4P JUMP
7	BLACK	GROUND
8		BLANK
9		BLANK

ITEM	QTY	PART NO.	DESCRIPTION
11	10	417-1601	4" TY WRAPS
10	12	401-1302	3/16" PUSH IN TERMINAL ETC #895
9	75	402-1517	INSULATED WIRE 22AWG, BLACK
8	19 1/2	402-1522	" " " GREEN
7	17 1/2	402-1523	" " " BLUE
6	14 1/2	402-1524	" " " VIOLET
5	13 1/2	402-1520	" " " ORANGE
4	17	402-1518	" " " BROWN
3	18	402-1521	" " " YELLOW
2	7	401-1222	MALE PIN MOLEX #02-07-214
1	1	401-1222	9 PIN PLUG MOLEX #02-07-214

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

FIGURE 9

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES	centuri inc.	HIALEAH, FLORIDA 33014
				Unless Otherwise Specified	NAME CONTROL PANEL HARNESS - 3RD & 4TH PLAYER	
				FRACTIONS ± 1/32	MATL'S.	HEAT TREAT.
				DECIMALS 2 PL ± .015		FINISH
				DECIMALS 3 PL ± .005	DWN. APP'D DATE SCALE PART NO. REV.	
				HOLES + .003	MS. [Signature]	10-14-83 7x 008-4917
				ANGLES ± 1/2'		
				SHT. MET BENDS ± 2'		



ITEM	QTY	PART NO.	DESCRIPTION
10	8	417-1601	4" TY WRAPS
9	37 1/2	402-1532	INSULATED WIRE, 18AWG, GREEN
8	35	402-1527	" " " " BLACK
7	34 1/2	402-1536	" " " " WHITE
6	2	401-1290	1/8" PUSH ON TERMINAL ETC. AA-8131
5	7	401-1222	MALE PIN MOLEX #02-09-2116
4	5	401-1223	FEMALE PIN MOLEX #02-09-1116
3	2	401-1225	3P RECEPT, MOLEX #03-09-1031
2	1	401-1229	6P PLUG MOLEX #03-09-1061
1	1	401-1230	12P PLUG MOLEX #03-09-2122

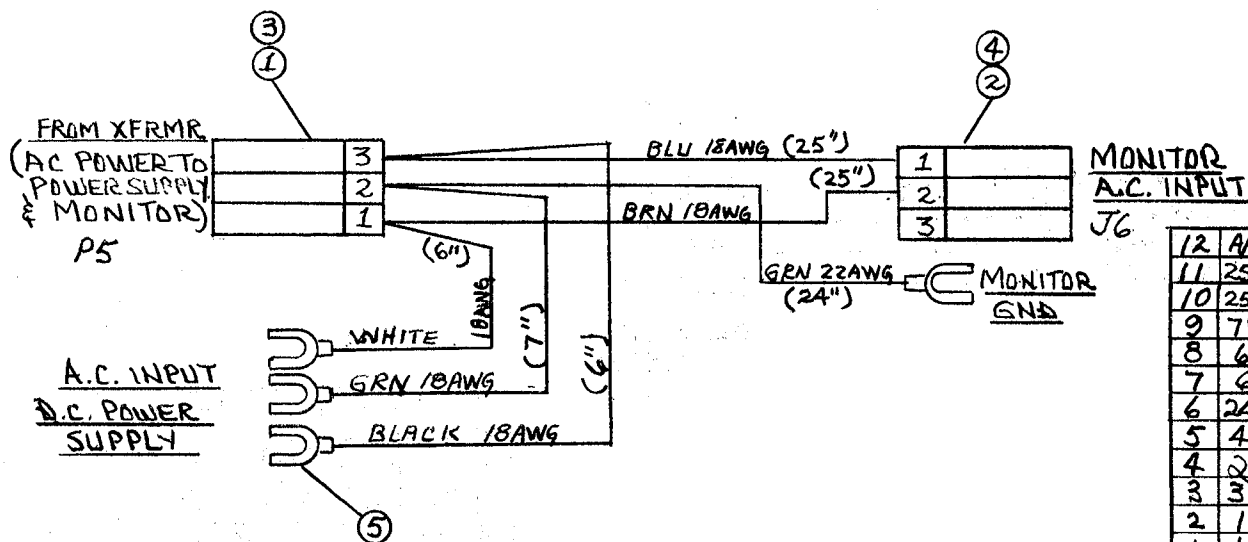
BILL OF MATERIALS

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

FIGURE 10

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES Unless Otherwise Specified		centuri inc.		HIALEAH, FLORIDA 33014	
				FRACTIONS	± 1/32	NAME A.C. POWER DISTRIBUTION HARNESS - C/T			
				DECIMALS 2 PL	± .015				
				DECIMALS 3 PL	± .005	MATERIALS. HEAT TREAT. FINISH			
				HOLES	+ .003				
				ANGLES	± 1/2°	DWN M.S. APP'D. DATE 10-14-83 SCALE 7x PART NO. 008-4918 REV.			
				SHT. MET BENDS	± 2°				

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ITEM	QTY	PART NO.	DESCRIPTION
12	APR	417-1601	4" TY WRAPS
11	25"	402-1533	INSULATED WIRE, 18AWG, BLUE
10	25"	402-1528	" " " BROWN
9	7"	402-1532	" " " GREEN
8	6"	402-1536	" " " WHITE
7	6"	402-1527	" " " BLACK
6	24"	402-1532	" " " GREEN
5	4	401-1246	INSULATED OPEN LUG
4	2	401-1223	FEMALE PIN MOLEX # 02-09-1116
3	3	401-1222	MALE PIN MOLEX # 02-09-2116
2	1	401-1225	3 PIN RECEPT. MOLEX # 03-09-1031
1	1	401-1224	3 PIN PLUG MOLEX # 03-09-2031

FIGURE 11

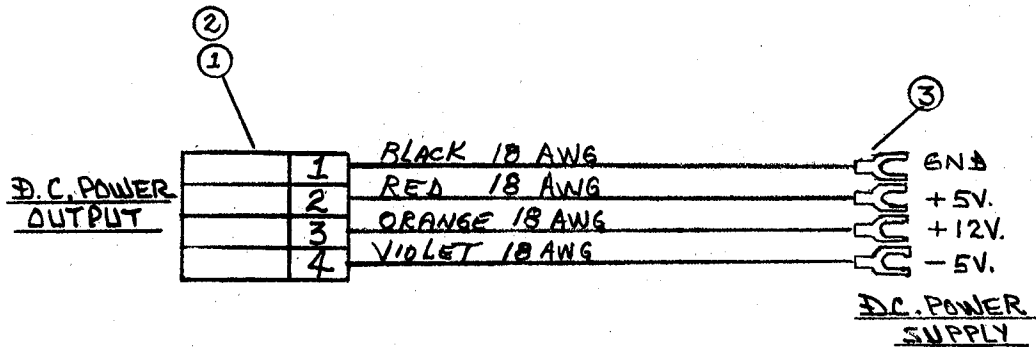
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES		centuri inc.		HIALEAH, FLORIDA 33014	
				Unless Otherwise Specified		NAME			
				FRACTIONS	± 1/32	MONITOR & PWR SUPPLY A.C. POWER HARNESS, C/T			
				DECIMALS 2 PL	± .015	MATERIALS			
				DECIMALS 3 PL	± .005	HEAT TREAT.		FINISH	
				HOLES	+ .003	SCALE			
				HOLES	- .001	DWN		PART NO.	
				ANGLES	± 1/2°	DATE		REV.	
				SHT. MET BENDS	± 2°	10-14-83		008-4919	

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ITEM	QTY	PART NO.	DESCRIPTION
7	7"	402-1527	INSULATED WIRE, 18 AWG, BLACK
6	7"	402-1529	" " " RED
5	7"	402-1530	" " " ORANGE
4	7"	402-1534	" " " VIOLET
3	4	401-1246	INSULATED OPEN LUG
2	4	401-1223	FEMALE PIN MOLEX #02-09-1116
1	1	401-1231	6P RECEPT. MOLEX #03-09-1061
QC. APV'D		PROD. APV'D	QTY. ASSEMBLY NO

FIGURE 12

REV. LET.	ECN NO.	REVISION	BY	TOLERANCES		centuri inc.				HIALEAH, FLORIDA 33014	
				Unless Otherwise Specified		NAME POWER SUPPLY, DC HARNESS C/T					
				FRACTIONS ± 1/32							MATERIALS
				DECIMALS 2 PL ± .015		DWN. MS.		DATE 10-10-83		SCALE 2	
				DECIMALS 3 PL ± .005		APP'D [Signature]		PART NO. 008-4920		REV.	
				HOLES + .003							
				- .001							
				ANGLES ± 1/2°							
				SHT. MET BENDS ± 2°							

AF 17899A